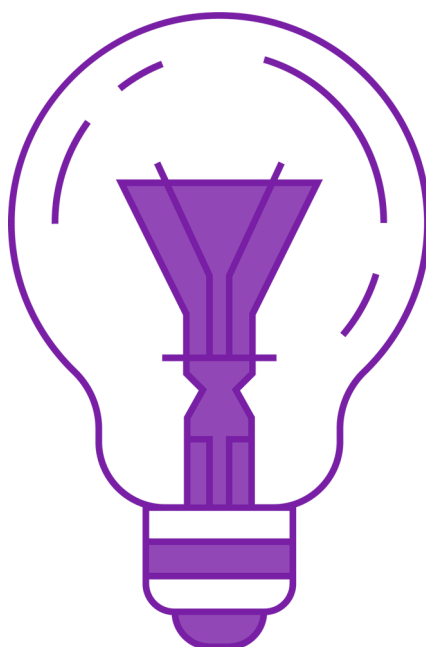




DAS SPECIALISED EDUCATIONAL SERVICES PROGRAMMES

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
3. 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. In the year 2020, SES served a historical high of over 1200 students across the various programmes.

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-educational-services.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 pursuits.

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 Therapist
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 the 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

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

ARTVenture inaugurated our children's uniqueness through customised programs that embraced art from their perspectives.

1. **Essential Elements of Visual Arts (EEVA)** aims to provide essential tools to bring out their artistic minds.

EEVA short term programme is targeted at lower primary students. The programme aims to develop the students' range of skills and processes such as problem solving, simple drawing, and mixed media techniques. It develops the student's basic drawing knowledge through hands-on learning of lines, shapes and forms. Students will be exposed to a series of simple objects, animals and human subjects. Students will produce a series of artworks in this 10 week programme.

- 2. Elementary Mix Media Art (EMMA)** aims to nurture an appreciation of art and an exploration of various art techniques.

EMMA short term programme is targeted at upper primary students. Students experiment with different methods of creating an artwork through charcoal, oil pastels, watercolour, clay. The programme provides opportunity for students to explore 3-dimensional art through styles such as sculpting and fabric art. In the process of learning and creating, students will build their cognitive skills and fine motor development that can contribute to school success. Students will also express ideas and originality through experiments, and create unique artworks, developing self-confidence as their creativity soars.

Entry Criteria

ARTVenture 15-hour 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 the 15-hour programme.

Who the Programme is for

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

NEW INITIATIVES TAKEN FOR 2019

DAS Art Competition

2019 marked a milestone for DAS as it organised its first Art Competition. ARTVenture concretised itself to the need of promoting positive dyslexia in Singapore and talent development of children with dyslexia.

The competition attracted over 260 entries from DAS students, MOE students and

DAS parents. The competition attracted corporate partners to organise more events with DAS as well as featuring our students' work in their project. One of the winners appeared in a fund-raising video "Build a Dream", an Urban Redevelopment Authority initiative. The competition has also led to an increasing interest in ARTVenture short term programmes.

Joint Corporate Social Responsibility (CSR) Programme with UOB Business Banking

Painting by the River is a joint initiative between UOB Business Banking and DAS; UOB staff and DAS students were partnered (1-to-1) to create a drawing themed "Reaching for the Sky". The adult partners get to guide their young friends and provide a tip or two on sketching and painting. The event included a gallery tour of UOB art pieces where students get to view professional art drawings from artists around the world.



DAS Students and staff with UOB Staff at the "Painting by the River" event.



UOB Staff partner with DAS students on the Singapore River.

Rebranding of ARTVenture Short term programmes to Essential Element of Visual Arts (EEVA) and Elements of Mix Media Art (EMMA)

The rebranding of their names and curriculum is to better cater to different abilities and readiness of each age group to pursue the required artistic skills and medium types.

ENGAGEMENT AND AWARENESS

1) DAS Art Competition Prize Presentation Ceremony @ World Dyslexia Awareness Week Road Show 2019

Every year, ARTVenture participates in World Dyslexia Awareness Week to educate the public about the importance of dyslexic's strengths. Even with our comprehensive programmes to support children with dyslexia, it is important not to forget their multiple talents. ARTVenture's Sunflower Mosaic centrepiece attracted well-wishers to pen encouraging words for our children.

At the event, DAS competition winners were invited to collect their prizes from our guest of honours. These special moments serve a memorable occasion for our students as for many of them it was the first time that they felt validated for their achievements and this gave them a sense of success.



2) WDAW Art Exhibition @ OnePeople.sg

ArtVenture took part in the organization wide exhibition that was held at One People.Sg in Toa Payoh during the World Dyslexia Awareness Week 2019 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.

3) WDAW UOB Corporate Colouring Competition

To engage stakeholders and create understanding of dyslexia, ARTVenture organised a corporate colouring competition where UOB staff get to participate in a fun colouring activity and cheer their colleagues on during the prize presentation ceremony at World Dyslexia Awareness Day.

4) Marina Bay Countdown 2019 @ ArtScience Museum

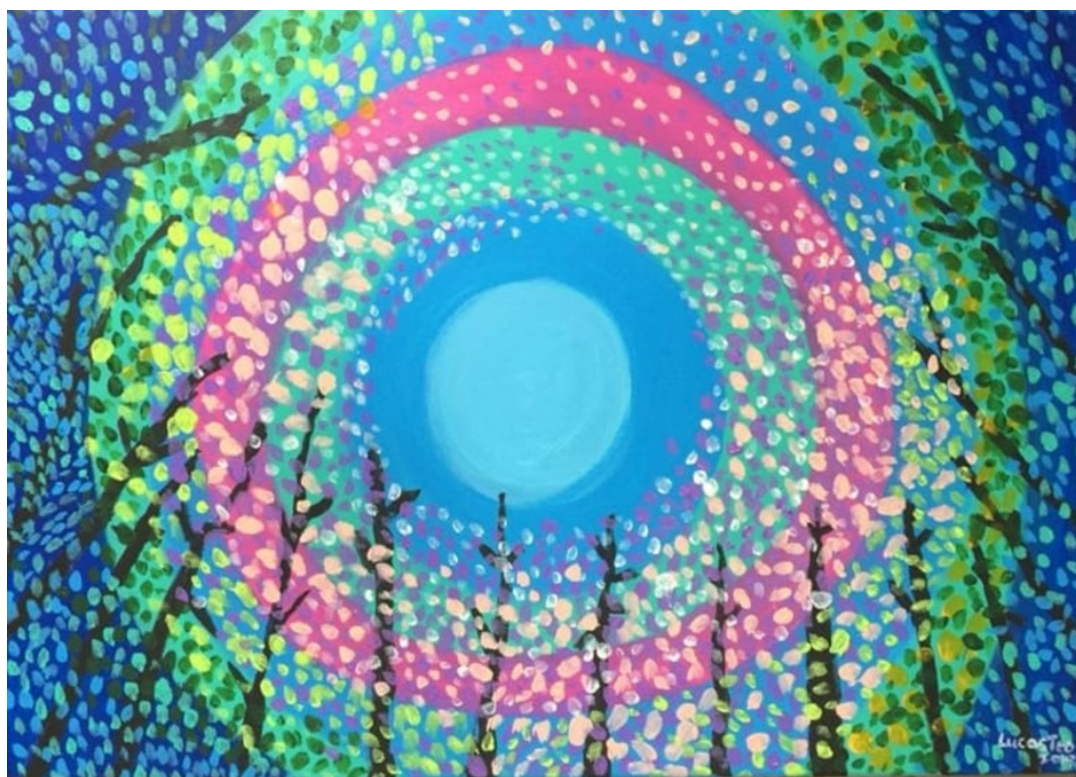
Marina Bay Countdown 2019 was a project initiated by Urban Redevelopment Authority (URA) and in partnership with the National Volunteer & Philanthropy Centre presented the Build a Dream initiative, a collective effort to support the less fortunate in fulfilling their dreams and personal development. As part of the initiative, artworks created by DAS students were transformed into a series of dazzling light projections on the facades of key landmarks around Marina Bay.



4) ARTVenture Playground Gallery @ DAS Student Graduation 2019

Celebrating success with our graduates and their family, ARTVenture created a playground of art pieces to showcase the talents of our current and past students. This was a great opportunity to educate parents and the public on the other positive traits that come with having dyslexia.

5) DAS Student Graduation 2019 GOH Token



Artist: Lucas Teo Kai Woon (Primary 3) from Bedok Green Primary School.

“Every child in DAS is a life worth nurturing. Each tree represents a unique life. For it to grow, it needs careful nurturing with the right conditions. Just like a tree, students with dyslexia can flourish only when they are given the right conditions to learn and explore their potential. While each student is made for a different purpose, they all have the same goal in their time in DAS, and that is to arm themselves with adequate literacy skills to take on whatever challenges they will face in their own unique path. A tree stretches up towards the sun and its goal is growth. While our students will face difficulties in their journey, they will learn to stand tall like the trees

to weather through every storm. The graduation of our students today is a testament of their continuous growth from day one. May they continue to grow and see the glow of their success like a rainbow at the end of a storm.”

To showcase our students’ talent, ARTVenture collaborates in various organization-wide events to provide platforms for our students to present their unique pieces to various GOHs.

6) One of such examples can be seen in an announcement video by Minister of Education Ong Ye Kung on 24 April 2020 that Singapore Youth Festival was going to be held online, one of our students' art piece that was presented to him as a token of appreciation can be seen proudly displayed in the backdrop (picture of tortoise).



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 has 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.

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

Li Dong¹, Lee Mei Yu², Loo Chien Ling³, and Kong Yun Rui⁴

1. *Chinese Programme Manager and Senior Educational Therapist*
2. *Senior Educational Therapists and Chinese Teacher*
3. *Educational Therapist and Chinese Teacher*
4. *Lead Educational Therapist and Associate Lecturer @ DAS Academy*

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 use a structured literacy intervention that fosters a love for learning and equips students with strategies to learn independently facilitated by parents outside of the classroom.

In 2017, we also extended our support to lower secondary school students, helping them to cope with the demands of learning Chinese in school. In 2019, we started to have 2-hour classes for P6 students at Bishan and Rex, to better support the students to cope with the PSLE.

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 competency and success.

PROGRAMME DESCRIPTION

Entry Criteria

Students between the ages of seven and fourteen years of age with a diagnosis of dyslexia.

A profiling test using the Chinese Literacy Assessment Tool (CLA) 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 2019

Total enrolment for the calendar year 2019	275
Primary School	249
Secondary School	26
No. of students profiled	112
No. of Chinese dedicated educational therapists	9
No. of Chinese dual specialists	4
No. of Chinese educational therapists on flexi schema	3
No. of students on bursaries	52

RESEARCH CONDUCTED

The progress of the students over the course of the year was monitored under 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 secondary school students on all three tasks covered a wider range of high frequency words.

Primary school students receiving an hour of intervention weekly

There was a total of 200 students on the programme and 116 students were monitored for their progress. They each received an average of 37 hours of intervention in a year. To cater to developmental differences, the learners were grouped according to age for analysis, with the lower primary group comprising students from Primary 1 to 3 and the upper primary group comprising students from Primary 4 to 6.

Lower Primary

There were 42 students (27 males, 15 females) in the lower primary group. The mean age of the participants at the time of post-test was 105 months (8 years 9 months). A paired-samples t-test was used to compare the mean scores of the students at the start and end of intervention. Scores were significantly higher for character recognition after intervention ($M = 25.02$, $SD = 21.96$) as compared before the intervention ($M = 19.76$, $SD = 17.82$), $t(42) = 3.48$, $p < 0.001$.

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

Outcome	Pre-test		Post-test		n	95% CI for Mean Difference	t	df
	M	SD	M	SD				
Reading	19.76	17.82	25.02	21.96	42	2.20, 8.31	3.48**	41
Word Forming	19.12	17.66	24.43	21.44	42	2.35, 8.27	3.63**	41
Spelling	11.57	10.77	16.33	15.47	42	1.97, 7.56	3.44**	41

** $p < 0.001$.

As displayed in Table 1, there are statistically significant differences, at the 0.001 significance level, in pre-test to post-test scores for character reading ($p = 0.000$), word forming ($p = 0.000$) and spelling ($p = 0.000$). Results show that students were able to read more characters, form more words and spell more characters after intervention.

Upper Primary

There were 74 students (51 males, 23 females) in the upper primary group. The mean age of the participants at the time of post-test was 132 months (11 years 0 months). A paired-samples t-test indicated that scores were significantly higher for character recognition after intervention ($M = 36.51$, $SD = 22.95$) as compared to prior to the intervention ($M = 30.43$, $SD = 18.58$), $t(74) = 5.08$, $p < 0.001$.

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

Outcome	Pre-test		Post-test		n	95% CI for Mean Difference	t	df
	M	SD	M	SD				
Reading	30.43	18.58	36.51	22.95	74	3.70, 8.47	5.08**	73
Word Forming	29.93	18.35	35.45	22.23	74	3.19, 7.83	4.74**	73
Spelling	22.46	15.31	28.24	17.14	74	353, 8.04	5.11**	73

** $p < 0.001$.

As displayed in Table 2, there are statistically significant differences, at the 0.001 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 more words and spell more characters after intervention.

Primary school students receiving two hours of intervention weekly

There was a total of 30 students on the programme and 19 students (10 males, 9 females) 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 post-test was 140 months (11 years 8 months). A paired-samples t-test was used to compare the means of the students at the start and end of intervention. Scores were

significant higher for spelling after intervention ($M=39.89$, $SD=25.29$) as compared to prior to the intervention ($M=33.63$, $SD=20.06$), $t(19) = 2.45$, $p < 0.05$.

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

Outcome	Pre-test		Post-test		n	95% CI for Mean Difference	t	df
	M	SD	M	SD				
Reading	43.63	25.33	46.42	27.59	19	-1.02, 6.60	1.53	18
Word Forming	42.11	24.35	45.84	27.03	19	-0.37, 7.84	1.91	18
Spelling	33.63	20.06	39.89	25.29	19	0.88, 11.64	2.45*	18

* $p < .05$.

As displayed in Table 3, there are statistically significant differences in pre-test to post-test scores for spelling ($p = 0.025$). Although there were improvements in reading and word forming, the differences in pre-test to post-test scores for reading ($p=0.141$) and word forming ($p=0.072$) are not significant.

Secondary school students receiving two hours of intervention weekly

There was a total of 26 students on the programme and all students (15 males, 11 females) 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 post-test was 164 months (13 years 8 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 ($M=53.85$, $SD=19.94$) as compared to prior to the intervention ($M=45.96$, $SD=18.51$), $t(26) = 4.68$, $p < 0.001$.

As displayed in Table 4, there are statistically significant differences in pre-test to post-test scores for character reading ($p=0.000$), word forming ($p = 0.000$), spelling ($p = 0.000$) and writing ($p = 0.001$). Although there was an overall improvement in their reading comprehension scores, this improvement was not statistically significant ($p = 0.075$). Results show that students were able to read more characters, form more words, spell more characters and improved in comprehension reading and writing after intervention.

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

Outcome	Pre-test		Post-test		n	95% CI for Mean Difference	t	df
	M	SD	M	SD				
Reading	45.96	18.51	53.85	19.94	26	4.41, 11.36	4.68**	25
Word Forming	41.69	17.20	48.88	18.18	26	4.28, 10.10	5.09**	25
Spelling	46.04	15.50	51.54	15.26	26	2.81, 8.19	4.21**	25
Reading Comprehension	3.44	2.17	4.17	1.59	26	-0.08, 1.54	1.86	25
Writing	8.31	5.28	13.46	4.89	26	2.50, 7.81	4.00**	25

** $p < 0.001$; * $p < 0.05$.

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, the consultant for the Chinese programme, is a former curriculum specialist with the Ministry of Education and the current lecturer in the National Institute of Education. She helps oversee the quality assurance of the programme by observing every Educational Therapist's lesson yearly.

TEACHER TRAINING

All educational therapists teaching in the Chinese Programme undergo a Professional Certificate Course in Dyslexia and Chinese Language Teaching and a Certificate in Supporting SpLD learners in Advanced Chinese Literacy Skills in their first year of teaching. These certifications are provided by the DAS Academy. Most also receive a postgraduate certificate in Special Education Needs in their second year. All would also have attained a Level 6 in the Hanyu Shuiping Kaoshi (an accredited Chinese proficiency test by Chinese Language Council International, China).

Educational therapists that solely teach the Chinese Programme have a Diploma in Chinese Language Teaching or Specialist Diploma in Educational Therapy (Chinese Support). Additional training is provided for educational therapists who are supporting secondary school students.

In-house training and professional development is conducted internally and with Dr Tan Ah Hong. She has thus far conducted training for the team on curriculum development, improving teachers' competency, word recognition, reading comprehension and writing.

NEW INITIATIVES UNDERTAKEN FOR 2019

Initiative 1: Scope and Sequence for the Chinese programme

Over the years, the Chinese team has been creating curriculum packs and materials to support EdTs in teaching. The new scope and sequence for the Chinese programme is designed to better organise the resources under a coherent framework, so as to make the teaching more systematic and to provide better support for teachers. This also presents as an opportunity to review and refine the materials that have been completed so far. The Scope and Sequence will be completed in 5 years, with the entire Chinese programme team's involvement. At this point, we have completed the preliminary framework and drafted the teacher's user manual, which sets the directions and foundation for future efforts.

Initiative 2: Secondary School Bridging Programme

The first-year curriculum has been reviewed to ensure its relevance and effectiveness in bridging the learning gap for the secondary school students. The second-year curriculum was completed as well, and we had our first batch of 9 Secondary 2 students officially complete the secondary school bridging programme. The programme now serves a total of 26 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: Providing Training in China

Since 2018, the Chinese team, together with DAS Academy, has started to provide training and workshops to parents and educators in China. On 14 and 15 December 2019, the team conducted 4 trainings in Shenzhen and Guangzhou, partnering with a local educational technology company. The training focuses on the common symptoms of dyslexia, the impact on Chinese learning and strategies to support dyslexic learners learning Chinese. The participants enjoyed the training thoroughly through the interactions and activities. Around 100 participants joined the training comprising mainly parents, educators, and medical students.

ENGAGEMENT AND AWARENESS

We conducted a Hanyu Pinyin workshop during June Holidays to help students better understand and differentiate sounds in Chinese characters. After the workshop, we also provided a take home learning pack for students to practise at home.

In April, a teacher from Lianhua Primary School completed an attachment with us for 4 weeks, observing our lower primary and upper primary Chinese lessons to better understand dyslexia and Chinese learning. We also had the opportunity to observe primary and secondary classes in mainstream schools to understand the curriculum and content taught, which helps us to better understand the challenges our students are facing in school.

We have been invited to share with Chinese teachers from Admiralty Primary School, Punggol Primary School, Qifa Primary School and Naval Base Primary School to help them better understand dyslexia and Chinese learning. More than 50 teachers have benefitted from the sharing. In addition, we had an open house at our Jurong Point Learning Centre for the public and parents to understand more about our Chinese Programme.

We organised and attended “Child Abuse Reporting Guide” talk by a presenter from the Ministry of Social and Family Development, which was beneficial for our Educational Therapist who are working with children with different backgrounds.

TESTIMONIALS

My child feels comfortable learning Chinese from teacher Ni as she pitches her teaching to the level of the children under her care. She is patient and spends time getting to know each child and embeds the lessons with the daily lives. This guides the children to see how they can practise the lessons taught in their daily lives. She spends time to communicate with the parents through frequent and regular emails, detailing the lessons taught.

- Parent of Primary 3 student from Serangoon

My child has been learning to recognise more Chinese words and speak more Mandarin.

- Parent of Primary 4 student from Sengkang

She is motivated to learn and continues to attend class with joy.

- Parent of Primary 5 student from Bishan

He has a better attitude toward Chinese /paper.

- Parent of Primary 6 student from Rex

I am particular pleased that my daughter had shown great improvement in her Chinese language.

- Parent of Primary 4 student from Bishan

My son always speaks highly of teacher Li, citing his interesting way of teaching Chinese. He will ensure he does the homework given by DAS.

- Parent of Secondary 2 student from Bishan

We are very pleased with our boy's progress and he has shown great improvement over the years.

- Parent of Secondary 1 student from Queenstown

SUCCESS STORIES

I had the privilege of teaching two Primary 6 students, who only joined in 2019. Prior to joining our programme, they were near borderline pass or failing their Chinese exams. However, with strategies taught and their hard work, I witnessed both blossoming to become confident learners of the language, scoring B and C for their PSLE. Their positive learning attitude and progress helped inspire their Primary 5 classmates to also strive to do well, and to overcome their fears of the PSLE.

Cailyn Kwan, Senior Educational Therapist

Jun Yi used to be my student in primary school. He re-joined DAS when he was in Secondary 2 in 2019. When he joined my class, he was quiet, had low self-esteem and was very resistant to writing. His mother mentioned that he faced difficulties in school, especially with Chinese learning. He started to pick up the strategies and skills I taught in class after a while and became more active. Gradually, he began to enjoy the way we teach and the interaction with classmates, resulting in him to initiate more practices at home. Through his effort, he managed to pass the express Chinese exam at the end of the year and was awarded with a Good Progress Award in school. He also became more confident with his Chinese and showed increased interest in the language as well.

Li Dong, Senior Educational Therapist

(all names have been changed to protect the identity of the students)

ABOUT THE AUTHORS



LI DONG

Chinese Programme Manager and Senior Educational Therapist

Li Dong has been with the DAS for more than five years. He provides intervention for both primary and secondary learners with dyslexia on the Chinese programme. He is also conducting the curriculum for both primary and secondary lessons and mentoring other teachers to ensure the teaching qualifications. Currently, he is leading the secondary school bridging programme to provide intervention to secondary school students. In addition, he is also an adjunct lecturer with the DAS Academy, helping to train and support parents and educators.

Li Dong has a strong interest in conducting the curriculum and lecturing the knowledge to educators. He has been the programme manager of the DAS Chinese programme since 2020.



LEE MEI YU

Senior Educational Therapist and Chinese Teacher

Mei Yu is a Senior Educational Therapist at the Bishan Learning Centre. She provides intervention for learners with Dyslexia on the Chinese programme. Besides, she develops and is in-charge of the curriculum and teaching resources for the team. She has pioneered the 2-hour Chinese programme in DAS and has also conducted preschool Chinese workshop. Mei Yu has a strong interest in research and has participated in data collection for various studies, which includes the effectiveness of a Chinese Literacy Assessment tool for school learners in Singapore, Secondary School Bridging Programme, 2-hour Chinese programme, reading comprehension study and writing interest study. She is also one of the presenters of Unite SpLD 2020, presenting her research with the team on The Impact of a Structured Chinese Literacy for Dyslexics.



LOO CHIEN LING

Educational Therapist and Chinese Teacher

Chien Ling has been with the DAS since 2017. She provides intervention for learners with dyslexia in the Chinese programme. In addition, she is also involved in the Secondary School Bridging Programme, providing interventions and developing resources suitable for students in the programme.

Chien Ling has a strong interest in understanding the needs of learners with Dyslexia learning Chinese and developing a suitable curriculum for them. She is part of the curriculum design team to develop materials and lesson plans tailored to meet the needs of different learners. She is also part of the mentoring team by providing support to new colleagues.



KONG YUN RUI

Lead Educational Therapist and Associate Lecturer @ DAS Academy

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 associate 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 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.

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 the 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.

RECOMMENDED 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 Winnie Wee³

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

Dyslexia Association of Singapore

INTRODUCTION

The SES Maths Programme seeks to identify the difficulties students with dyslexia have with understanding Maths concepts, the language of Maths and proficiency in Mathematical skills and to address these difficulties through dyslexia-friendly Math remediation. The 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 visualize 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 solve 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.

PROGRAMME DESCRIPTION

ENTRY CRITERIA

The Maths programme accepts all primary school students with a valid diagnosis of dyslexia. Students attending the School-based Dyslexia Remediation programme (SBDRe) are welcome to apply for the programme.

EXIT CRITERIA

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

WHO THE PROGRAMME IS FOR

This programme is intended for students with dyslexia who are having difficulties with Maths. These difficulties could include not being able to remember and execute mathematical facts and procedures (e.g. times tables, long division) accurately and fluently; difficulties with number sense (e.g. with comparing and ordering numbers, rounding off), difficulties understanding Maths concepts and understanding the language of word problems.

EVALUATION OF PROGRAMME FOR FY19/20

Enrolment numbers (Essential Maths & Problem Sums for Upper Primary)

Other programmes:

	Term 2, 2019	Term 3, 2019	Term 4, 2019	Term 1, 2020
Enrolment numbers	285	307	331	301
Bursaries provided for beneficiaries	129	154	166	113

No. of students graduated	93
No. of Educational Therapists	28

Sec 1NT Short-term Programme (Term 1, 2020)

2. School-based Projects

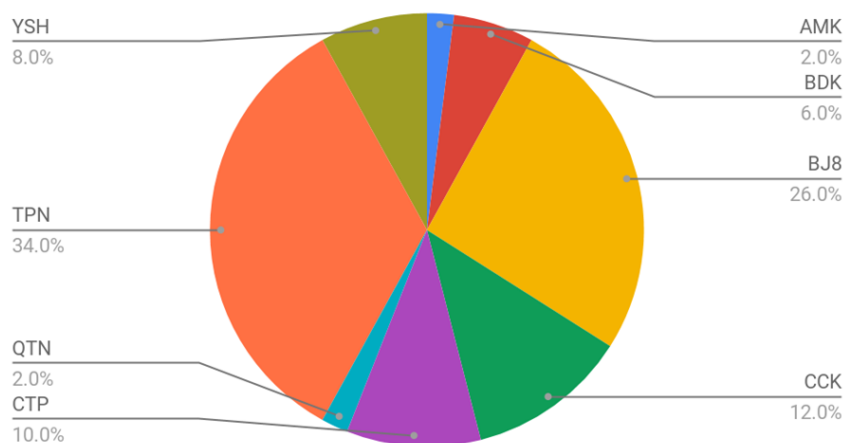
Parent Satisfaction Survey

Enrolment Numbers	20
No. of teachers trained	8
Learning Centres involved	3

Number of Projects	1
Enrolment Numbers	5
No. of teachers trained	1

The Maths team conducted a survey at the end of 2019 to gather feedback from parents with regards to the programme. This survey was conducted via Google Forms to allow parents from our 13 learning centres to participate easily. A total of 50 parents from 8 learning centres responded to this survey. The chart below shows the spread of participants across our learning centres.

Responses for Parent Satisfaction Survey (2019)

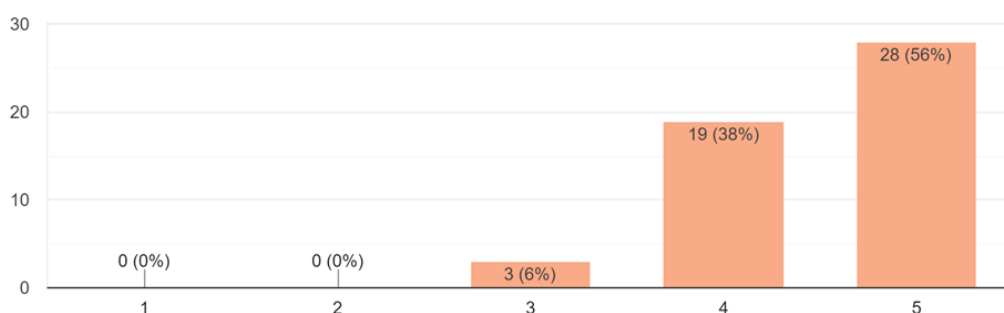


Learning Centre	No.
AMK	1
BDK	3
BJ8	13
CCK	6
CTP	5
QTN	1
TPN	17
YSH	4

The chart below shows that all our participants were satisfied with our service, with 94% of the participants giving us a score of at least a 4 out of a 5 in terms of their satisfaction.

How satisfied are you with the Maths programme?

50 responses



Upon further investigation, it was revealed that the parents were pleased with the dedication and care our Educational Therapists at the DAS showed towards their children (16 responses). They also observed the progress their child was making, under the care and guidance of our teachers (12 responses). Some parents even mentioned that they witnessed a positive change in their child's attitude towards Mathematics and even regaining their confidence in the subject (7 responses). This is heartening to hear.

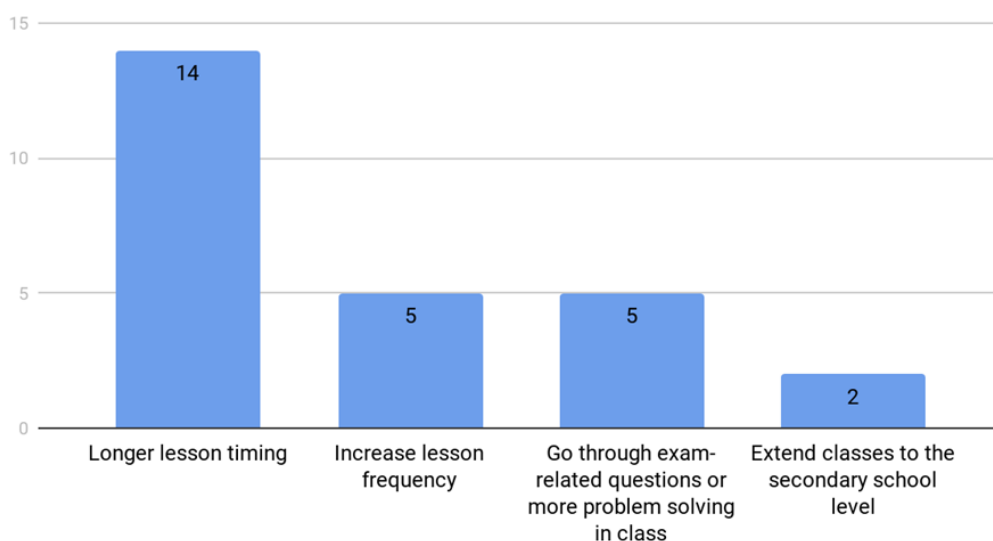
Another theme that surfaced from the participants' responses was that their children enjoyed attending our DAS Math classes (34 responses). The students enjoyed the interactions they had with their classmates and with their teachers. Of the 34 responses, a parent said that her son did not want to miss any lesson. This goes to show that the methodology of the programme is appropriate and suitable for our students with dyslexia. The two areas that the team has done well in include the suitability of the strategies taught by the teachers in our classrooms, as well as teacher engagement.

Areas for improvement

While the feedback given by parents have been generally positive, parents also highlighted four areas which they would like the team to improve on. Firstly, they would like our lessons to be of a longer duration (about 1.5 to 2 hours per session); for the programme to increase the frequency of our lessons to twice a week; for teachers to go through and practice more exam-related questions in class and for us

to extend our services to the secondary school level. The chart below shows the frequency of such feedback

Areas of improvement



DAS takes parent feedback seriously. The Maths core team has already begun to work on some of these areas (such as providing a 10-week short-term programme for students taking Maths at the Secondary 1 Normal Technical level in Term 1, 2020) and we will continue to do more to address these gaps. We would like to take this opportunity to thank all the parents who participated in this survey for your honest feedback and for your support towards our programme.

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. Furthermore, all Maths educational therapists are required to observe another therapist's class teaching to learn from one another and share good teaching practices.

A total of 28 Math educational therapists were assessed for quality assurance in classroom teaching practices in 2019-2020. 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 3 educational therapists were trained as Maths dual specialists in Term 4 2019. All of them are educational therapists 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 (DAC). 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 DAC. This is followed by a Professional Certificate Course jointly conducted by DAC 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 IN FY19/20

Initiative 1: Sec 1 NT Short-term Programme

Parents often ask us if there is any Maths support for children moving on to secondary school. In response to this request, the team has worked together to launch a 10-week Short-Term Programme (STP) for Secondary 1 Normal Technical students.

This STP consists of curriculum-based lessons covering Numbers and Algebra concepts and questions set in real-world context. This programme aims to promote their readiness, engagement and mastery in the topics that are usually covered in the first term of the school year. Such support is essential in building their confidence as they transit to secondary school maths.

In 2019, we targeted four learning centres to pilot this programme. We provided 9 hours of training for a group of 8 teachers to prepare them to execute the learning activities in the Sec 1NT curriculum pack. Subsequently, 20 students from Jurong Point, Bishan and Parkway Parade Learning centres were enrolled for the launch in January 2020. Positive feedback was received and we hope to offer this programme to more learning centres in the future. We also want to look into expanding the curriculum to another ten hours, making it a total of 20 hours.

Initiative 2: Hiring of Maths Interns

The Maths team recruited two interns from the National Technological University (NTU) for the first time. The interns were with the DAS for about 10 weeks from end of May to early Aug 2019. During their internship, they were able to learn more about dyslexia and the work we do to help people with dyslexia achieve. Their job description involved attending and contributing in all curriculum team meetings. They were also trained to conduct profiling tests for students for the purpose of placement into classes. In addition, they had the opportunity to get involved in the development of curriculum-related resources (including powerpoint slides to introduce problem types and heuristics). In June, they were also called upon to help out with Maths Open House where they facilitated the participants who came for profiling. At the same time, they gained some experience in helping out with data analysis of our research then. On top of that, they were given the privilege to observe our Literacy and Maths classes. They even had the opportunity to co-teach some of the Maths classes which provided them an insight on how to teach children with specific learning differences. At the end of it, they had to present their internship experience to DAS. Their weekly reflections on their experiences were also submitted as part of their internship. Overall, the maths team had benefited from their presence, not only in terms of the work that they have helped in, but because of their invaluable

perspective and injection of fresh inputs to the team. The teachers in DAS were also given the opportunity to mentor and share their knowledge and expertise, providing professional development and positive mindset growth to all stakeholders.

Initiative 3: Maths Open House

During the 2019 June holidays, the Maths team organized our first Maths Open House to spread awareness of our Math Programme, as well as conduct mass profiling tests for new students.

We had a successful turnout of 46 students over 2 sessions. The Open House included a profiling session for each student, a talk for parents to share about Maths Support at the DAS, as well as a one-to-one debriefing session for parents with our Math educational therapists. Parents were also given the opportunity to take a look at our concrete materials used in class at our booth display.

ENGAGEMENT AND AWARENESS

No. of school talks in FY19/20	3
No. of parent talks in FY19/20	4
No. of articles written in FACETS/DAS blog	3

Other events to create engagement and awareness of the programme:

- 1 Presentation at Unite SpLD Conference (Conference)
- 1 Sharing session to interns from Taiwan National University
- 2 MOE teacher attachments
- 1 Sharing session with MOE representatives

TESTIMONIALS

“My son enjoys the lessons. The class has a small teacher student ratio, conducive environment, duration not too long and he understands the lessons.”

~ TPN Parent

“Ms Sofia will update me via email on what has been taught in class and share on the learning goal for my son.”

~ TPN parent

“Teacher Siti is very patient with Danny and she is able to accommodate to his learning needs. For example, he wouldn't talk much but Teacher Siti uses other methods by getting him to point instead. Given such a short time, he is slowly warming up to the class and opening up. Good job Teacher Siti.”*

~ BJ8 Parent

“My child has learnt not to be resistant to Math, all thanks to the supportive teachers at DAS”

~ CCK Parent

“(Teacher Rebecca) is a very dedicated teacher, and is always there to support my son”

~ CCK Parent

“Charlene is happy to learn Maths with Ms Albel and classmates”*

~ BJ8 Parent

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

Aishah has been with the Dyslexia Association of Singapore since 2007 and a pioneer member of the Maths core team. She provides Mathematics intervention for learners with dyslexia and has years of experience with curriculum planning and designing appropriate teaching approaches and lesson materials in line with the Singapore Primary / Secondary MOE school Maths curriculum.

She aims to meet the diverse needs of DAS students of varying abilities so that they can confidently work out computation sums as well as word problems applying appropriate heuristics.

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 strongly believes that students learn mathematics concepts readily when Mathematics is made meaningful and fun for them.



SITI AISHAH BTE SHUKRI

Senior Educational Therapist

Siti Aishah Shukri is a Senior Educational Therapist and has been teaching children with dyslexia in DAS for over 10 years. She provides small group intervention for maths and literacy. She does curriculum development, training, and research for the Maths programme. She has conducted talks and workshops for students, parents and educators, locally and internationally. She is trained in Advanced Certificate in Training and Assessment (ACTA) and holds a Post-Graduate Certificate in Specific Learning Differences with London Metropolitan University, UK. She is also trained in Mathematics Teaching-Primary (Marshall Cavendish). Her works include research of the Maths programme in DAS. Ms. Siti Aishah is also a member of the Register of Educational Therapist Asia (RETA). Her teaching philosophy is to teach a child the way he or she learns best.



WINNIE WEE

Senior Educational Therapist

Winnie is a Senior Educational Therapist and Math Dual Specialist at Seng Kang Learning Centre. She joined the Dyslexia Association of Singapore in 2012 and has since been providing intervention and working alongside students with dyslexia and other co-morbidities, such as ADHD, on the Main Literacy Programme and the Maths programme.

Winnie has a strong interest in specific learning difficulties such as dyslexia, dyscalculia and how they impact the learning of Mathematics. As part of being a member of the Math Core team, she contributes by developing teaching approaches and accompanying teaching resources and worksheets for the respective primary school levels. Additionally, she helps to conduct profiling tests and assesses new students' abilities to ensure that they are placed into suitable classes accordingly.

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 and Joanne Tan Shi Huey³

1. *PREP 2 PSLE Programme Manager*

2. *Lead Educational Therapist*

3. *Senior Educational Therapist*

Dyslexia Association of Singapore

INTRODUCTION

The programme has been renamed as 'PREP 2 PSLE' (Preparation for English Paper 2 PSLE) since 2019. It offers 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). In recent years, the Ministry of Education (MOE) has been building on efforts to reduce an over-emphasis on academic results while developing students to become lifelong learners who enjoy the process of learning. In line with this, the PREP 2 PSLE (or P2P—as we like to call it now) programme aims to help learners become confident users of the English language in the long run. Students get to enjoy learning the language through its fun and unique teaching strategies.

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

Recognising that students' needs extend beyond the above mentioned components, the team has further developed and successfully launched various Short Term Programmes (STPs). This includes the Oral English Exam Skills, Comprehension Cloze,

Pre-Secondary bridging programme and PSLE Bootcamp being the most recent. These STPs aim 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 through block deliveries of 10 hours each. On top of this, the team continues to conduct events such as Readiness Tests and Parents Support Group (PSG) talks to reach out and provide support to more students and parents.

P2P lessons follow the Orton-Gillingham Principles closely and are conducted in multisensory, structured, progressive and emotionally sound ways. The P2P team also came up with their own instructional approach: RIMAIR (Review, Introduce, Model, Apply, Independent application, Recap). At the start of each lesson, previously learnt concepts are constantly reviewed before introducing new concepts systematically and progressively. Within each lesson, students are expected to gradually work towards an independent application of skills through attempting PSLE format question types.

PROGRAMME DESCRIPTION

Enrolment in the P2P programme was originally only offered 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 a reasonable level of reading fluency so that emphasis can be placed on the student's acquisition of new skills and strategies applicable to the English examination and not on decoding words. Supported by a research study the team had conducted, the programme has extended its reach to non-DAS students since 2019. The team believes that the structured and systematic teaching approach, accompanied by the uniquely developed curriculum and materials, would benefit struggling learners, with or without dyslexia. These non-DAS students include those who are in the School-based Dyslexia Remediation programme (SDR) and meet the above-mentioned criteria. Students attending the SDR programme are eligible to enrol for P2P 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.

Until recently, students can be placed in 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. Since May 2020, the team has made changes to its curriculum which now allows students to join or start the programme anytime from Week 1 to Week 7 of any teaching terms. Allowing for such flexibility will help to meet increasing demands instead of delaying the student's learning to the start of the next teaching term.

P2P 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.

P6 students who are currently in the P2P 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 some of the basic skills and components of the Secondary School English curriculum that includes 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 students, 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
<ul style="list-style-type: none"> - Grammar - Editing - Comprehension 	<ul style="list-style-type: none"> - Synthesis and Transformation - Editing - Comprehension 	<ul style="list-style-type: none"> - Synthesis and Transformation - Editing - Comprehension 	<ul style="list-style-type: none"> - Active Listening & Note-taking - Visual Text Comprehension - Grammar Editing

On top of the main programme, the P2P team has also developed various Short Term Programmes (STPs) to deliver specific content relevant to the Primary School English Examinations. To date, the team has designed and conducted 3 such STPs, namely, Oral Exam Skills, English Compre Cloze Passage and PSLE English Paper 2 Bootcamp. To reach out to more students, these programmes generally have a class size of maximum 8 students, are available for subsidies through Bursary and are conducted at different DAS learning centres.

The Oral Exams STP is designed to prepare students for the two components of the PSLE English Oral Examination - Reading Aloud and Stimulus - based Conversation. It aims to equip students with the necessary skills and strategies that will enable them to read with good pronunciation, articulation and appropriate intonation to convey information in the reading passage. It also aims to provide students with exposure and practice in giving personal responses while engaging in a meaningful conversation based on a topic or visual stimulus given.

The Compre Cloze STP is designed to prepare P5 and P6 (Standard) students with skills and strategies for the Comprehension Cloze component of the PSLE English Paper. It aims to build their confidence in attempting cloze tasks by equipping them with skills and strategies through a sequential and cumulative approach. It also aims to provide students with exposure and practice to cloze passages that discuss different themes and topics.

The PSLE English Paper 2 Bootcamp is designed to equip Primary 6 students with specific skills to manage challenging components of the English Language Paper 2. These carefully selected components include Synthesis and Transformation, Editing and Open-ended Comprehension. It aims to boost student's confidence in coping with these components and enhance their readiness by teaching explicit strategies through a progressive and cumulative approach.

EVALUATION OF PROGRAMME FOR FY 2019-2020

In FY 19/20, we supported an average of 94 students per term. Of these, 21% comprised of Primary 3 and 4 (P3/4) students, 33% of them are Primary 5 (P5) students and the remaining 46% are Primary 6 (P6) students.

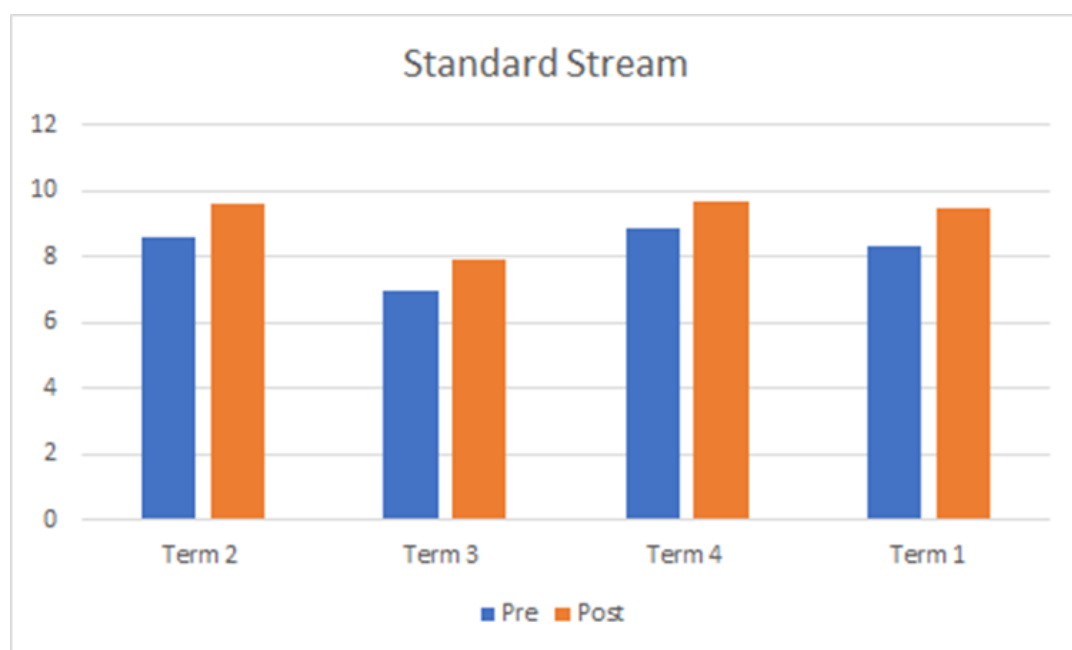
Our student enrolment peaked in Term 3, the majority of which consisted of P5 and P6 students in the Standard and Foundation streams. There are 44 P6 students who

	TERM 1	TERM 2	TERM 3	TERM 4
Total student enrolment	81	98	97	100
No. of P3/4 students	14	19	16	30
No. of P5 students	25	35	42	22
No. of P6 students	42	44	39	48

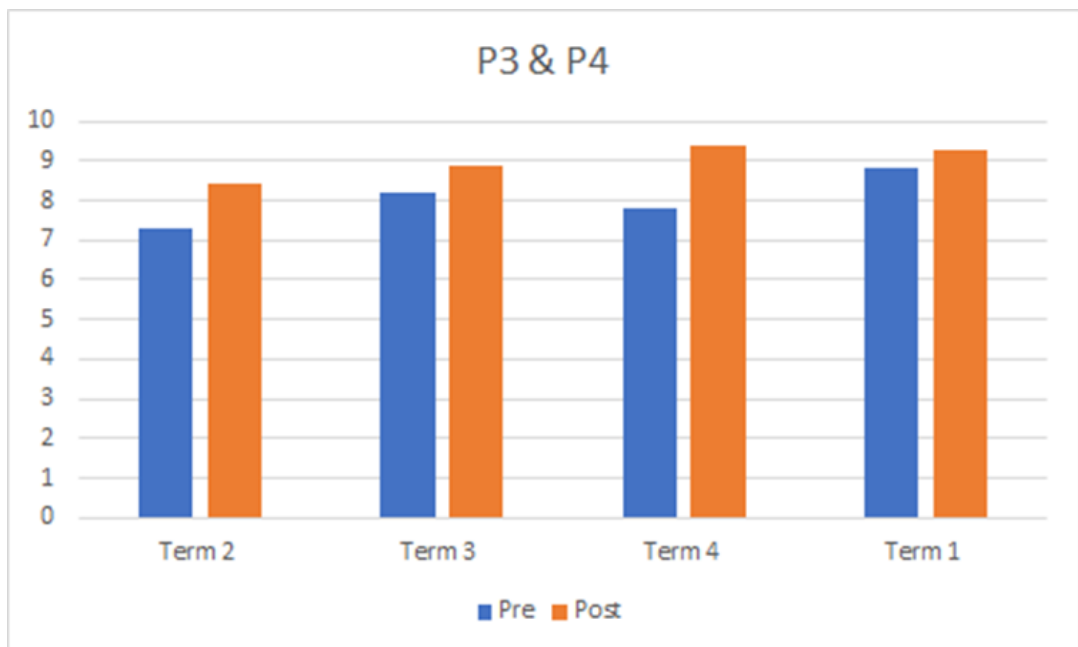
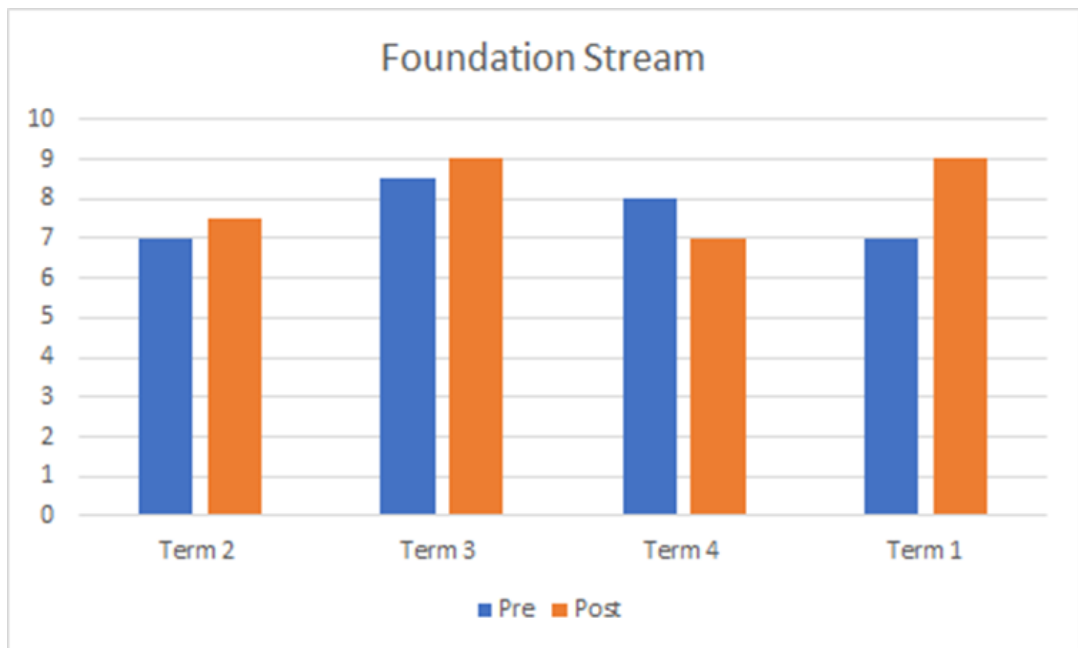
sat for their PSLE at the end of Term 3. Out of these students, 38 of them stayed on to continue with the Pre-Secondary Bridging Programme for an additional term. Student enrolment increased in Term 1 2020 despite the graduation of the 38 P6 students at the end of 2019. This can be attributed to the English Readiness Test conducted at the end of Term 4.

Termly Evaluation

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 at the beginning of 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 5 questions each of Grammar, Editing and Reading Comprehension topics and skills taught during the term. For the P5/6 Standard and Foundation students, the 15 questions comprised 5 questions each of Synthesis & Transformation, Editing and Reading Comprehension topics and skills taught during the term.



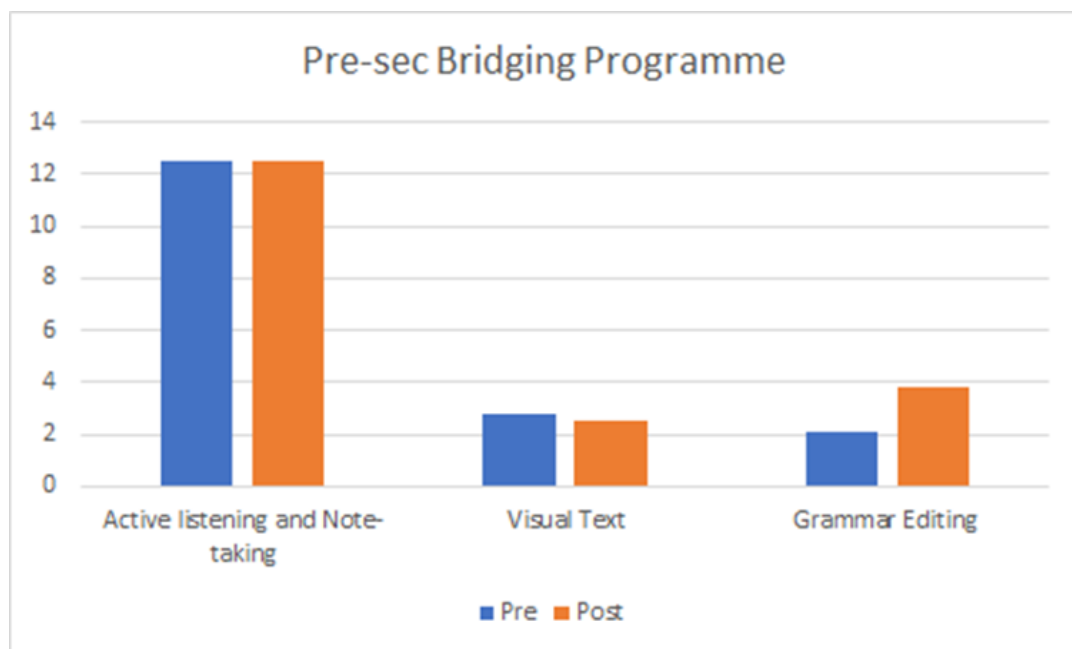
Results obtained on a termly basis demonstrated improvements in students' ability to retain and apply concepts taught throughout the term across most of the streams. The only exception was in the P5/6 Foundation students' performance in the Term 4



Post- Ipad test where a slight dip was recorded. It was noted that the dip was attributed to poorer performance in the Editing and Synthesis and Transformation components. A possible explanation for this was the lack of application observed in topics being taught during the term i.e. 'conditions'- (if/ if only/ unless/ in order to) for Synthesis and Transformation, and 'vowel teams' concept for Editing component. Students were observed to experience difficulties applying the concepts accurately in questions.

The Pre-secondary Bridging Programme, successfully launched in 2018, had its second run in Term 4 2019. Students who attended the Pre-secondary Bridging Programme sat for a written Pre- and Post- test 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 skill acquisition and application in the Grammar Editing component. There is a slight dip in the results for Visual Text Comprehension- the question types being tested in the Pre- and Post- tests mirror those in the Secondary English visual text comprehension, hence it was observed that students' written answers lacked accuracy and they needed more time and practice to be familiar with the application of knowledge for this component.



RESEARCH CONDUCTED

One of the limitations identified in earlier studies on the EESP was the duration within which students' progress was measured. Students' performance was evaluated on a termly basis comprising ten weeks per term. As the programme has a sizable number of students who enrolled in the programme at Primary Three, Four and Five and stayed on till they sat for their Primary School Leaving Examination (PSLE), it was important that the team investigates if a longer duration of intervention has any impact on their performance. In 2019, the team completed a study that monitored and examined the performance of 96 primary school students, between Primary 5 to 6 in the Standard stream who enrolled in the programme at different stages using paired samples t-test comparing Pre- and Post-test scores and a two-way ANOVA (Analysis of Variance) that compared the performance of 3 groups of students who had been in the programme for periods of 30 weeks, 20 weeks and 10 weeks based on their overall scores.

Before beginning their first lesson after enrolment, the students sat for a Written Entry Test designed by the curriculum developers of the EESP that aligned closely with the format and structure of the mainstream school English Exam and PSLE despite just covering the Synthesis & Transformation (ST), Editing (ED) and Reading Comprehension (RC) components. To ensure that this test was reliable and valid, it was subjected to a validation process adhering to McNamara's (2000) "testing cycle" of the design stage, the construction stage, the try-out stage, and the operational stage (Leong, 2019). Results indicated substantial correlations between test takers' performances on the test designed by EESP curriculum developers and their performances on a test conducted in mainstream primary schools, which firmly established its construct validity that could possibly predict EESP students' performance on their school and national examinations and gauge the effectiveness of its curriculum in supporting students with dyslexia in the primary schools' English examinations.

The first batch of 80 P5 and P6 Standard students sat for the Written Entry Test before the start of their first lesson at P5 in Term 1, followed by another batch of 8 new students each in Terms 2 and 3. At the end of Term 3, before the P6 students sat for their PSLE, all 96 students sat for the Written Exit Test after their 10th lesson.

The completed Written Entry Test and Written Exit Test scripts of the three groups of students were individually marked and their scores tabulated and analysed at the end of Term 3. Scores for each component and the types of errors made in each component were also analysed to study the students' ability to apply specific skills and strategies that have been taught in the programme as each component of the written test had a specific scoring criteria.

Results indicated that there was generally a significant difference between pre- and post-test scores of the students, with medium to large effect sizes observed in all three components of the tests. Significantly low p value (<0.001) reflected in the results of students who underwent intervention for a period of 30 weeks for all three components - ST, CP and ED, suggested that intervention was generally successful for everyone with improvements noted in the results of most students in all components. Students who underwent intervention in Term 1 (30 weeks) were observed to have made the most improvement, followed by those in Term 2 (20 weeks) and Term 3 (10 weeks). This suggests that a full impact of support for learners with dyslexia demands longer exposure to skills and concepts in order to consolidate their learning. The results also confirmed that students achieved better scores on their termly review tests when they are enrolled in the EESP over a period of 30 weeks.

Data findings from this study proved useful to advocate for early and prolonged intervention in supporting students with dyslexia, specifically in tackling English examination questions in order for them to better cope with academic demands of their school and national exams. Furthermore, students' performance in the individual components of the pre- and post- tests could be further analysed to identify areas where students may need additional support or changes in instruction that would benefit their learning.

It is then recommended that further studies on a larger scale involving more grade levels or a more even sample distribution could be done to validate the generalization of the present findings. In addition, progress monitoring could also be made more frequent with the inclusion of formative or multiple methods of assessment such as goal-setting activities, short quizzes, use of game quizzes, on top of summative assessments such as the Written Entry and Exit Tests. These could provide useful information for teachers to decide if it would be necessary to tweak the curriculum for students who may not demonstrate improved understanding or performance. A more ipsative approach of assessment involving a measurement of progress based on individual students' goal setting as a criterion, could also be a potentially worthwhile consideration.

QUALITY ASSURANCE

All teachers in the programme are equipped with the content knowledge and skills prior to conducting P2P classes. To ensure the consistency and quality in the delivery of the programme, all P2P 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 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 Educational Therapists (EdTs) are provided after the lesson observation, where EdTs are also engaged in reflecting on their own teaching experiences and practices. For the previous financial year 19/20, the team reports a 100% passing rate of the QAA video observations.

TEACHER TRAINING

Existing EdTs who have expressed interest to deliver P2P lessons as a dual specialisation must have at least a year 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 by the P2P team and the DAS Academy.

These newly recruited P2P teachers were provided with opportunities to understand the theoretical background, programme objectives, topics and key concepts in the P2P curriculum and to deliver lesson components as part of the training and assessment. In order to cater to the increased awareness and higher intake of students, efforts have been placed in planning to train a new batch of dual specialist Educational Therapists for FY 20/21.

In addition to the initial training, all P2P 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 4 INSETS were conducted in January, March, June and September, where teachers were encouraged to share their experiences and the challenges they faced in conducting P2P classes. Topics discussed include the facilitation of differentiation techniques for P2P classes, classroom management strategies and updates on resource development for components of the curriculum. The EdTs were also provided with training on new curriculum development and administrative matters.

P2P teachers who took on the role of teaching STPs in Oral English Exam Skills, Comprehension Cloze and PSLE English Paper 2 Bootcamp have received additional training from the respective curriculum developers. There were 2 P2P teachers who underwent training in order to deliver STPs in PSLE Bootcamp during the June Holidays. Another 2 teachers underwent a different training and conducted the Comprehension Cloze STP, one during the teaching term and one in the June holidays. 4 other P2P teachers were equipped with content and resources to conduct workshops in the December holidays.

NEW INITIATIVES TAKEN FOR 2019

Launch of PSLE English Paper 2 Boot Camp (10 – 14 June 2019)

A newly launched initiative in June 2020, the PSLE boot camp was offered as an intensive 10-hour short-term programme (STP) over five days of the June school holidays. It is designed to equip primary 6 students with knowledge and skills to tackle selected topics of the English paper 2 and to enhance their readiness for the year-end PSLE English paper. The PSLE boot camp was well-received, with both learning centres (Sengkang/ Tampines) offering this STP having a full sign-up of 8 students each. In a post-survey feedback by participants, students commented that they enjoyed having the online quizzes and manipulative resources specially crafted by the Prep 2 PSLE team. These resources were part of the take-home kit students received daily, to provide the support they need to remain engaged in learning even at home.





Prep 2 PSLE English Readiness Test (29 November 2019)

Prep 2 PSLE programme held its first ever mass assessment for primary 3 to 6 students with dyslexia, with a total of 47 students who sat for the test. The English readiness test identifies students' strengths and difficulties in coping with challenging components of the English Paper 2. While students were taking the 45-minutes test, parents attended a complimentary talk that provided an insight on tips and strategies that can help their child enjoy learning and be better equipped for Upper Primary English. After the test, all parents were engaged in a 1-1 consultation with our P2P educational therapists to discuss on their child's performance for the readiness test.





ENGAGEMENT AND AWARENESS

Parent Engagement

With a strong belief that parental involvement and engagement are crucial to a child's holistic development, the P2P team has developed a series of free Parent-Support Group (PSG) talks to provide parents with comprehensive and practical tips and strategies to support their child with components of the English Paper 2. To increase awareness and engagement, the number of talks had increased significantly compared to the previous year. There was also an increase in the number of educational therapists who were involved in these talks.

Grammar Getting it Right: SVA and Cloze the Deal were conducted at Tampines, Bishan Junction 8, Parkway Parade and Queenstown learning centres. These talks focused on equipping parents with tips and strategies in learning Subject-verb agreement (SVA) and basic steps on approaching comprehension cloze passages respectively.

In 2019, the team had developed a new talk: Gear up for Upper Primary, conducted in 2 parts. Gear up for Upper Primary talk was specifically designed for parents of primary 2 to 5 children. It aims to provide these parents with an overview of the upper primary English curriculum, highlight components that students may potentially

struggle in, deepen their understanding of skills required in specific components and to share some tips and strategies to help their child as they work towards PSLE. This talk was conducted at selected centres in each region, namely, Jurong Point, Seng Kang, Tampines and Chinatown Point.

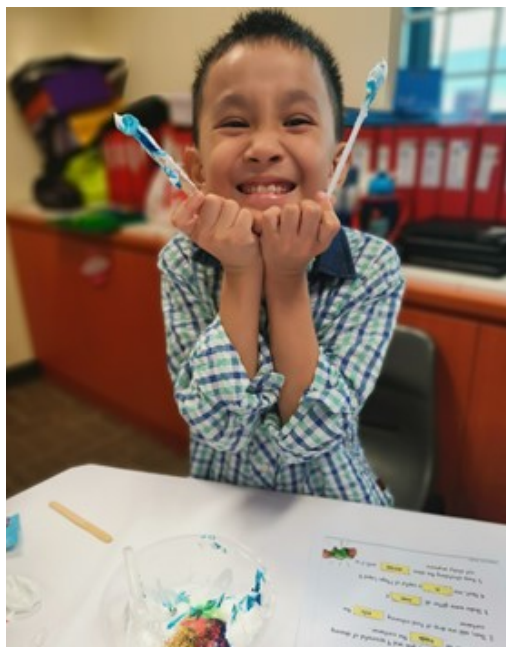
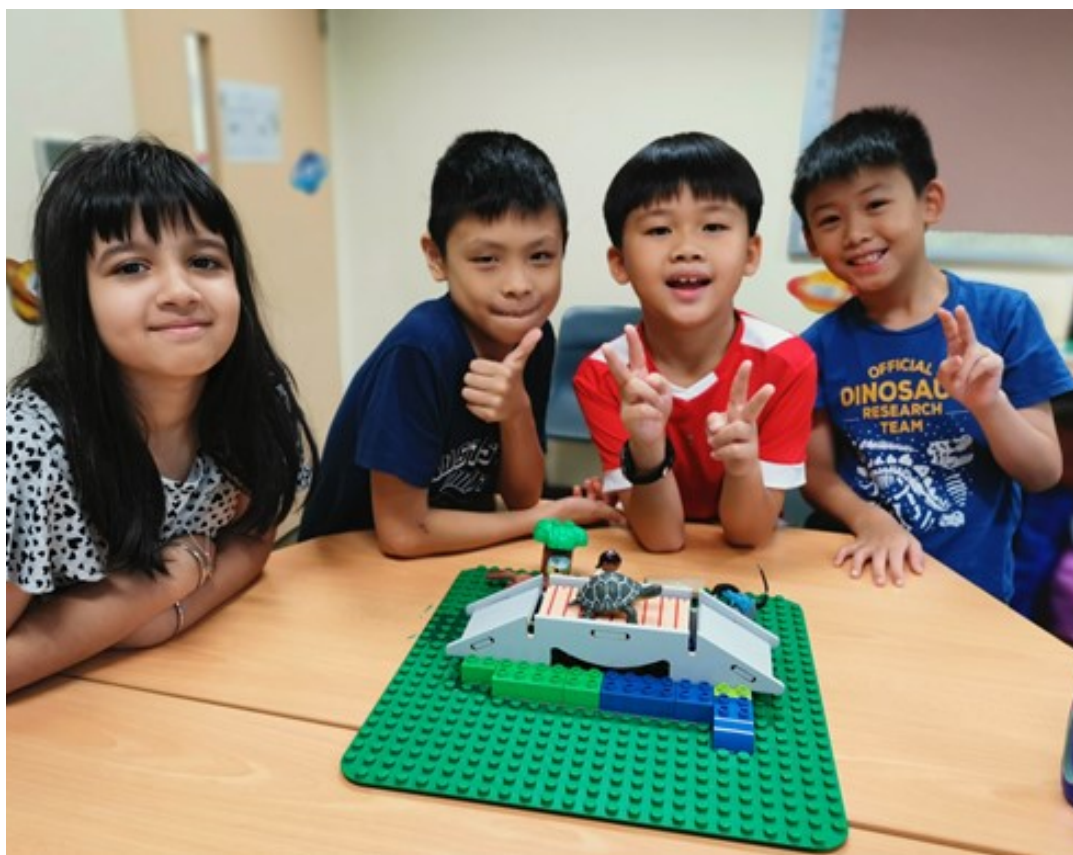
Gear up for Upper Primary talk (Part 2) consists of an enhancement of each component covered by the P2P programme. This talk was held in conjunction with the Readiness Test, which was a DAS-wide event in which primary students with Dyslexia sit for a carefully designed assessment with the aim of identifying the child's specific areas of strength and weakness. Catering to the individual needs of each student, this assessment was followed by a complimentary one-to-one consultation with an Educational Therapist to discuss the performance of the child.

Student Engagement

Held on 11 September last year, 'Master Common Prepositions with Professor Gool!' was a holiday workshop catered to our Primary 2 and 3 students. Through a series of highly multi-sensory activities, students learnt how to use common prepositions such as 'over' and 'across'. They were also introduced to prepositions that are almost similar, yet have intricate differences between them, such as 'in', 'into' and 'inside'.

To demonstrate their understanding, students were given sensory bins with a story containing the taught prepositions. The sensory bins contained all sorts of manipulatives such as Lego bricks and animal figurines. While the story is being read out, they had to place and move these manipulatives based on their knowledge of the prepositions. All these led to the much-awaited slime-making activity. Prepositions have been weaved into the slime recipe. Reading the steps, they made their very own tub of slime that they proudly brought home to show to their family.





SUCCESS STORIES



Zheng Yang, 10 years old

Zheng Yang has been in the Prep2PREP program for about a year. When he first joined our programme, he used to rush through his work when answering practice questions. He also needed a lot of guidance in understanding the demands of the questions. During the course of the year, he has learned editing skills such as using the 'drop-e rule' to edit the words, grammar rules such as 'countable and uncountable nouns' and comprehension skills such as question annotation using the 'CUBH' method. Now, he is more confident and consciously uses the skills, knowledge and strategies that he has learnt to complete his worksheets. Zheng Yang has always been an enthusiastic learner and it has been a joy teaching him.

Camllia Churemi
Senior Educational Therapist
Woodlands Learning Centre





Sim Yu De, Primary 6 Foundation

Yu De is very weak in his literacy skills and needs help to read instructions and texts. However, he is very determined and takes initiative in his own learning. Despite struggling to answer questions independently, he tries to apply the skills and strategies taught in the P2P classroom. With constant practice and persistence, he has managed to answer questions more accurately.

For example, for the comprehension component, he is now able to effectively annotate the text, make guesses from drawing contextual clues and is able to identify the correct answer in the text. I am certain, with continued guidance and consistent practice, he will be able to tackle examination questions independently.



Siti Halimah
Educational Therapist
Bedok Learning Centre

TESTIMONIALS

DAS Prep2PSLE Programme

My girl was diagnosed with dyslexic when she was in Primary 4. We thought that she was slow in learning until my sister noticed it as her daughter also has dyslexic. As parents, we tried to deny the fact. When she turned Primary 3, we started to notice that it was affecting her and causing her to struggle in her academics. I went to Bedok Branch to find out more about the course and managed to get her enrolled, where she attended MLP and P2P with Miss Halimah.

We can see a great improvement in her as she started off with difficulty in getting the right spelling and understanding the passage. After attending the class by Miss Halimah, her spelling and understanding of the passage has significantly improved. Her school teacher has also complimented the improvement in her English. I am very grateful to DAS (Bedok Branch) and Miss Halimah for their patience and encouragement that they have showered to my girl.

*Mdm Low—Mother of Ong Rei Yin (Primary 6)
Bedok Learning Centre*

Dear Ms Farah,

The programme definitely benefit my son, Shao Heng because we can see improvement in his English over the years. Due to his slow learning pace, easily distracted and forgetful, he really needs constant practice and revision that we will try to help him at our end. As Shao Heng's emotion is easily triggered, I would like to thank you for your patient and understanding when coaching him. I'm glad that he does not give you much of a problem and also most importantly, he does not not feel fearful/stressful attending your lessons.

It is not easy for us to get the right teacher for him. He is blessed to be your student. You are good!

*Parent of Choo Shao Heng (Primary 6)
Bishan Learning Centre*

The Prep 2 PSLE Programme has been beneficial for Evanny. She has challenges and barely passed in Comprehension and Synthesis and Transformation. Most of the time, she does not even attempt to complete the questions. In the programme, she is taught the skills and techniques to handle the different components. She applies what she has learnt in her school work and we have seen significant improvements in these areas, sometimes even getting almost full marks. This boosts her confidence and spurs her to thrive better in her work. The guidance and patience from Ms Siti for the past 2 years has also encouraged her to do even better in English.

Mrs Audrey Tan
Mother of Evanny Tan (Primary 6)
Tampines Learning Centre

P2P has helped my daughter to become more confident in tackling exam questions. The strategies like CUB-Hi, Annotation helped her focus on the important parts of the text. While she needs more practice in Synthesis and Transformation, the lessons have helped her break down some confusing concepts such that I am able to revise with her at home.

Mr Alvin Ong—Father of Jaslyn (Primary 5) & Felicia (Primary 6)
Bishan Learning Centre

ABOUT THE AUTHORS



TUTY ELFIRA RAZAK

Programme Manager for PREP 2 PSLE and Lead Educational Therapist

Tuty has been with the DAS since 2010. She provides intervention for learners with dyslexia on the Prep 2 PSLE (Preparation for English Paper 2 PSLE) and Main Literacy programmes. In addition, she oversees the development of curriculum and resources for Prep 2 PSLE, training of its teachers and evaluation of their classroom practices. She also conducts talks organised by the DAS Parents' Support Group (PSG) to offer parents practical tips and strategies to help their child overcome their learning difficulties. Tuty has a Masters of Arts in Special Educational Needs (SEN) from the University of South Wales. Her previous research explored the use of picture books to improve the vocabulary and comprehension skills of learners with dyslexia. Her research interests include 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 English Exam Skills Programme (EESP) 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 her Master of Education in Curriculum & Teaching at NIE-NTU in 2020. Together with her colleagues in the EESP, 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.



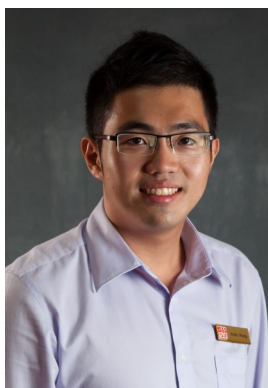
JOANNE TAN SHI HUEY

Senior Educational Therapist

Joanne joined DAS in 2013. She provides intervention for students struggling with dyslexia. On top of the Main literacy programme, Joanne is also part of the PREP 2 PSLE team, that creates resources, curriculum and conduct classes targeting on examinable components of the PSLE paper.

WANG DINGXIONG ANDY

Lead Educational Therapist



Andy has been with the DAS since 2012, providing intervention for learners with dyslexia on the Prep 2 PSLE (Preparation for English Paper 2 PSLE) and Main Literacy Programme (MLP). As a core team member of PREP 2 PSLE, Andy actively contributes to the curriculum expansion of the programme, conducts training for its teachers and provides evaluation to support their classroom practices. In addition, 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, government agencies and the general public. His postgraduate academic achievements include a Master of Education (Special Education) with the National Institute of Education, Singapore, and a Postgraduate Certificate in Specific Learning Differences with the University of South Wales. He is a member with the Register of Educational Therapists (Asia) and has represented the PREP 2 PSLE programme at conference presentations and workshops.

Specialised Educational Services
UNLOCKING POTENTIAL

PREP 2 PSLE

PREPARATION FOR ENGLISH PAPER 2 PSLE

PSLE

PRE-SECONDARY PROGRAMME

ACTIVE LISTENING AND NOTE-TAKING

SYNTHESIS AND TRANSFORMATION

VISUAL TEXT COMPREHENSION

DESIGNED TO HELP OUR STUDENTS WITH ENGLISH PAPER 2

READING COMPREHENSION

GRAMMAR

EDITING

PRIMARY 5 AND 6

STANDARD FOUNDATION

PRIMARY 3 AND 4

BUILDING CONFIDENCE HEADSTART!

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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, Shakthi Sathiasilan² and Raihana Binte Mohamed Hashim³

1. *Preschool Programme Manager and Senior Educational Therapist*
2. *Senior Educational Therapist*
3. *Educational Therapist*

Dyslexia Association of Singapore

INTRODUCTION

The Preschool Early Literacy Programme (PELP) was started in 2006 for Kindergarten 1 and 2 pre-schoolers who show dyslexic type tendencies, or developmental delay in early literacy skills. The aim of the programme is to help preschoolers develop skills and strategies to become confident learners and access learning when they enter primary school.

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 are guided by Orton-Gillingham principles, along with early childhood pedagogies and is guided by MOE's Nurturing Early Learners (NEL) Language and Literacy Framework. The lessons are individualised and cater to a child's learning progress. Opportunities are created within the classroom for preschoolers to experience success.

PROGRAMME DESCRIPTION

Entry Criteria

Preschoolers in Kindergarten One and Two who are attending childcare or kindergarten, with dyslexia type tendencies and/or early literacy difficulties.

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
- ◆ early 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.

EVALUATION OF PROGRAMME FOR 2019

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 223 students (144 males and 79 females), primarily made up of 40 Kindergarten One students, 169 Kindergarten Two students and 14 Kindergarten Two Repeat Students. Students attended an average of 53.3 (sd = 24.36) 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, cvcc, ccvcc to cccvcc (v=vowel, c=consonant)) and sentence copying.

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 drawn up. 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 in Table 1.

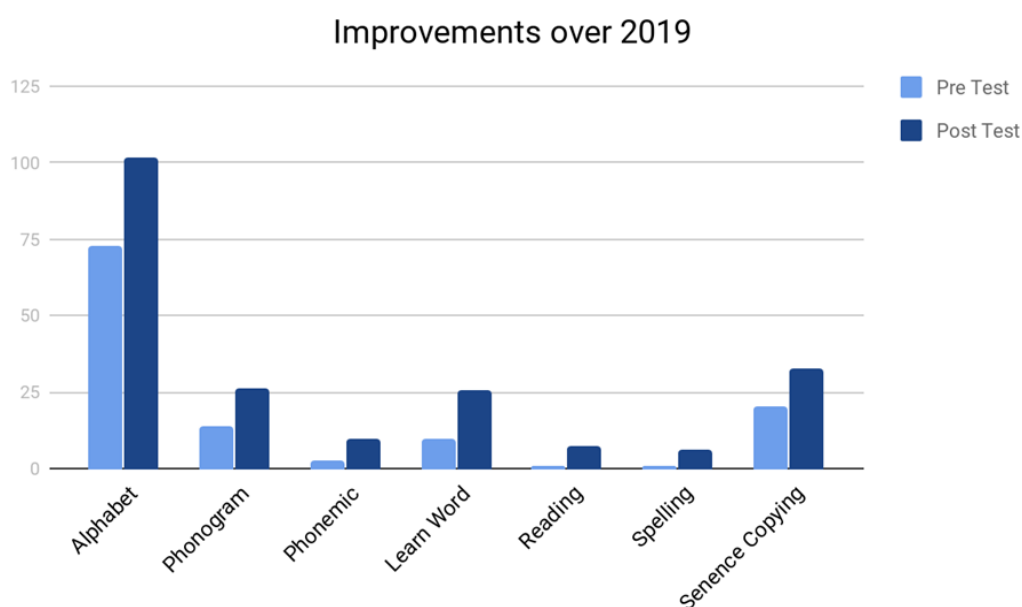


Chart 1. Comparison of literacy improvements at pre and post-test across seven areas: alphabet knowledge, phonogram knowledge, phonemic awareness, learnt word knowledge, reading ability, spelling ability and sentence copying.

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

Group	N	MEAN	SD	T	DF	P
Alphabet Knowledge Pretest	223	73.00	33.13	-16.48	222	0.000
Alphabet Knowledge Post test	223	101.78	21.48			
Phonogram Knowledge Pretest	223	14.10	9.27	-23.39	222	0.000
Phonogram Knowledge Post test	223	26.04	7.58			
Phonemic Awareness Pretest	210	2.77	5.21	-14.20	209	0.000
Phonemic Awareness Post test	210	9.78	8.00			
Learnt Word Knowledge Pretest	223	10.04	13.12	-17.95	222	0.000
Learnt Word Knowledge Post test	223	25.43	17.06			
Reading Ability Pretest	223	1.09	2.41	-18.13	222	0.000
Reading Ability Post test	223	7.31	5.92			
Spelling Ability Pretest	223	0.87	1.75	-4.51	222	0.000
Spelling Ability Post test	223	5.96	4.97			
Sentence Copying Pretest	218	20.51	15.23	-14.86	217	0.000
Sentence Copying Post test	218	32.71	12.25			

**Discrepancy in N due to incomplete data*

Conclusion

Based on outcomes derived from the above results, the DAS Preschool phonics based intervention approach has been effective in helping kindergarten age students improve in their early literacy outcomes despite having specific learning difficulties. Children showed significant improvements across all six literacy components. More promisingly large effect sizes were noted in all tested skills indicating that the intervention programme had a great impact.

ADDITIONAL RESEARCH

Effectiveness of Incorporating a Structured E-Books Programme to Improve Outcomes for Early Struggling Readers

Using a mixed study design of both qualitative and quantitative data analysis, the study looked at educational therapists' implementation of shared e-book sessions, projecting e-books onto a screen to extend the shared reading experience, and the impact this had on struggling readers' early literacy skills and comprehension. Participants included a diverse sample of 20 children and 5 Educational Therapists (EdTs). Following a brief training session to ensure consistency of approach across the sample, teachers conducted 10 e-book shared reading sessions, over a 10-week period. A pre and post informal curriculum-based measure was used and compared with a control group to assess learning. Results suggest that the use of Raz-Kids e-books had helped in improving pupils' comprehension skills and complemented teaching, learning and reading engagement. It concluded that there is similar effect from shared reading using print books to shared reading using e-books, and that both support children's learning of discrete literacy skills, and that it is beneficial to expose children to both types of books. Literature generally points out that struggling readers experience reduced motivation to read. E-books would therefore add to the importance of engaging such readers and increasing their interest in reading. This research did not show unilaterally that the gains from the e-books programme was above that from the use of printed books but it concluded that a good shared book reading programme would best incorporate both types of books.

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. Parents and Educational Therapists also complete yearly feedback forms to highlight ways upon which the programme can be improved.

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.

CURRICULUM TRAINING	Educational Technology Learning
	Language development and Handwriting Course Inset Sharing
PROCESSES AND PROCEDURES	School Age Assessment
	Updated Quality Assurance Audit
	IR Pathway Inset by SPD Hani
	Progress Report Writing
PEER TO PEER LEARNING	Preschool Seminar and Preschool Team insets

NEW INITIATIVES TAKEN FOR 2019

Initiative 1: Donor Support

The preschool Programme needed donor support in 2019 since its previous donors have moved on to support tertiary education. DAS fundraising colleagues Surjati and Khatijah were vital in the preschool programme receiving donor support from the Ishk Tolaram Foundation. The preschool core team presented to the Ishk Tolaram Foundation representatives and this further contributed to successfully bringing on board a donor grant of \$200 000, which will be critical in helping pupils from low-income families attending the preschool programme.

Initiative 2 : 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.

Initiative 3: Phase 1 enhancement to the IR system

A focus group with the preschool teachers was carried out to listen to teachers' perceptions and challenges in the preschool classroom. The challenges identified by the teachers were categorised into 3 broad categories and they were behavioural, developmental and cognitive. The teachers' feedback was recorded, and the core team went through these classroom challenges, as well as management strategies and in addition identified areas for teacher training. A student observation checklist has been developed and has been emailed to selected teachers, and will be piloted in the classroom for students in 2020. The purpose of this checklist is for ease of communication between DAS Colleagues, and will complement close and accurate identification and monitoring for pupils who need more support in the classroom.

Initiative 4: Curriculum Development, Letter Formation Curriculum Pack

The letter formation pack aims to support reluctant writers, and pupils who are struggling to remember letter strokes and facing challenges in writing, for a number of children the very act of writing is laborious and this includes colouring. In order to further support this group of pupils, the preschool contributing members from the teaching support team, worked on a yearlong project in the development of the letter formation curriculum pack. It helps preschoolers, develop fine motor skills, learn how to write and remember how to write.

It consists of:

- ◆ Uppercase letter craft activity
- ◆ Lowercase letter craft activity
- ◆ Alliteration Writing (i.e. Big Bouncing Ball)
- ◆ Picture Grid Template (i.e. Letter b: pic of balls)
- ◆ Further Additions included suggestions for ideas for concrete materials to be used for craft, eg. Letter b: may use buttons, beads)

Initiative 5: Recruitment of Educational Therapists in the Flexi Work Scheme

Recruitment for Educational Therapists in the Flexi Work Scheme were initiated twice in the year. Several preview sessions and interviews were also conducted. With best efforts, two new flexi-edts Jacklyn and Janice were hired and ready for deployment in 2020.

ENGAGEMENT AND AWARENESS

1. Seminars and Conferences

Pre-School Seminar 2020 Online

The eighth edition of the Dyslexia Association of Singapore (DAS) Pre-school Seminar is a purposeful blend of deep exploration of topics emphasising the importance of early intervention and workshops imparting practical tips to help preschool learners achieve. For the first time, DAS delivered the seminar online to ensure the safety of participants in light of COVID-19. Despite its online format, sign-ups for the online seminar came through reasonably well. This attests to the notion that the preschool seminar has built captivated participants over the years.

DAS will have welcomed 206 participants to its first online Preschool Seminar on Tuesday, 17 March 2020. The 206 participants consisted of 130 offline registrations, 44 online registrations bringing total paid participants to 174. The remaining participants consisted of 13 bursary parents who were sponsored by a donor to attend the seminar and 19 invited guests. The online format has broadened the reach of the event beyond Singapore, providing opportunities for overseas participants to attend the seminar without incurring travel costs. It also allowed busy mothers and educators to access its rich content line-up from the comfort of their homes and own time.

In addition, the pre-school seminar 2020 was included in the Continuing Professional Development (CPD) Prospectus 2020 which is spearheaded by ECDA, this meant that all early childhood educators in Singapore could officially claim CPD hours for attending the DAS preschool seminar.

Early Childhood Development Agency (ECDA) Conference 2019

ECDA Early Childhood Conference and Exhibition were held on 13 Sep (Fri) and 14 Sep (Sat) 2019, at Suntec Singapore Convention Exhibition Centre. DAS Pre-school Educational Therapist Vera and Nadia presented a workshop about the different branches of phonological awareness strategies to enhance essential skills which are precursors to advanced literacy skills. Phonological awareness is a predictor of early literacy and children can learn to be sensitive to language sounds through play.

UNITE SpLD Conference 2019

This conference showcased research that covered aspects of behavioural, literacy and social-emotional support, intervention and assessment for children with special

learning needs. The pre-school team presented in this conference on supporting comprehension skills. The workshop provided examples with resources on how to incorporate and to build comprehension skills into daily conversations, structured verbal communication, story-telling and reading activities based on different levels of abilities.

2. 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 are offered at their school during curriculum time.

- ◆ **In-School Screening for School Based Remediation (SBR):**
 - ◇ PCF GML from Block 24 and 29, screened 18 Pupils in total - since this screening was conducted at the end of the year N2 Pupils were also screened. Additional Screening efforts by Preschool EdT covered 10 more pupils from GML.
 - ◇ PCF ADL - screened 38 pupils
 - ◇ PCF FSH - screened 3 pupils
- ◆ **On-Site Screening for Targeted Franchise Pre-schools**
 - ◇ - Ilham Childcare - 8 Pupils Screened
 - ◇ - NurtureStars at Mt. Faber - 29 Pupils Screened
- ◆ **Public Screening at Learning Centre**
 - ◇ PWP - 5th Jan 2019, 10 Screened
 - ◇ Bishan - 18th March 2019, 47 Screened
 - ◇ JPT - 3rd June 2019, 51 Screened
 - ◇ Tampines - 28th Nov 2019, 39 Screened
- ◆ **Ad-Hoc Screening** - a total of 111 pupils were screened, the pupils were directed to us from calls to the DAS customer service, walk-in and/or from those who have registered for the programme online.
- ◆ **Screening for MLP pupils' siblings who are at risk of dyslexia**, were sent a flyer to encourage them to come in early for intervention. We managed to screen a nominal number of pupils during this initiative.

3. Awareness and Learning Journeys

The pre-school team conducted a total of 42 awareness talks for kindergartens and childcare centres across the island in 2019. The awareness talks were targeted at 80% parents and 20% teachers in a strategic attempt to boost student enrolment numbers. The pre-school team also hosted 4 learning journeys for NIEC - SEED Institute for their trainee preschool teachers to find out more about DAS preschoolers with early literacy difficulties, and our pre-school Programme.

◆ Awareness Talks

- ◇ 42 Talks to Pre-schools in Singapore
- ◇ 3 Talks to SBR PCF Pre-schools (PCF GML, PCF ADM and PCF FSH)
- ◇ 2 Talks to Targeted Pre-schools (Ilham Childcare and NurtureStars Private Franchise Pre-schools)

◆ Splash Events - Awareness Talk

- ◇ Nee Soon Cluster PCF (200 Parents)
- ◇ Nee Soon Cluster PCF (300 Teachers)

◆ Learning Journeys

- A total of 4 learning journeys were hosted for trainee teachers
- ◇ 10th April 2019 - DAS Bishan Learning Centre for National Institute of Early Childhood Education (NIEC) - SEED
- ◇ 29th May 2019 - DAS Bishan Learning Centre - NIEC-SEED
- ◇ 31st October 2019 - DAS Bishan Learning Centre - NIEC-SEED
- ◇ 27th September 2019 - Advent Links-SAUC Education

◆ Public Events

- ◇ Pre-school team complemented the walkabout by sharing programme manipulatives and resources, and engaged in a short conversation with Southeast Asian Ministers of Education Organisation (SEAMEO).
- ◇ The DAS in collaboration with United Overseas Bank (UOB) extended awareness about dyslexia and other specific learning differences through a public exhibition. It was held from 9am to 5pm at the UOB Plaza Atrium at Raffles Place, and was part of the World Dyslexia Awareness Week (WDAW). The pre-school team participated in this event, through a display booth with programme manipulatives and resources, and engaged the public with interactive activities and conversation about the programme.

- ◇ From 3 to 16 Feb 2020, the Chinese team hosted two visitors from the National Taiwan Normal University on behalf of the organisation. During the two weeks, the visitors observed lessons across different programmes and were provided an overview of the various SES programmes. The pre-school team supported in sharing about the programme, and facilitating classroom observations for the visitors. The visitors also conducted a sharing session with DAS staff, sharing with us about the special education system in Taiwan and their research work.

4. Parent Engagement

Parent Support Group Workshop was conducted for the DAS Parents of preschool aged children. The talk was on strategies on complementing comprehension skills in the home environment. The workshop focused on the different methods to build a variety of literal and evaluative comprehension skills that allows children to learn better. It provided examples with resources on how to incorporate and to build comprehension skills into daily conversations, structured verbal communication, storytelling and reading activities based on different levels of abilities.

5. Collaboration

Engagement with KK Women's and Childrens Hospital (KKH) - Pre-school Team and DAS Psychologists presented to KK Women's and Children's Hospital (KKH) on 10 Oct 2019, the DAS Psychologist presented about DAS assessment services and the main literacy programme (MLP), and DAS Pre-school Team presented about the Preschool Early Literacy Programme (PELP). KKH represented about 38.9% pupil references to the PELP Programme in 2019. Further to this, the preschool team collaborated with Dr. Sylvia Choo, a paediatrician who agreed to be a keynote presenter for the preschool seminar 2020.

Engagement with Playeum - Dr. Esther Joosa. Consultant Director of Pedagogy for Playeum the children's museum. She designed the standards for the arts in special education in Singapore. Dr. Esther was a workshop presenter for the pre-school seminar 2020. Her workshop addressed the role and opportunity of creativity in the lives of children with dyslexia and nurturing of 21st-century skills.

FEEDBACK AND TESTIMONIALS

Parent Feedback 2019



Source: 2019's Annual Feedback Forms



SUCCESS STORIES

Account by Preschool Educational Therapist - Raihana Hashim from Bedok Learning Centre

Tessa joined the DAS Pre-school Intervention Program in August 2018. She started with some basic Alphabet Knowledge. She exhibited consistent confusion in vowel sounds and had rather weak fine motor skills. She was unable to blend more than two letter words or spell. Other challenges observed included comprehension skills, maintaining attention & confidence in literacy related activities.

Despite her challenges, Tessa was often keen to learn, persevered and attempted her best in class. In the comfort of her peers whom she bonded with and multi-sensory literacy activities tailored to her developmental needs, Tessa gradually blossomed. She showed vivid improvement throughout the 14 months in DAS Preschool Program.

At the end of the program, she was developing in reading and spelling four to five letter CVCC/CVCC words and CVCCC words. Her fine motor skills have improved evident from her handwriting. She was also observed to be more confident, participative and responsive during comprehension questions after story session in class.

Tessa's mom acknowledged that Tessa enjoyed attending classes at DAS and is happy that Tessa has come a long way!

Tessa's Pre Test

Words to Spell

1) o ? ? ? ? ?

2) f ? ? ? ? ?

3) m ? ? ? ? ?

4) ? ? ? ? ?

5) ? ? ? ? ?

6) ? ? ? ? ?

7) ? ? ? ? ?

8) ? ? ? ? ?

9) ? ? ? ? ?

10) ? ? ? ? ?

Tessa's Post Test

Words to spell

1) ug 11) fild

2) id 12) rup

3) ai 13) shania

4) vap 14) choisk

5) ni + 15) thup

6) ium 16) ?

7) blium 17) ?

8) grat 18) ?

9) +sin 19) ?

10) hlo + 20) ?

11) fild

12) rup

13) shania

14) choisk

15) thup

16) ?

17) ?

18) ?

19) ?

20) ?

Note: Words given during these spelling tasks were not real words but decodable nonsense words so as to identify accuracy in child's letter sound knowledge and phonological awareness.

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 a 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 carries out training for pre-school trainee teachers. She also teaches and finds working with preschoolers, especially those who need additional support meaningful.



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.



RAIHANA BINTE MOHAMED HASHIM

Educational Therapist

Raihana is a preschool educational therapist at Dyslexia Association of Singapore. She graduated with a Diploma in Child Psychology and Early Education from Ngee Ann Polytechnic and is currently pursuing a degree in early childhood education at Singapore University of Social Sciences (SUSS). A passionate early childhood educator, Raihana strives to nurture children's confidence and esteem through fun, meaningful and developmentally appropriate learning experiences.



PRESCHOOL EARLY LITERACY INTERVENTION

**Specialised
Educational
Services**
UNLOCKING POTENTIAL

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

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 EIPIIC 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.sg

Specialised Educational Services

UNLOCKING POTENTIAL

SPEECH AND DRAMA ARTS

The aim of the programme is to provide children with dyslexia a safe platform where they learn to be effective and confident communicators through fun drama activities. Apart from drama skills and language skills, our structured curricula foster social-emotional development and confidence-building in our students.

OUR APPROACH

The SES Speech and Drama Arts programme helps students enhance their persuasiveness and confidence in communication. In class, students are given the freedom to express themselves freely, using their imagination and creativity. Other vital soft skills that are fostered in the classroom include listening, concentration, teamwork and creative problem solving.

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

- ◆ Creative Drama (Kindergarten 2 -Primary 3)
- ◆ Literacy through Drama (Primary 4 - 6)
- ◆ Educational Drama (Secondary 1 - 2)

The programme also offers our students the opportunities to experience the process of planning and preparing for classroom showcases and performances in DAS events. Families will be invited to catch their children perform live in the class showcases or at external venues.

DAS Specialised Educational Services

Speech and Drama Arts

Muzdalifah Hamzah^{1&2} and Amrit Kaur Gill³

1. *Speech and Drama Arts Programme Manager*
2. *Lead Educational Therapist and Drama Instructor*
3. *Senior Educational Therapist and Drama Instructor*

Dyslexia Association of Singapore

INTRODUCTION

The Speech and Drama Arts programme was started in 2013 for primary school students who attended DAS classes. Since then, the programme has evolved into three curricula to cater to the different age groups. Over the years, the team has been evaluating and fine-tuning our curricula to ensure that they are suitable for our learners. The programme focuses on these main goals – developing drama and acting skills, language skills, enhancing the social-emotional development and critical thinking skills of the students.

PROGRAMME DESCRIPTION

Understanding the background and characteristics of our dyslexic students has allowed the team to develop three curricula 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 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 (Norris, 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 the 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 the 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, reconsider 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 three curricula catering to the different age groups:

- ◆ Creative Drama (Kindergarten 2 –Primary 3)
- ◆ Literacy through Drama (Primary 4 – 6)
- ◆ Educational Drama (Secondary 1 – 2)

Entry Criteria

Students who are in Kindergarten 2, primary school and lower secondary school students are welcome to enrol. The programme is open to both DAS students and non-DAS students.

No formal diagnosis of dyslexia is required.

Who The Programme Is For

The Speech and Drama Arts Programme is recommended for students who want to explore the learning of the English language through fun drama activities, aspire to be confident communicators, want to experience the thrill and excitement of performing to live audience.

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 in our lessons to ensure quality and effectiveness.

Orton-Gillingham Approach:

- ◆ **Language-based** – Exposure to different texts to enhance students' appreciation of English language through Drama.
- ◆ **Cognitive** – the activities are crafted to engage their cognition e.g. creative story writing, role-play, improvisation, memorising scripts, rehearsing and performing with movements and cues.
- ◆ **Structured, Sequential and Cumulative** – includes direct and explicit instructions and each activity has a different range of difficulty level.
- ◆ **Simultaneous multi-sensory** - engage through stage and hand props, presentation of skills through multiple senses.
- ◆ **Diagnostic-prescriptive** – Drama Instructors regularly assess students' abilities and adapt activities according to the class dynamics and students' profiles.
- ◆ **Emotionally sound** – Drama Instructors are trained in the Special Educational Needs (SEN), hence they have a better understanding of the students' needs and strengths.

EVALUATION OF PROGRAMME

Student Number

Table 1 shows the breakdown of student enrolment in FY 19/20. On average, 37.5% of our students require bursary in order to access the programme. This is an increase of 2.5% when compared to the last financial year's percentage.

Table 1: Student Enrolment in FY 19/20

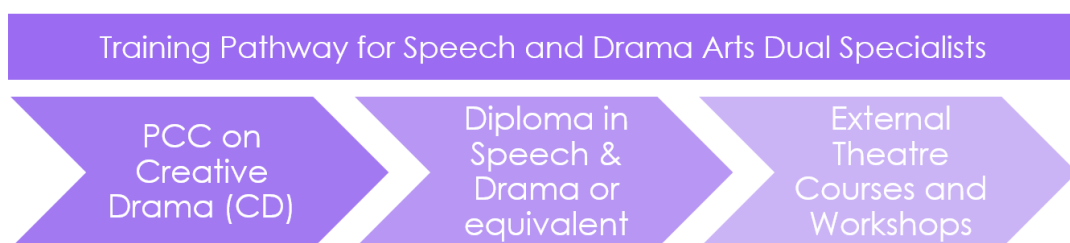
	TERM 2, 2019	TERM 3, 2019	TERM 4, 2019	TERM 1, 2020
Enrolment	33	35	36	37
Actual No. of students on Bursary	13	12	15	13
% of students on Bursary	39%	34%	42%	35%

QUALITY ASSURANCE FOR SPEECH AND DRAMA ARTS PROGRAMME

All Speech and Drama Arts educational therapists are evaluated on their lesson planning, lesson execution and class management through class observations. The Quality Assurance Audit (QAA) class observations are conducted once every financial year. The annual QAA is conducted by the Programme Manager through in-class or video observations of lessons.

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 21 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).



NEW INITIATIVES TAKEN FOR FY19/20

Children with dyslexia have been observed to exhibit behavioural, social and emotional difficulties. With the hope of tackling these challenges, the Speech and Drama Arts programme has implemented the explicit teaching of Social Emotional Learning (SEL) concepts in our Creative Drama classrooms. These skills are particularly important for young children as they have to manoeuvre through various social contexts in school.

In our drama class, students explore making and maintaining friendships, expressing appropriate behaviours and managing negative emotions. All this is done through the exploration of stories, character analysis and role-play.

ENGAGEMENT AND AWARENESS

1. School Projects

In FY 19/20, we had the opportunities to conduct workshops outside of DAS. During the first semester, the SDA team was a part of a multidisciplinary team to serve Assumption Pathway School Year 1 cohort in English Specialised Enrichment Programme. This 15-week programme was held from 15 January to 30 May 2019, with an estimated of 100 students. The SDA team collaborated, contributed and conducted this workshop with other DAS colleagues.

In addition to the above, we had conducted a post-examination drama workshop for a selected group of Secondary 1 students from CHIJ St. Theresa's Convent in Term 4 (2019). It's our third year providing such workshop to the students in the school. This workshop provided the students a head start in exploring their literature text, *The Boy in the Striped Pyjamas* by John Boyne through drama games and activities. The workshop was designed to build their confidence, develop literacy, comprehension, communication and presentation skills.

2. Journey from Preschool to MLP – Parent Talk at Bedok Learning Centre

On 7 Sept 2019, a talk was held for the Preschool Parents at Bedok Learning Centre. Preschool parents were given an insight on what went on in a preschool classroom followed by an introduction of the Main Literacy Programme (MLP). The Speech and Drama Arts (SDA) Programme was also introduced to the parents. Parents learned about the benefits of speech and drama and how SDA can help their child. Parents left with new knowledge and learned that there was a lot more to drama than just games.

3. SDA Performance in UNITE SpLD Conference 2019

On 28 June 2019, 12 students from both Bishan Learning Centre and Bedok Learning Centre performed for both local and international guests at the UNITE SpLD Conference at Lifelong Institute of Singapore. Both groups of children aged between 6- 9 years performed two different plays based on Aesop's Fables. 7 students from Bedok Learning Centre performed a play titled "Grasshopper & The Ants" and 5 students from Bishan Learning Centre delighted the audience with their rendition of the "Tortoise and the Hare". The students amazed the audience with their marvellous acting skills and articulation.



4. SDA Performance in DAS Student Graduation

The Speech and Drama Arts (SDA) programme did it again by presenting a remarkable year-end performance for DAS Student Graduation. On 26 November 2019, 11 SDA students from Bishan Learning Centre graced the stage of SUTD. Many of the students have been in the SDA programme for more than 4 years. The students spent over 3 months rehearsing for their play, "Midsummer Chaotic Dreams-The Fairy World", an adaptation of Shakespeare's comedy.



In this play, the audience was brought into the Fairy World where King Oberon and Queen Titania, the royal couple of the Fairy World, embroiled in a power tussle over the possession of a little boy given to them as a gift. Puck, the Fairy leader was caught in all this unfolding drama as the unwilling servant, who decided to use a



magic that would eventually and unwittingly allow the characters to see their follies. Through their problems, mayhem arose and they came to a realisation on how they had each been blinded by misjudgement, pride and ego. The students did a fantastic job and in addition to that, the audience was amazed with the colourful lights and costumes.

5. Other engagement and awareness initiatives

No. of trial classes conducted in FY19/20	6
No. of workshops (DAS) conducted in FY19/20	1
No. of articles submitted for FACETS / DAS Blog	3
No. of teasers content submitted for DAS social media platforms	5

TESTIMONIALS FROM PARENTS

“Jovin is very happy and enjoys all aspects of the SDA program. I have seen improvement in his confidence and communication.”

- Parent of Jovin

“Myiesha enjoys the drama programme. It has boost her ability to showcase herself as an individual. She is no longer shy to communicate with people.”

-Parent of Myiesha Ayra

“Sofia always looks forward to attending DAS drama class. She has shown the greatest improvement in her confidence and memory level. I am sure the teachers have the best ability to attract the kids.” - Parent of Sofia

“Olive enjoys the programme. She has improved greatly in her confidence when performing in front of an audience. Much thought goes into the planning of the play for the term and year end performance. The teachers are mindful to assign roles that suit each child as well oversee their social emotional progress.”

- Parent of Olive

SUCCESS STORY—TOH JIA YING

Toh Jia Ying joined Speech and Drama Arts programme in 2015 when she was in Primary 3. She's diagnosed with dyslexia and moderate language disorder. Jia Ying is a quiet & soft spoken girl. It was very hard to hear her speak and she had difficulty expressing herself in class. Over the years, Jia Ying who is now in Secondary 2, has shown great improvement in every aspect of performance and communication skills. She readily accepts challenging roles and would take the initiative to share her ideas to improve her presentations, whether for class showcases or external performances. Her parents and teachers are very proud of her achievement!



We had a chance to interview Jia Ying to unravel the secrets to her success.

Teacher: *What are the memorable moments in SDA?*

Jia Ying: I will not forget the performances I was in all these years. My favourite role would be the Jade Emperor in The Monkey King. I felt very special sitting on the throne.

Teacher: *Preparing for a play is not an easy feat. How do you overcome the challenges?*

Jia Ying: I used to have problem reading my lines but as I practiced with friends and the SDA teachers, I was able to read and memorise my lines well. I could read better too. Also, I used to worry about what the audience will

think of me if I make a mistake on stage. And I will get nervous when I see the audience while performing. After many years in SDA and involved in many performances, I know what to do whenever I get nervous on stage. I will focus my eyes towards the end of the hall and not look at the audience, until I'm ready to. Knowing that the teachers and the audience are always supportive, I feel more assured.

Teacher: *Apart from drama skills, what other skills have you acquired while in SDA programme?*

Jia Ying: The most important skill would be the ability to communicate with people around me with more confidence. Now, I feel good about myself. I used to be too shy and I didn't know how to hold a conversation with my friends.

Teacher: *There are students out there who love to join a drama class but they are worried because they have difficulty in reading. Any encouraging words for this group of students?*

Jia Ying: I would tell them not to worry too much. There are teachers to guide you. And eventually you will gain the confidence to perform with your classmates on a big stage.



Picture above: Jia Ying as the 'Jade Emperor' in *The Monkey King* in 2017.

Pictured below: Jia Ying as part of an ensemble for the play, Hang Tuah, in 2018.



*Pictured below: Jia Ying as one the fairies in Midsummer Chaotic Dreams
– The Fairy World in 2019*



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ABOUT THE AUTHORS



MUZDALIFAH HAMZAH

*Speech and Drama Arts Programme Manager
Lead 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. Currently, she is the Programme Manager for SDA programme. Apart from 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. In addition, Muzdalifah also conducts drama workshops in MOE schools.

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 GILL

Senior 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. She also teaches Speech & Drama workshops at MOE schools.

Besides teaching literacy and drama classes, she also contributes to developing the Speech & Drama Arts curriculum and teaching resources. Amrit holds a Master Degree in Education (Special Education) from Nanyang Technological University (NIE-NTU). She has a strong passion for working with students with dyslexia and in helping them to achieve their goals.



SPEECH AND DRAMA ARTS PROGRAMME



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

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:

- Creative Drama (K2 - Primary 3)
- Literacy Through Drama (Primary 4 - 6)
- Educational Drama (Secondary 1 - 2)

At the end of each semester, students will take part in a showcase performed in front of an invited audience. The showcase is the highlight of each programme as it gives our students the experience and exposure of performance making.

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 meaningful 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

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, Ho Shuet Lian, Elizabeth Lim Yien Yien, Tammy Wong, Seet Xian Hui
and Sharon Reutens

*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 children’s listening, understanding, speaking, 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 access 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, language and communication 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). Children ranging from pre-schoolers to secondary school students - with or without a diagnosis of dyslexia - can enrol, 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 FY2019 - 2020

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, Serangoon, Jurong Point, Tampines, Parkway Parade and Woodlands. Most of the speech and language therapy students were also attending the Main Literacy Programme (MLP) at DAS while undergoing speech-language therapy.

The breakdown of student numbers, and the number of SLTs, per term in FY2019 - 2020 is as follows:

FY 2019 - 2020	TERM 2 2019	TERM 3 2019	TERM 4 2019	TERM 1 2020	TOTAL
STUDENT ENROLMENT (includes students from school-based SLT programmes, i.e. SLT Service @ Northlight School, School-based Project @Assumption Pathway School)	181	191	185	190	747
NUMBER OF SLTS	5				

Speech-language Assessments

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 FY2019 - 2020, the DAS SLTs conducted a total of 6 speech and language assessments, with the breakdown per term as follows:

FY2019 - 2020	TERM 2 2019	TERM 3 2019	TERM 4 2019	TERM 1 2020	TOTAL
Number of Speech-and-Language Assessments conducted	1	2	3	0	6

Workshops and Training

In addition to the provision of regular therapy and assessment services in FY2019 - 2020, 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.

DATE	TYPE	EVENT TITLE	PARTICIPANTS	SLT(S) INVOLVED
4 & 11 May 2019	External Training (DAS Academy)	Certificate in Understanding Speech and Language and Communication Needs	Education professionals and parents	LEE EK and Tammy WONG
26 Jun 2019	UnITE SpLD 2019	Pre conference session: Getting into the world of a child who has multiple challenges	Education professionals, academics, and parents	HO Shuet Lian
27 Jun 2019	UnITE SpLD 2019	Presentation: Assessing Language in Bilingual Children with Dyslexia	Education professionals, academics, and parents	SEET Xian Hui
4 Aug 2019	Parent Talk	Coffee Talk @SRN LC for parents: Phonological Awareness	Parents	Tammy WONG
14 Aug 2019	In-house Inset	AET Training	DAS Educational Therapists	Tammy WONG
21 & 28 Sep 2019	External Training (DAS Academy)	Certificate in Understanding Speech and Language and Communication Needs	Education professionals and parents	Elizabeth LIM and SEET Xian Hui
27 Nov 2019	External Training (DAS Academy)	Master of Arts in Special Educational Needs – Module on Speech & Language Development & Difficulties	Education professionals	HO Shuet Lian
28 & 29 Nov 2019	SES Workshop	Getting Ready and Staying Happy in Primary School for K2 – P2	K2 – P2 students	Tammy WONG and LEE EK
26 Feb 2020	In-house Inset	AET Training	DAS Educational Therapists	SEET Xian Hui
17 Mar 2020	Preschool Seminar 2020	Workshop: Engaging Children in Meaningful Conversations	Parents and education professionals	LEE EK and Elizabeth LIM

RESEARCH CONDUCTED

The SLTs conducted an evaluative study on the effectiveness of DAS speech and language therapy. The therapy programme evaluation involved 23 children in mainstream education aged 5 to 12 who were diagnosed with dyslexia and subsequently with mild-severe language disorder at the start of the study. A small-scale quasi-experimental design with a control group was used without random assignment of participants to either an intervention condition (n=11), or a control condition (n=12). The intervention group underwent language therapy directly delivered by DAS SLTs in a group setting (1 SLT : 2-3 children) once a week, an hour per session, for at least a term (i.e. ≥ 8 sessions). Participants in the control group matched those in the intervention group overall on age and level of severity but did not receive any speech-language therapy for the duration of the study.

All participants in both groups received the same level of literacy support from educational therapists in the curriculum-based DAS Main Literacy Programme (MLP) whilst the research was on-going. The objective of the evaluation was to find out the impact of language therapy as it is practised by speech-language therapists (SLTs) at DAS on these children.

Participants

A total of 23 participants were recruited for the evaluation through opportunistic sampling from the various DAS Learning Centres which provided speech-language therapy intervention, with a mean average age of 9;9 (SD = 1;6), and comprises 17 males and 6 females. A detailed breakdown of the number of participants in each group across the two age levels of 5-8 years old and 9-12 year old is shown in Table 1. It can be seen that the younger group of participants were well matched for age, whereas the older intervention group were more than 1 year older than the controls.

Table 1: Breakdown of number of participants, average age and gender across the different age levels for both control and intervention groups

GENDER	CONTROL GROUP (N = 11)		INTERVENTION GROUP (N = 12)	
	5 – 8yo Age Level (n = 4)	9 – 12yo Age Level (n = 7)	5 – 8yo Age Level (n = 3)	9 – 12yo Age Level (n = 9)
	Avg age (@t): 8;1	Avg age (@t): 9;7	Avg age (@t): 8;1	Avg age (@t): 11;2
MALE(S):	3	6	1	7
FEMALE (S):	1	1	2	2

All participants had been diagnosed with dyslexia prior and were simultaneously enrolled in the DAS Main Literacy Programme (MLP) as the primary intent of DAS SLT programme was to support these children in their language development. In addition, all participants had been identified by various referral sources as needing more focussed speech-language therapy support and having potential language issues.

For participants in the intervention group, an additional criterion was involved, in that they had to be scheduled to commence language therapy at the beginning of the intervention period, or had only started language therapy immediately prior.

In contrast, participants in the control group were selected from the waitlist of children to be enrolled in the DAS Speech-Language Therapy. Due to staffing constraints, they were not foreseen to be scheduled for language therapy during the entire period of study. As much as possible, participants in the control group were selected to match the intervention group overall on age and level of severity.

Assessment measures

The primary outcome measure was a standardised test of language ability. The Clinical Evaluation of Language Fundamentals - Fourth Edition UK (CELF®-4UK) assessment tool was selected to assess the language skills of participants. CELF®-4 is an individually administered standardised language assessment that is widely used as a diagnostic tool to determine if a student (ages 5 through 21 years) has a language disorder, with established reliability and validity in the areas of test content, response processes, internal structure, relationships with other variables, and consequences of testing (Semel, Wiig, & Secord, 2006).

For the purpose of the evaluation, only the core language subtests of CELF®-4UK which comprise of the four most discriminating subtests for each age level were used. Performance in these core language subtests, when combined together, provides an overall measure of a student's language ability, with a high degree of reliability (average reliability coefficient: $r_{xx} \geq .90$) (Semel, Wiig, & Secord, 2006). The core language subtests for each age level, and a brief description of what was tested as indicated in the CELF®-4UK manual, are listed overleaf:

At commencement (t_0), the presence of a language disorder was indicated in all participants in both the control and intervention groups, based on their pre-test scores on the CELF-4UK Core Language Subtests. The severity of the language disorder varied from mild (within -1 to -1.5 SD) to moderate (within -1.5 SD to -2 SD) to severe (-2 SD and below). An overwhelming majority of participants - 7/11 (63.6%) in the control group and 11/12 (91.7%) in the intervention group - were classified as

AGE LEVEL		CORE SUBTESTS	DESCRIPTION
9 – 12yo	5 – 8yo	Word Structure	<p>Evaluates the ability to (a) apply word structure rules (morphology) to mark inflections, derivations, and comparison; and (b) select and use appropriate pronouns to refer to people, objects and possessive relationships.</p> <p>The participant completes an orally presented sentence that pertains to an illustration.</p>
		Concepts and Following Directions	<p>Evaluates the ability to (a) interpret spoken directions of increasing length and complexity, containing concepts that require logical operations; (b) remember the names, characteristics, and order of mention of objects; and (c) identify from among several choices the pictured objects that were mentioned.</p> <p>The participant identifies objects in response to oral directions.</p>
		Recalling Sentences	<p>Evaluates the ability to (a) listen to spoken sentences of increasing length and complexity, and (b) repeat the sentences without changing word meanings, inflections, derivations or comparisons (morphology), or sentence structure (syntax).</p> <p>The participant imitates sentences presented by the examiner.</p>
		Formulated Sentences	<p>Evaluates the ability to formulate complete, semantically and grammatically correct spoken sentences of increasing length and complexity (i.e. simple, compound, and complex sentences), using given words (e.g. car, if, because) and contextual constraints imposed by illustrations.</p> <p>The participant is asked to formulate a sentence, using target words or phrases, while using an illustration as a reference.</p>
		Word Classes 2 – Total	<p>Evaluates the ability to understand and explain logical relationships in the meanings of associated words.</p> <p>The participant selects two words among 3-4 words that go together and explains their relationship.</p>

having a severe language disorder. A detailed breakdown of the severity of the language disorder across the different age levels for both control and intervention groups at commencement of the study (t_0) is shown in Table 2.

Table 2: Breakdown of participants and the severity of their language disorder as indicated by CELF-4UK Core Language score across the different age levels for both control and intervention groups at commencement of the study (t_0)

SEVERITY (at commencement of study, t_0)	CONTROL GROUP (N = 11)		INTERVENTION GROUP (N = 12)	
	5 – 8yo Age Level (n = 4)	9 – 12yo Age Level (n = 7)	5 – 8yo Age Level (n = 3)	9 – 12yo Age Level (n = 9)
Mild (within -1 and -1.5 SD)	-	-	-	1
Moderate (within -1.5 SD to -2 SD)	2	2	-	-
Severe (-2 SD and below)	2	5	3	8

Implementation of therapy

Participants in the intervention group received speech-language therapy conducted by in-house DAS speech-language therapists, on top of literacy support provided by DAS educational therapists, throughout the duration of the study. All four SLTs involved in the study were experienced speech-language therapists who were registered with full registration with the Allied Health Professions Council (AHPC) throughout the period of study.

The duration of speech-language therapy ranged between 8 to 20 weeks, with an average of 12.09 hours of speech-language therapy sessions (SD= -3.56; Range: 8-20), and at a frequency of 1 hour of therapy per week. The variance in duration of therapy was due to staffing constraints. A detailed breakdown of the number of hours of speech-language therapy attended across the two age levels of 5-8 years old and 9-12 year old is shown in Table 3.

Table 3: Breakdown of the number of hours of speech-language therapy attended by participants in the intervention group across the different age levels

INTERVENTION GROUP (N = 12)			
5 – 8yo Age Level (n = 3)		9 – 12yo Age Level (n = 9)	
Average number of SLT attended (hrs) = 11.00		Average number of sessions (hrs) = 12.56	
SD:	3	SD:	4.1
Range:	8 – 14	Range:	9 – 20

Therapy followed a skills-based intervention model in which intervention was determined by a student's individual needs, whereby core language deficits were addressed through a diagnostic / prescriptive approach based on clinical reasoning and remediation was provided at the level of hypothesized breakdown, independent of any curriculum. Intervention sessions were conducted in small groups (2-3 children per group) and targeted the development of children's receptive and expressive language, in terms of syntax, morphology, semantics, as well as auditory attention, discrimination and memory. Phonological awareness activities were also included within the scope of therapy if required. Since participants in the intervention group presented with unique therapy needs due to differing severity levels and/or varied hypothesised underlying causes for their language deficit(s), the focus of therapy conducted for each participant in the intervention group was determined by the SLT responsible for the participant based on his or her clinical reasoning.

In contrast, participants in the control group did not receive any speech-language therapy during the entire period of study due to staffing constraints. However, they received the same level of literacy support from educational therapists in the curriculum-based DAS Main Literacy Programme (MLP) as children in the intervention group.

Findings

All scores for the intervention group were enhanced in comparison with the control group, despite groups being well matched with no significant differences at the pre-test stage. Participants in the intervention group made statistically significant improvements in results in one subtest of the standardised assessment (the Formulated Sentences subtest in CELF®-4UK), which showed significant improvement

not just in raw scores, but in scaled scores as well (raw scores: $p = 0.0002$; scaled scores: $p = 0.01$). Scaled scores are the most difficult measure to improve, because they are adjusted for age. Comparisons of the pre- and post-test results for intervention and control groups for the CELF®-4UK subtest that is significantly improved are represented visually in the following figures:

Figure 1. Raw Scores - Formulated Sentences - CELF®-4UK (Pre- and Post-)

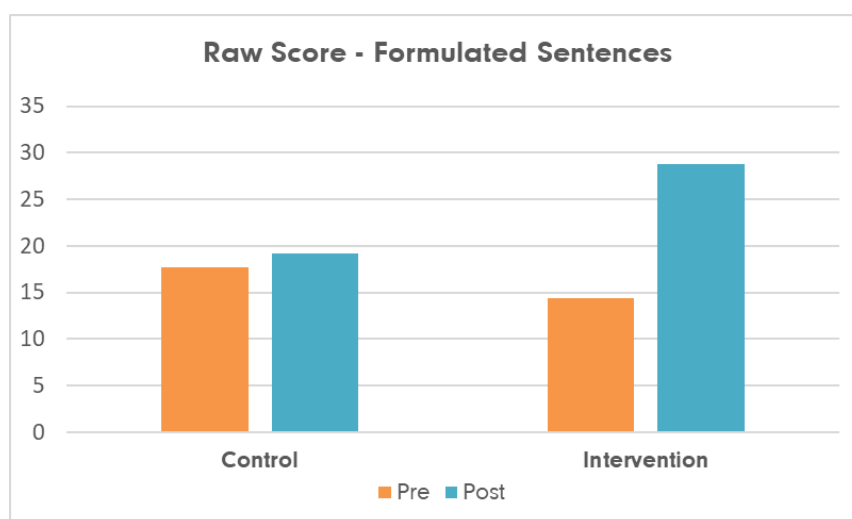
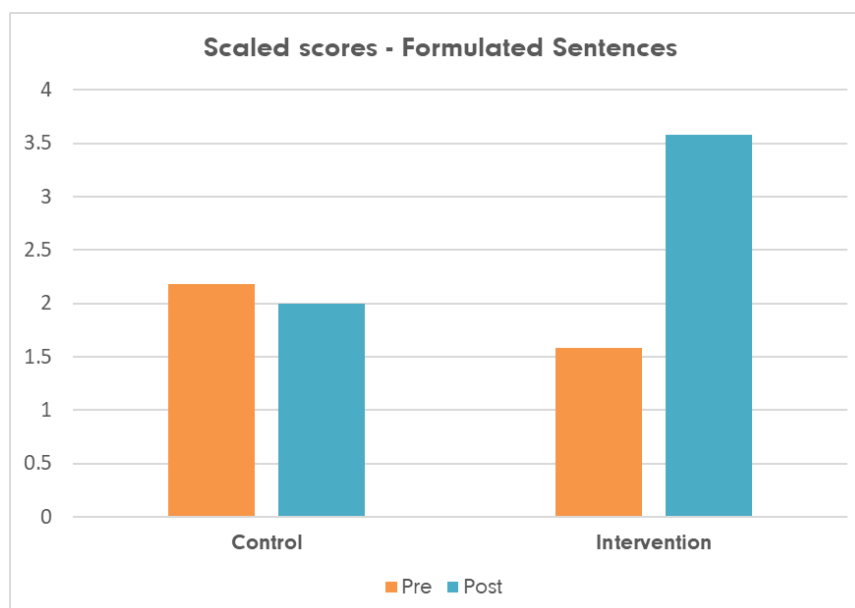


Figure 2. Scaled Scores - Formulated Sentences CELF®-4^{UK} (Pre- and Post-)



In addition, effect sizes were calculated because small group sizes meant that the impact of the support was unlikely to reach significance. Effect sizes provide a more meaningful statistic to measure the improvement in this study and also to allow for a comparison between different subtests that are scored on different criteria. The most conservative method was adopted where intervention and control standard deviation varied, using the average standard deviation of the 2 groups. A positive effect size was identified, with $d=0.2$ representing a 'small' effect size, 0.5 representing a 'moderate' effect size and 0.8 representing a 'large' effect size (Cohen, 1988). It may be seen that the effect sizes for Concepts and Following Directions, Formulated Sentences, Word Structure, Recalling Sentences and Word Classes 2-Expressive are particularly strong. The results obtained by the intervention and control groups at commencement (t0) and completion (t1) are summarised in Table 4 on the following page.

Limitations and directions for further research

It should be noted that, although controlled, this evaluation represents a small-scale study, but this in itself is important because it reflects a naturalistic approach to language intervention. The impact of SLT has typically been seen as difficult to evaluate, because the approach is individually tailored to the needs of each child or group of children. Adding to the complexity is the fact that the population size of children simultaneously diagnosed with language disorder and dyslexia is not large to begin with and, even within this niche group, there are considerable variances in severity of the language disorder, areas of weakness and strengths in receptive and expressive language, and the cognitive, sensory and communication profiles of each child. Furthermore, there is wide variability in terms of co-morbidities with other medical conditions, age of entry (i.e. when intervention was first accessed), previous and current experiences with therapy and/or other literacy interventions, and the level of parental and educator knowledge and commitment available to support the child at home and in the different schools which contribute significantly to the intricacies of intervention and limits the research designs that may be used in measuring its effectiveness. Consequently, accounting for the variances mentioned and separating the effects arising from the interactions with and interplay of each of these factors may be overwhelmingly complex and of limited practical value. Evaluating an approach to language intervention (such as that practised by the DAS SLTs), rather than a standard intervention applied across the board regardless of need, could be argued as being more useful clinically.

Nevertheless, the design of the study is subject to a number of limitations, most specifically in the small number of participants, which reflect standard procedures in SLT support, and an imbalance in the age groups, with the children in the intervention group older than the controls. Interestingly, this is likely to reflect more

Table 4: Mean data raw scores for pre- (t0) and post- (t1) assessments with standard deviation in parentheses, with effect sizes and significance

CELRF®-4 ^{UK} Subtest	Control Group (pre-)	Control Group (post-)	Diff.	Interven- tion Group (pre-)	Interven- tion Group (post-)	Diff.	Effect size	Significan ce
Concepts & Following Directions [Raw]	33.09 (9.26)	35.82 (9.46)	2.73 (2.65)	36.75 (9.43)	44.08 (6.39)	7.33 (7.81)	1.74	p=0.08
Concepts & Following Directions [Scaled]	4.54 (3.5)	5.36 (3.47)	0.82 (1.20)	4.6 (1.78)	6.8 (3.61)	2.2 (3.91)	0.5	NS
Word structure* [Raw]	18.75 (2.22)	18.75 (1.89)	0.00 (1.41)	11.33 (2.52)	19.67 (3.21)	8.33 (3.21)	2.00	N/A (4 & 3 per group)
Recalling Sentences [Raw]	29.27 (9.73)	30.64 (9.34)	1.36 (2.25)	28.08 (11.55)	34.67 (10.42)	6.58 (5.30)	1.38	P=0.07
Formulated Sentences [Raw]	17.73 (9.32)	19.18 (8.89)	1.45 (3.67)	14.33 (9.81)	28.83 (11.25)	14.50 (8.48)	2.15	p=0.0002 ***
Formulated Sentences [Scaled]	2.18 (1.99)	2.00 (1.55)	-0.18 (1.47)	1.58 (1.73)	3.58 (3.18)	2.00 (1.21)	1.21	P=0.01 **
Word Classes – Receptive [Raw]	5.86 (1.77)	7.00 (1.29)	1.14 (1.46)	7.00 (2.27)	8.50 (1.85)	1.50 (1.51)	0.24	NS
Word Classes – Expressive [Raw]	2.86 (1.46)	3.00 (1.41)	0.14 (0.69)	3.78 (1.64)	4.89 (1.45)	1.11 (1.40)	1.4	P=0.07
Word Classes 2 – Total* [Scaled]	4.3	5	-	4.6	5.1	-	NS	NS

* Data is available for both 5 – 8yo and 9 – 21yo Age Levels for all subtests except Word Structure (which applies only to the 5 – 8yo Age Level) and Word Classes 2 – Total (a combination of Word Classes 2 – Receptive and –Expressive Subtests, which applies only to the 9 – 12yo Age Level).

** / *** - statistically significant

severe difficulties in this group, who despite the advantage of age continue to struggle with language (e.g. Stothard, Snowling, Bishop, Chipchase, & Kaplan, 1998). It might be predicted that their difficulties would be harder to remediate, so this is a good challenge for the approach. It is particularly rewarding to be able to report the positive impact of the intervention with this group.

Conclusion

Participants in the intervention group made statistically significant improvements in results of one subtest of the standardised assessment used to measure outcomes, and that effect sizes were particularly strong in others. The findings should be considered in light of other studies on the efficacy of speech-language therapy that target several language areas, or a specific area. While many of these have reported significant gains, outcome measures other than standardised tests were used (e.g. Ebbels, Maric, Murphy, & Turner, 2014; Ebbels et al., 2012; Parsons, Law, & Gascoigne, 2005; Hayward & Schneider, 2000; Throneburg, Calvert, Sturm, Paramboulas, & Paul, 2000). The majority of those that do use standardised tests as outcome measures fail to show any significant effect of intervention (Boyle, McCartney, Forbes, & O'Hare, 2009; Gillam et al., 2008). Hence, the positive findings of the current evaluation point to the effectiveness of language therapy as it is practised by the SLTs at DAS in helping children with a range of severity in language disorders.

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 the write-up detailing the research findings highlighted above has been submitted for publication in the next APJDD journal. 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. In FY2019 - 2020, Ms Tammy Wong successfully obtained her AHPC Full Registration in May 2019 with Ms. Ho Shuet Lian (primary) and Ms. Sharon Reutens (secondary) as her clinical supervisors. Ms. Seet Xian Hui who joined the team in early 2019, successfully obtained her AHPC Full Registration in Mar 2020 with Mr.

Lee Er Ker (primary) and Ms. Ho Shuet Lian (secondary) as her clinical supervisors. Hence, all DAS SLTs are registered with Full Registration with the Allied Health Professions Council (AHPC) by the end of the fiscal year and hold current and valid practising certificates, renewable every two years.

NEW INITIATIVES TAKEN FOR FY2019 - 2020

◆ Self-Awareness and Social Communication Programme @Assumption Pathway School

Developed and implemented in collaboration with the DAS Speech and Drama Arts (SDA) and Main Literacy Programme (MLP) teams, this exciting programme was conceived to help Assumption Pathway School (APS) Year 1 teenage students improve their self-awareness and social communication skills. A team of six DAS teaching staff comprising Ms. Elizabeth Lim and Ms. Tammy Wong (SLTs) and Educational Therapists (EdTs) conducted a series of 15 lessons from January to May 2019. All Year 1 classes at APS were involved in the programme. For each class, a one hour lesson is conducted once a week, with two DAS teaching staff assigned per class. Some of the topics covered include personality and character, whole body listening, confident communication, friendship and bullying. The content was delivered through teacher-led discussions, role plays, hands-on activities and reflection worksheets. Pre- and post-surveys were completed by students as evaluation of the effectiveness of the workshop. The programme benefited approximately 100 APS Year 1 students.

CONTINUED FOLLOW-UP ON PAST INITIATIVES

School-based Programme

◆ Speech-Language Service at Northlight School

Northlight School engaged DAS for the fourth year running to bring speech-language therapy to its students on-site, after seeing how SLT has benefitted its students in the past due to the stellar work by Ms. Ho Shuet Lian despite the complexity of the caseload there. An average of 14 students benefitted from speech-language therapy over 3 school terms during the year. As with past years, the majority of them had poorly developed communication skills and ~85% of the students seen have 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 staff they interacted with.

In recognition of the outstanding work she has done with the students there, NLS has requested that Ms. Ho continue at NLS in 2020. As DAS is guided by a policy of rotational engagement to ensure the interests of professional development its staff, Ms. Tammy Wong will take on the assignment in the next fiscal year following a smooth handover.

TRAINING FOR PARENTS, EDUCATION PROFESSIONALS AND INTERNS

◆ Certificate in Understanding Speech, Language and Communication Needs

The DAS SLT team completed two runs of the Certificate in Understanding Speech, Language and Communication Needs (also recognised as a module in the Specialist Diploma in Specific Learning Differences) in May and September 2019. 18 participants attended the course in total. 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 by the SLTs, 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. Participants gave feedback that the course content provided them with a much better awareness and understanding of the scope and extent of difficulties that are likely to be faced by children with speech-language and communication needs.

◆ Increased Involvement at UNITE SpLD 2019: UNITE SpLD 2019 Pre-Conference Session

Ms. Ho Shuet Lian conducted the UniteSpLD pre-conference session in collaboration with the Specialist Psychologists titled, "Getting into the world of a child who has multiple challenges", the second time the DAS SLTs have done so. The issue of co-morbidity and the rate of co-morbidity linked to children diagnosed with dyslexia were highlighted. Participants were then encouraged to gain better insight into the significant and varied challenges faced by children with multiple issues, and how these challenges may manifest in their learning and everyday lives through case studies. Strategies that have been helpful in addressing some of the issues faced by these children were shared too. The pre-conference was well received, and many participants visited the SLT booth after the session to further explore how speech-language therapy can contribute to the learning of these children.

◆ **Presentation at Unite SPLD 2019:
Assessing Language in Bilingual Children with Dyslexia**

Ms. Seet Xian Hui shared her research findings at the main conference in a presentation titled, "Assessing Language in Bilingual Children with Dyslexia". Participants were brought up-to-date on the subtle but significant differences that differentiate developmental dyslexia and developmental language disorder (DLD). The limitations and difficulties associated with the way language is currently assessed in the local context were then highlighted. Participants were then informed of how the research findings regarding the use of sentence repetition tests for assessing oral language may show the way in contributing to more accurate and efficient differential diagnoses of the language-related difficulties children face and in guiding intervention planning. Feedback on the presentation was excellent with numerous participants expressing interest at the theoretical and clinical implications of Xian Hui's research.

◆ **Master of Arts in Special Educational Needs:
Module on Speech & Language Development & Difficulties**

On 27 November 2018, Ms. Ho Shuet Lian conducted a lecture on Speech and Language Development and Difficulties as part of a module in the Masters in Special Educational Needs conducted by DAS Academy. It was attended by 12 participants made up of DAS educational therapists and other professionals, including a DAS Centre Manager. The lecture focused on speech and language development, the different types of speech and language disorders, and areas of difference and overlap with other learning difficulties. The complexities of assessing, diagnosing and providing intervention to children with speech and language difficulties who struggle with learning English in a multilingual environment were also shared, especially how the use of Singapore Colloquial English and the learning of English as a Second Language may affect the acquisition of the English language for these children in Singapore.

STUDENT WORKSHOPS

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

Ms. Tammy Wong and Mr. Lee Er Ker conducted the Social Skills - Getting Ready and Staying Happy in Primary School for K2 - P2 workshop, a regular feature of the DAS SLT calendar, at DAS Serangoon Learning Centre this fiscal year. It was a workshop that took place over two half-days on 28 and 29 Nov 2019. The workshop was again sold out before the registration closing date. The participating children

learnt how to use their social smarts to stay happy in their primary schools through fun games, role play, practical activities and stories. This included learning the Do's and Don'ts on how to be a good conversation partner, friend and team player and be assertive in a positive ways. At the end of the workshop, a short insightful sharing session with each child's parent(s) discussing the child's participation in the workshop activities, as well as the child's strengths and areas to look into with respect to their social skills, was conducted. Each child also received a personalised certificate of achievement at the end of the workshop.

ENGAGEMENT AND AWARENESS

Participation in DAS WDAW Exhibition

The DAS SLTs participated in the WDAW Opening Day event at UOB Atrium on 1 October 2019 by setting up a booth to raise awareness of speech, language and communication disorders common in children. There was a display showcasing SLT resources used in therapy and members of the public who visited the booth played games using the resources to gain a better understanding of the difficulties faced by children with speech, language and communication disorders and how therapy may help them. Many also had their misconceptions about these disorders cleared and their queries answered.

Contribution to Coffee Talk @ SRN LC

Ms. Tammy Wong contributed to the Coffee Talk session with parents of SRN LC on 4 Aug 2020 by sharing on the topic of phonological awareness. The session was well received.

PROGRAMME TESTIMONIALS

Sun, 9 Jun 2019, 15:04

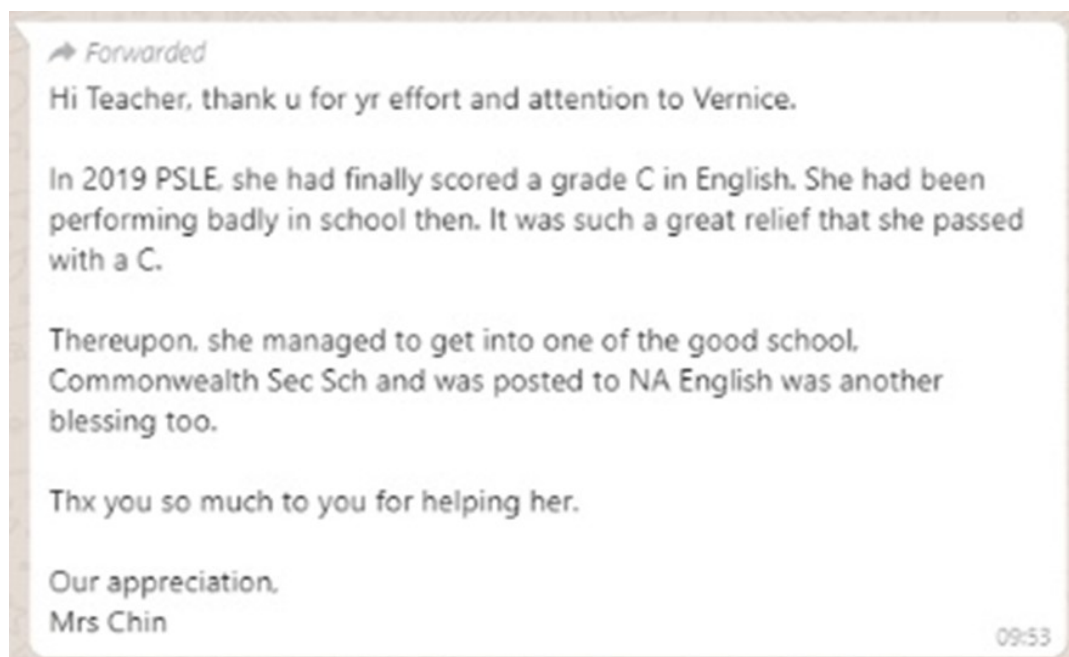
Dear Shuet Lian

Thank you very much for guiding ID and helping him. We really appreciate your help.

Yours Sincerely

U

Email from parent of ID (P3)

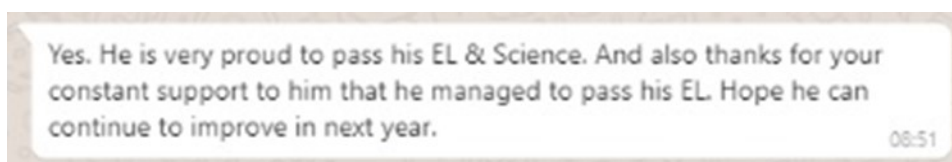


Message from Mrs Chin, parent of Vernice

"Tks for all your patience, guidance and accommodation to him (Leyton)... he likes ur class a lot and always comes out with a smile. Much much appreciated."

Message from Mr Erh, Parent of Leyton (P4)

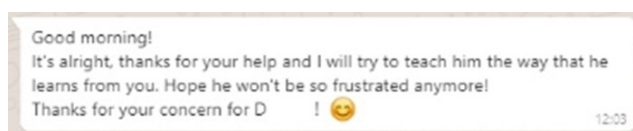
"You are my inspiration today and future. Because of you, I can speak and pronounce words pretty well until all my teachers cannot noticed that i have a speech problem. Thank you so much for everything you did for me to improve in my speaking skill." Note from child Z (P6)



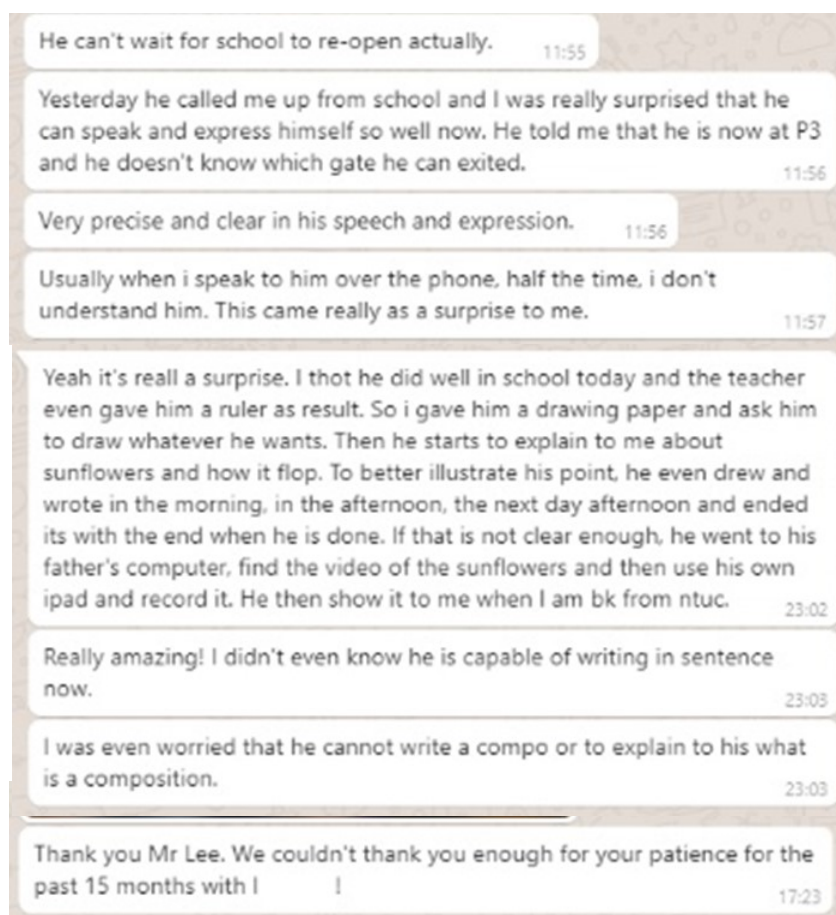
WhatsApp message from parent of LN (P4)



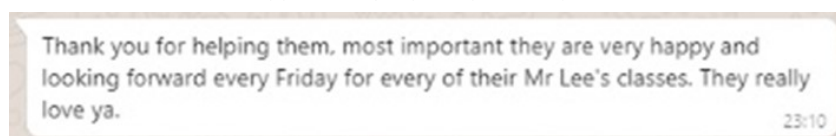
WhatsApp messages from parent of Aniq



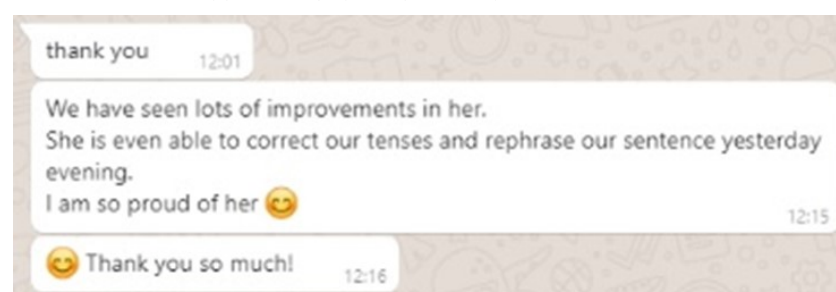
WhatsApp message from parent of DC (P3)



WhatsApp messages from parent of IW (P2)



WhatsApp message from parent of PL (P4) and TK (P3)



WhatsApp message from parent of JT (P6)

SUCCESS STORIES

Success Story 1

K, a P5 boy has been attending weekly group speech-language therapy since March 2019. Initially, K presented as a shy and quiet student. He did not initiate conversations in class. Most of the time, he was observed to smile, nod his head or shrug his shoulders when questions were posed to him. Occasionally, he gave one-word responses. It was a challenge to sustain a meaningful conversation with him. Over the year, K worked on therapy activities that strengthen his auditory attention and auditory memory, for example, follow multiple steps spoken directions.

At the same time, K did activities such as answer open-ended “why” questions, make requests and narrate what has happened to build his expressive language skills. Modelling has also helped K to develop robust expressive language skills. Now, K uses compound sentences in his speech and speaks with confidence in therapy sessions. He asks questions and initiates conversations. He is able to elaborate when the therapist has difficulty understanding what he has said. K’s mother reported that her son is chattier now.

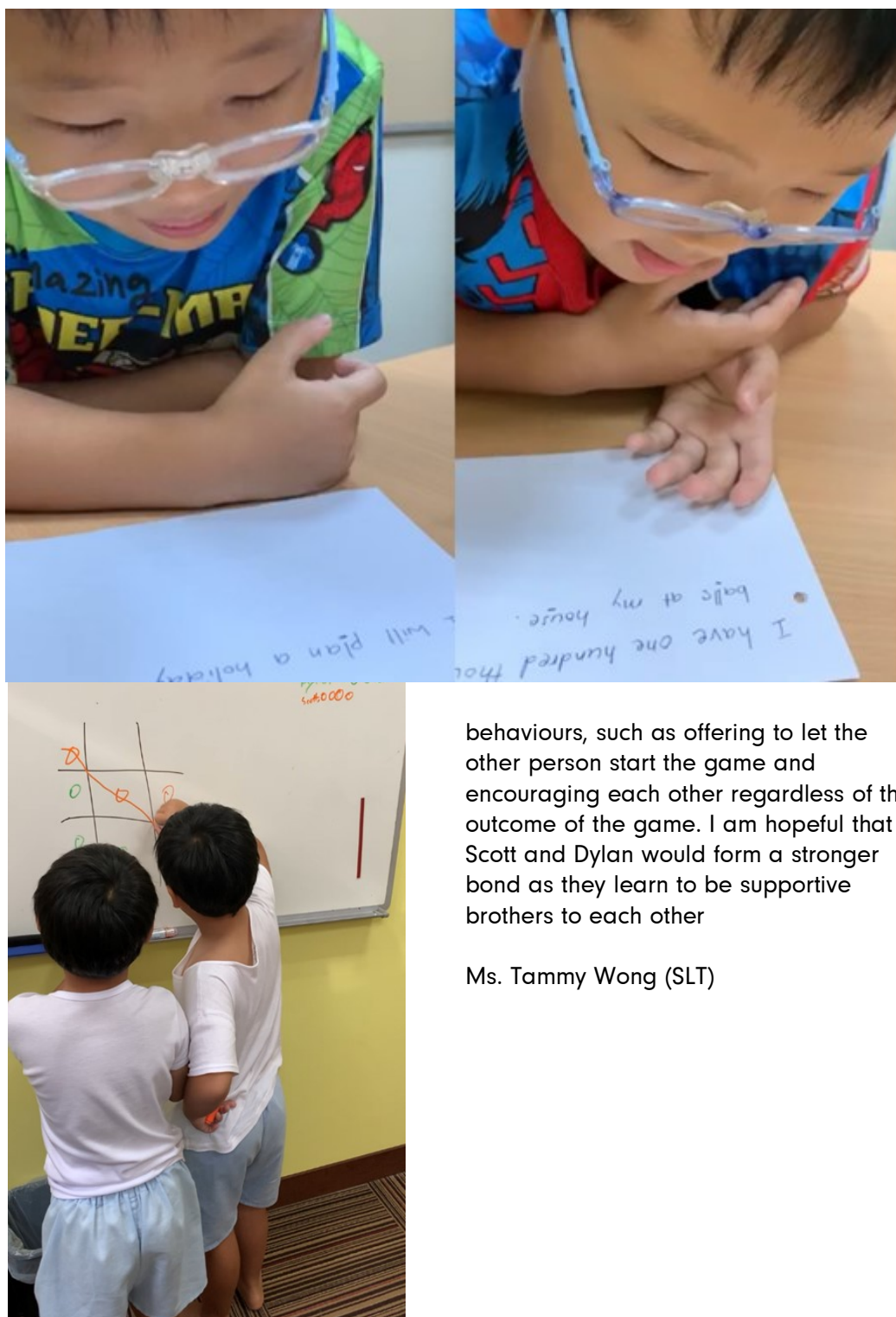
Ms. Ho Shuet Lian (Snr SLT)

Success Story 2

Scott and Dylan are twin brothers, who are currently in Primary 1. They were referred for speech therapy due to speech sound difficulties (i.e., unclear pronunciation of words). They were taught how speech muscles (e.g., tongue, lips) work together to produce clear speech sounds. Using a mirror, the boys would monitor the movement of their own speech muscles when saying sounds that they had difficulties producing clearly.

The SLT would provide feedback on how they can make adjustments to produce the clearest possible pronunciation. After weeks of practice, Scott and Dylan developed self-monitoring skills and were able to identify how to make their own adjustments as they speak. With their hard work and determination to improve, they eventually progressed to being able to produce their target sounds clearly in full sentences.

Both of them also made great strides in terms of their social skills. Due to parents’ concern and the SLT’s observations that Scott and Dylan often display poor sportsmanship when playing (e.g., overly concerned about winning, display anger when losing), the boys were also taught social skill concepts that led to good play behaviours. For example, they took on the concept of being a gracious competitor very well. Within a few sessions, they were able to demonstrate positive play



behaviours, such as offering to let the other person start the game and encouraging each other regardless of the outcome of the game. I am hopeful that Scott and Dylan would form a stronger bond as they learn to be supportive brothers to each other

Ms. Tammy Wong (SLT)

Success Story 3

Aniq is a boy diagnosed with dyslexia, ADHD and Irlen Syndrome. While he has shown improvement in his literacy skills after receiving literacy intervention at the DAS since Primary 1, he continued to struggle with his understanding of written text and verbal expression. Thus, he was referred by a psychologist to see a Speech and Language Therapist (SLT). He then commenced weekly group speech-language therapy sessions with an SLT at DAS when he was in Primary 5. Aniq's SLT noted that he had difficulties making inferences, thereby affecting his understanding of what he reads. Furthermore, any idea seemed genuinely possible to Aniq – even completely illogical ones like monkeys stealing a car and driving off in it. As such, Aniq was mistaken as being mischievous when he wrote illogical answers during his school exams. In addition, it could be difficult to understand Aniq even in conversation as he would leave out important details when recounting an event and would often use non-specific vocabulary.

In his SLT sessions, Aniq was guided through the thought process of making inferences (or what he learnt to call “smart guesses”), and ways to determine the likelihood of each scenario happening, from among various possibilities for a given situation or context. Aniq himself noticed his progress and commented in the second month of his SLT session, “See, I made a smart guess! I used my smart brain!” To help him with his narrative recounts, Aniq's SLT also used an ‘Alibi game’ whereby Aniq had to provide an alibi verbally to defend himself in fake police investigations conducted by his SLT. Omitting important details in his verbal recounts would result in him being “arrested as a suspect”. Aniq thoroughly enjoyed the game and was very motivated to include all the important details in his verbal narratives. He showed good progress over the months and his school teachers also commented that he improved a lot after attending SLT. In the 5th month of his SLT intervention, Aniq was awarded a “Best Speaker Award” in school! It was indeed a great encouragement to him after all his hard work put into improving his language skills. After 3 terms of his weekly SLT sessions, he met all of his intervention goals and was discharged from SLT. Good job, Aniq!

Ms. SEET Xian Hui (SLT)

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ABOUT THE AUTHORS



LEE ER KER

Senior Speech-Language Therapist

Lee is the Programme Manager of Speech-Language Therapy at DAS and oversees the operations of the speech-language therapist (SLT) team at DAS. He has more than 11 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, 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. Lee has a Master of Science (Applied Linguistics) from the National Institute of Education (NIE), Singapore and was a qualified Ministry of Education (MOE) mainstream school teacher. He joined DAS in 2016 and is registered with the Allied Health Professions Council (AHPC) (Full Registration).



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 registered with the Allied Health Professions Council (AHPC) (Full Registration).. 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. Shuet Lian's clinical expertise has led to her engagement by Northlight School to provide specialised intervention for its students over the past four years. She provides advice and clinical support to educational therapists and newly qualified speech-language therapists at DAS.



ELIZABETH LIM YIEN YIEN

Speech-Language Therapist and Associate Lecturer

Elizabeth is a Speech-Language Therapist at the DAS and an Associate Lecturer at the DAS Academy. She holds a Master of Science degree in Speech and Language Pathology from the National University of Singapore and is Allied Health Professions Council registered (AHPC) (Full Registration). Her work involves providing speech, language, communication assessment, and intervention services to children with specific learning differences, ADHD and other comorbid conditions. She provides speech and language therapy services to children between the ages of 5 and 16 years and conducts Social Skills workshops, as well as teacher training. She also has more than fifteen years of experience working with children between the ages of 0 to 8 years, their parents and early childhood educators (ECE), including ECE teacher training, curriculum development and supporting preschools in their provision of holistic and inclusive care and education. She holds a Master of Education degree in Special Education from the Nanyang Technological University, and a Graduate Diploma in Early Childhood Care and Education from Advent Links-SAUC. She especially enjoys working with parents and early childhood educators to nurture children's holistic development in their infancy and early childhood years.



TAMMY WONG

Speech-Language Therapist

Tammy has been with the DAS since January 2018 after graduating with a Master of Speech Pathology from Curtin University, Australia. She provides intervention for learners with dyslexia and/or speech, language and communication needs. In addition, she is involved in conducting speech and language assessments and presenting at workshops for special education and mainstream school teachers, parents and caregivers. Tammy also conducts speech language intervention at Northlight School. Tammy has a strong interest in early language and speech sound development, as well as the socio-emotional development of children with additional learning needs. She is currently registered with the Allied Health Professions Council (AHPC) (Full Registration).



SEET XIAN HUI

Speech-Language Therapist

Xian Hui is a speech therapist who returned to DAS after completing her Master of Science (Speech and Language Pathology) at the National University of Singapore. Prior to taking on her Masters degree, Xian Hui joined DAS in 2015 as an educational therapist and completed her Specialist Diploma in Educational Therapy. She is currently registered with the Allied Health Professions Council (AHPC) (Full Registration). Her clinical experience includes working with children aged 3 to 16 years. Xian Hui provides assessment and intervention for learners with dyslexia and/or speech, language, and social communication difficulties. In addition, she is also involved in conducting lectures on speech and language therapy for the DAS Educational Therapists at the DAS Academy. With a keen interest in research on the language and literacy abilities of children in Singapore, Xian Hui has presented her research findings at both local and overseas conferences (i.e. UnITE SpLD 2019 in Singapore, Twenty-Sixth Annual SSSR conference in Toronto, Canada).



SHARON SANDRA REUTENS

Speech-Language Therapist

Sharon is a Speech-Language Therapist at DAS, who is registered with the Allied Health Professions Council (AHPC) (Full Registration). 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.



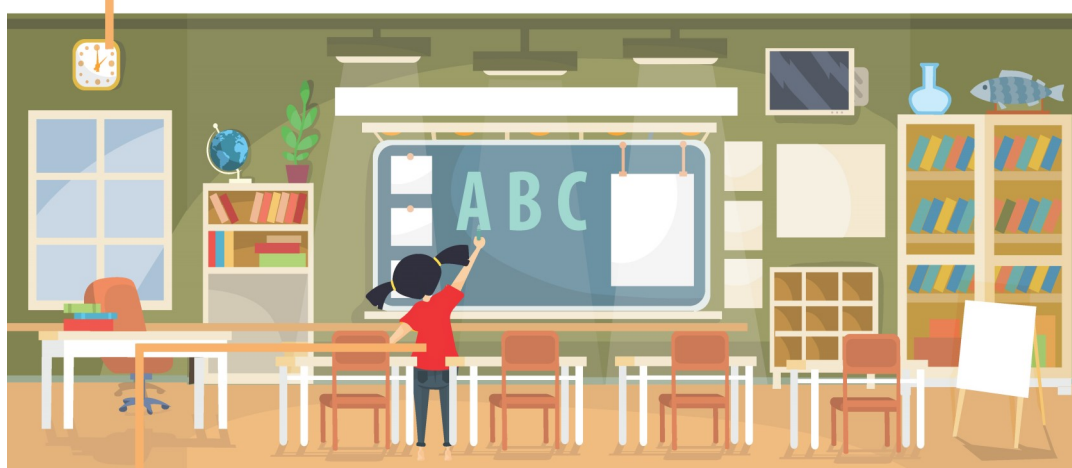
SPEECH AND LANGUAGE THERAPY PROGRAMME



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

OUR SPEECH AND LANGUAGE THERAPY SERVICES

Speech and Language Therapy at the DAS is a skill-based intervention programme for children (pre-schoolers to secondary school students) with speech, language and communication needs. Intervention is determined by the child's needs which are addressed by remediating the core deficits and building up speech, language and communication skills using best practice in an interactive and multisensory learning environment; promoting metalinguistic awareness and developing metacognitive abilities to achieve academic success.



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

An assessment will be done to evaluate the child's speech, language and communication needs. It identifies individual's strengths and weaknesses. A comprehensive report will provide recommendations for intervention and learning support for your child's education.

An assessment typically takes about 2 hours or longer depending on the number of tests that are required.

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

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 Tiruchelvam

*Programme Manager of Science and Lead Educational Therapist
Dyslexia Association of Singapore*

INTRODUCTION

Prior to our launch of our Science Explorers Short-Term Programmes (STP) in Term 3, 2018, we had several parents who had provided feedback and kindly requested if we could have a Science Programme to provide support for our students with dyslexia who are struggling with Science as one of their academic subjects.

Unlike a narrative text, a Science text is an example of an expository prose, which includes different text structures and vocabulary. This becomes a huge struggle for students with learning difficulties to read and comprehend it, as they do not have enough prior knowledge, unable to derive inferences and to implement meta-cognitive strategies during the reading process. They also have issues in identifying main ideas and describing details from the text. Thus, having difficulty with the specialized vocabulary used in the Science text, problems in trying to recall facts and formula, issues with sequencing information in the respective order are some of the key challenges faced by our students with dyslexia when learning Science in the mainstream schools.

Moreover, these challenges occur, as dyslexia is a specific learning disability that is neurobiological in origin and thus, a deficit in the phonological component of language is often unexpected in relation to other cognitive abilities and the provision of effective classroom instruction.

At the Dyslexia Association of Singapore (DAS), we understand the various challenges faced by our students with dyslexia when learning their academic subjects in their schools and we would certainly want to help these students to not only to cope better but to grow as confident individuals and achieve success.

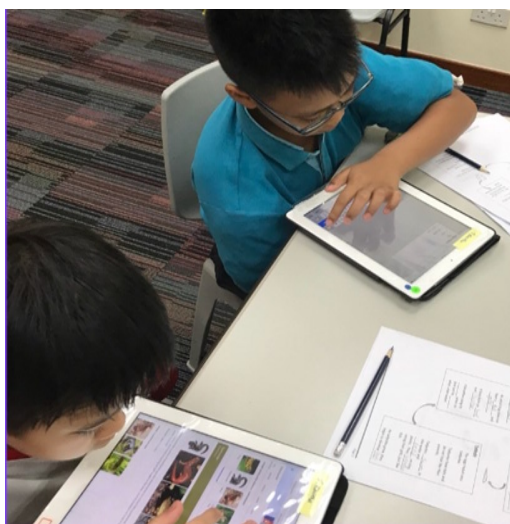
As such, we decided to launch our Science Explorers Short-Term Programmes (STP) which are designed to provide support for our Primary 3 and 4 students with the Science literacy, understanding of the Science processes and specialised vocabulary as well as application of the knowledge and skills to answer Science exam questions in a fun and interactive environment.

PROGRAMME DESCRIPTION

In line with MOE syllabus, the Science themes for Primary 3 and 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, explain, extend and evaluate on Science as an Experiential Learning in their daily lives, society and the environment.

Inquiry-based learning in our Science Explorers Short-Term Programme, supports our students with dyslexia to become thoughtful, motivated, collaborative and innovative learners capable of engaging in their own inquiries and thriving in a world of constant change as well as helping them with the Science literacy, understanding of the science processes and vocabulary knowledge.

Therefore, the Science lessons are 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 Science lesson is structured and organized with inbuilt reinforcements and it includes the application of knowledge and skills to answer Science exam questions as well. As a result, both



the educational therapist and our students co-author the learning experience and wide understanding of personally meaningful content and ideas during the Science lesson.

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 (STP) are for Primary 3 and 4 students with dyslexia who are facing challenges to learn Science in their mainstream school and hence, require a strong foundation in the knowledge and conceptual understanding of the Science syllabus. These students will be provided with opportunities to move beyond being passive recipients of knowledge to becoming their own builders of knowledge who are capable of innovative and creative solutions to real-world problems. They will absolutely learn to adopt a scientific attitude.

EVALUATION OF PROGRAMME FOR 2019

A total of 70 Students who had joined the Science Explorers Short-Term Programmes for the year 2019, 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 good 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 are also shared with their parents upon completion of the 10 lessons in the Science Explorers Short-Term Programme.

New initiatives taken for 2019

There has been a high demand from students who were keen to enrol in the Science Explorers Short-Term Programmes. Therefore, these programmes were conducted during each school term in the year 2019 at 2 DAS Learning Centres and each term included 10 1-hour lessons. In term 4, we also expanded our Science Explorers Short-Term Programmes to both DAS Chua Chu Kang and DAS Parkway Parade Learning Centres. In-line with MOE syllabus, a quality yet a holistic curriculum was developed for both Primary 3 & Primary 4 students based on the five Science themes.

Table 1: Science Themes conducted in Term 1, Term 2, Term 3 & Term 4 in 2019.

TERM/YEAR	SCIENCE THEMES	DAS LEARNING CENTRES
Term 1 / 2019	<ul style="list-style-type: none"> • Interactions • Diversity 	DAS Woodlands DAS Bishan
Term 2 / 2019	<ul style="list-style-type: none"> • Systems 	DAS Woodlands DAS Bishan
Term 3 / 2019	<ul style="list-style-type: none"> • Energy 	DAS Woodlands DAS Bishan
Term 4 / 2019	<ul style="list-style-type: none"> • Cycles 	DAS Woodlands DAS Bishan DAS Parkway Parade DAS Chua Chu Kang

ENGAGEMENT AND AWARENESS

We invited parents for the 'Coffee and Conversations' event in Term 2, 2019 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 Science Explorers Short-Term Programme in Term 3 and Term 4, 2019.

Parents did share their views and feedback on how they could teach Science at home. One of the most exciting parts of our Science Explorers Short-Term Programme is the collaborative partnership between DAS and Parents! Yes, we do share on fun experiments that they could conduct together with their child in the comfort of their homes and wonderful Science resources that they could also use to reinforce their child's learning.

Testimonials / Success Stories

Parent 1 Testimonial:

He did well for his Science SA2 and scored 71.5%. His improved results will motivate him to continue to work hard and not be complacent. Thank you for your hard work and patience in teaching him.

Parent 2 Testimonial:

Thank you for the updates for my son's progress in his Science subject and also many thanks for guiding and motivating him in his writing task.

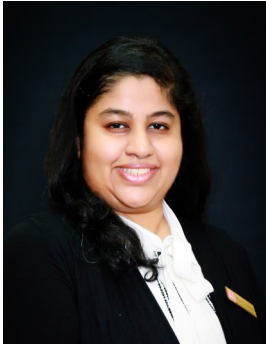
Parent 3 Testimonial:

Just to share with you on his Science examination result, he did well and we see improvement! Thank you.

Parent 4 Testimonial:

He is able to read the Science questions more confidently and spell some of the words accurately. I believe it has boosted his confidence and he enjoys your Science lessons.

ABOUT THE AUTHOR



KAVITHA TIRUCHELVAM

Programme Manager for Science Explorers and Lead Educational Therapist

Kavitha Tiruchelvam is a Lead Educational Therapist and a Programme Manager for the Specialised Educational Services (SES) Science Programmes. 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 Programmes at the DAS, she has conducted over 12 SES Science Explorers Workshops and 37 Science Explorers Short-Term Programmes for primary school students.

She is also a Triple Specialist who has taught the Prep2PSLE Programmes as well as the DAS Main Literacy Programme. In addition, Kavitha continues to train and render support to her colleagues by sharing her wealth of experiences, especially when working with students who struggle with various specific learning difficulties. Kavitha is a Fellow with the Register of Educational Therapists (Asia) and she 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.



SHORT-TERM PROGRAMMES

**Specialised
Educational
Services**

UNLOCKING POTENTIAL

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

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.



STPs that are currently offered are:

- Oral Exam Skills
- Comprehension Cloze
- Science Explorers
- Artventure
- iStudySmart™

HOW ARE THEY DIFFERENT?

The standard programmes offered cater to the long term needs of our students. These help to progressively build our student's foundation in literacy, numeracy, exams skills and other needs. The Short Term Programmes (STP) are short term courses designed to cater to the specific needs or topics our students typically would struggle with.

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