



EVALUATION OF DAS PROGRAMMES



MOE-AIDED DAS LITERACY PROGRAMME MAP

WHAT IS THE VISION FOR THE MAP PROGRAMME?

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

WHAT IS THE MAP PROGRAMME?

MAP or the MOE-aided DAS Literacy Programme provides a comprehensive and quality curriculum to support dyslexic students facing literacy challenges. The MAP Curriculum integrates key essential learning components that are crucial in remediating students with learning difficulties.

- **PHONEMIC AWARENESS AND PHONICS.**

The provision of a multi-sensory and highly structured phonetic instruction through the Essential Literacy Approach (ELA) has been incorporated into MAP lessons to promote and facilitate reading and spelling development in our students.

- **READING FLUENCY**

MAP lessons emphasise the importance of reading fluency through the deliberate planning of reading tasks that take into account students' reading fluency and accuracy to ensure that reading comprehension is not impaired by effortful and inaccurate reading.

- **READING COMPREHENSION**

As comprehension is a constructive and integrative process, MAP aims to equip students with the essential comprehension skills needed to draw inferences as well as to use general knowledge to make meanings and connections of what the students have read.

- **VOCABULARY**

Beyond phonics, MAP explicitly emphasises oral, reading and writing vocabulary development of sight and high frequency word instructions through the use of Assistive Technology to improve students' language acquisition skills.

- **WRITING**

The MAP curriculum team has also developed localised writing packs, materials and resources that cater to the diverse learning needs of students to improve their writing skills.

MOE-aided DAS Literacy Programme - MAP

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INTRODUCTION

Definition and Population

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

MAP

MAP offers intervention, taught in accordance to Orton-Gillingham (OG) principles, which is language based, cognitive, structured, sequential and cumulative, multisensory, diagnostic/prescriptive and emotionally sound. It aims to skill dyslexic students in the areas of phonics/phonemic awareness, reading, comprehension, spelling and writing.

The DAS intervention programme, which was reviewed in 2010, focuses on these elements:

- ◆ the recommended areas of instruction for learners with dyslexia (National Reading Panel, 2000; Rose, 2009)
- ◆ individualised group lessons taught in accordance to the OG principles (Ritchey & Goetze, 2006; Rose & Zirkel, 2007) and modified in view of institutional and funding limitations

- ◆ a suggested framework of information bearing in mind cultural sensitivities and emphasising conceptual teaching of language components as "[k]nowledge organisation is one element that has been used to differentiate novices from experts" (Ridgeway & Dunston, 2000)

Since its inception, MAP has provided intervention for over 5000 students.

“Given the sizeable population of dyslexic students that MAP helps, it is of utmost importance that it continually evaluates its intervention programme.”

PROGRAMME EVALUATION

Given the sizeable population of dyslexic students that MAP helps, it is of utmost importance that it continually evaluates its intervention programme. This is so that it is able to understand its impact on the population it serves, provide valuable information to parents and other stakeholders about the strengths and limitations of its intervention programme, improve on the quality of the intervention it delivers and increase the DAS' contribution to evidence based knowledge to the field.

There are several ways to evaluate an intervention programme. One of the most obvious ways include evaluating the amount of progress students make after receiving a period of intervention, which, in this case, may be quantified by literacy measures or school grades. Other forms of evaluation may include demonstrating the quality of its content and delivery of intervention as well as gathering the views of those who have received the intervention.

PROGRESS OF STUDENTS IN THE FIRST YEAR IN MAP

Background: Annual Testing

MAP psychologists have been conducting annual reviews of MAP students' reading and spelling skills at the end of the each calendar year since 2003. The purpose of these reviews was to determine MAP students' reading and spelling skills as they received intervention.

The focus of the review was placed on reading and spelling skills as basic reading and spelling tests were deemed to be fairly quick measures for students to take and that improvements in reading and spelling skills were natural outcomes of MAP's multisensory phonics-based teaching.

Procedure

To investigate the effects of intervention, the first year of MAP students' progress was closely looked at. The data came from MAP's records of student profiles from 2003 to 2009. Given the varied nature of the dataset (i.e., different students taking different cognitive and literacy tests or different versions of tests), it was necessary to focus on a sample of a group of students within the MAP population whose profiles come from the same tests and participated in annual testing over the first year of intervention. A sample of 202 students was used in this analysis.

1. Significant gains made in first year in reading and spelling

MAP students were found to make significant progress in the first year of their intervention. This is impressive given that the measures were norm-referenced and therefore meant that MAP students were not only improving in their absolute reading and spelling levels (i.e. able to read and spell more words), they were also closing gaps in these skills compared to their typically reading peers.

These results are consistent with the findings by Chia and Houghton (2011) that showed gains in reading following one year of OG based instruction. Further, our current results are an improvement given that we included a larger number of dyslexic students compared to Chia and Houghton's (2011) study. Secondly, we showed improvements in standard scores instead of showing age equivalent gains in reading. Thirdly, while Chia and Houghton (2011) focused primarily in reading measures, we demonstrated gains in spelling standard scores as well.

In all, MAP students demonstrate commendable reading and spelling progress after one year of intervention within a large scale phonics-based intervention programme. These findings add to the evidence-based knowledge in the dyslexia field.

2. Significant reading and spelling gains are related to age

We also found that the younger students were at admission into MAP, the better their progress in both reading and spelling. In particular, it appears that the greatest gains were made by those in Primary 1. The finding that a younger age of beginning intervention is associated with higher reading and spelling gains is consistent with evidence showing that early intervention results in better outcomes (Ehri, Nunes, Stahl, & Willows, 2001).

Furthermore, it was interesting to note that variables such as verbal, non-verbal, spatial and phonological skills were not related to reading and spelling gains. This suggests that MAP works for those in the programme regardless of certain cognitive

or phonological factors. These findings collectively provide greater insight into how individual differences play a part in intervention and have important implications for practice.

3. More gains made by those who have poorer reading and spelling scores

It was found that MAP students whose reading and spelling scores were lower at beginning of intervention tended to make more progress than those who entered with higher scores. That said however, students with higher reading and spelling scores at the beginning of intervention still show reliable, albeit lesser gains. Taken together, these findings indicate that students with lower baseline reading and spelling scores may have more room for growth and reduce individual differences in literacy skills. Conversely, students with higher baseline scores may be already performing at optimal levels and a more intensive intervention may be needed to drive additional gains.

As such, it is clear overall that MAP demonstrates significant reading and spelling norm-referenced gains in the first year of intervention and these gains are strongly related to age and the literacy levels at which students enter the programme. These provide greater impetus to direct more efforts to reach out to struggling readers as early as possible.

VIEWS OF THOSE WHO HAVE RECEIVED THE INTERVENTION

Parent and student feedback on student progress can also be sought to demonstrate the level of impact it has on the student's literacy progress, learning attitudes as well as self esteem levels. Some of the views of students who have received intervention at DAS include the following:

Lim Kimm Aerin - DAS Alumni Student (FACETS 2014, Vol. 2, pg. 64)

"I enjoyed my specialist literacy intervention classes immensely. My classmates were always so energetic and participative as we learned to read and write during lessons. I also loved my teacher, who was extremely patient, encouraging and understanding towards all her students. To inspire us, we were introduced to the famous figures that had overcome dyslexia to excel in their respective areas of expertise and their pictures along with their achievements were pasted all around the classroom walls. In fact, I was filled with sadness and reluctance when I had to graduate a few months later."

**Teo Heng Soon - Winner of Excellence in Dance and Volunteerism in 2014
(FACETS 2014, Vol. 2, pg. 74)**

“In Primary School, I was diagnosed with dyslexia, a condition which hampers my ability to spell and interpret words... It was a new experience for me when I entered DAS. I was with other students who were the same as me and the DAS centre in Queenstown Primary became like my second home. Like me, other students my age had extra time for their assignments, had problems remembering things, and struggled with Chinese!

At DAS, I picked up useful skills from articulating my words more accurately to answering comprehension questions. Everyone at the DAS Queenstown learning centre were amiable and warm, always there to lend a helping hand, even when it came to helping me with my money collection for a charity. My teachers consisted of Mrs Jane, Mrs Ganga and Mrs Phoebe who were very bubbly and hospitable to me and who knew how to draw the line and instill discipline in my friends and myself. I guess I felt a sense of belonging in DAS which I could not get anywhere else, and the effective lessons definitely helped me to soar in the academic arena.”

**Heng Yi Zen – Winner of Excellence in Academics and Leadership in 2014
(FACETS 2014, Vol. 2, pg. 70)**

“I joined DAS when I was in Primary 1, after my mother sent me for an assessment. Luckily for me, I managed to join DAS FengShan Centre as there was a vacancy. As I was diagnosed with dyslexia very early on it helped to mitigate difficulties my learning curve.

Before I enrolled into the DAS programme, I had already noticed that I was struggling more than my other peers at school. I had multiple problems such as skipping lines whilst reading, spelling mistakes and “atrocious” handwriting. My teachers used to say that I had doctor’s handwriting.

It was at DAS that I learned new skills and techniques that helped me to overcome some of the obstacles to learning that dyslexia had caused. My parents helped in my learning and I was able to catch up in my studies and no longer fell behind my peers.

My greatest struggle was reading aloud, skipping lines and using incorrect pronunciation was a

“It was at DAS that I learned new skills and techniques that helped me to overcome some of the obstacles to learning that dyslexia had caused.”

common occurrence. It was embarrassing, and because of that I disliked reading aloud. Back in the day, I remember sitting in the car and reading aloud to my dad before every DAS lesson. It was traumatic initially but as time went on I got better and better, eventually I enjoyed reading aloud.

It was through my Teacher Madam Aisyah that I finally grew out of my shell and learned to express myself more, build confidence and start to try out things that I had initially avoided. She constantly reminded me that dyslexia never limits your learning potential, at most it hinders your learning capability. I remember this distinct phrase "Einstein and Lee Kuan Yew had dyslexia too" it served as a reminder to me, to never limit your own possibilities."

FUTURE EFFORTS

Exploring the use of other measures

The limitations of using norm-referenced tests to determine dyslexic students' progress is that it may place them at a disadvantage in showing continual "progress" given the existing hurdle of having poorer literacy scores compared to their normal peers. The creation of curriculum based measures that may be more sensitive to the teaching provided as well as in the changes in students' own literacy growth is important. It may also be useful to consistently collect information on students' performance at school in addition to these measures.

Demonstrating high quality of content and delivery of intervention

An examination of MAP in view of these results reveals the need for the following enhancements:

- ◆ The main objective of the curriculum is to move a learner from the learning to read stage to a reading to learn stage and there is evidence that suggests that an effective early intervention programme could prevent a learner's early literacy difficulties translating into long-term deficiencies (Goswami, 2008). The findings suggest that DAS effectively enables acquisition of the early literacy skills.
- ◆ Enhancement to the programme will focus on the implementation of the *Placement-Intervention-evaluation (Ple) Matrix*, with an aim to:
 - ◇ reinforce the relationship between psychologists and educational therapists in supporting learners with dyslexia
 - ◇ respond swiftly to the needs of the learner, to ensure intervention is provided in a timely manner in the relevant areas

effectively integrate higher order skills into the programme in response to the increasing sophistication of the learner's literacy needs, following the first year of intervention.

- ◇ monitor student progress.

The MAP Quality Assurance Team recognises the importance of measuring students' progress in both a norm-referenced and criterion-referenced manner and is actively creating progress monitoring tools that closely mirror what is taught in the MAP curriculum. For instance, creating informal tests of phonological decoding, reading and spelling that are matched in difficulty level with the scope and sequence taught in MAP.

Conducting intervention studies, with comparison groups

In order to increase the rigour of evaluation, it would be important to select a subset of the MAP population and conduct randomised controlled intervention studies with comparison groups of typically developing readers.

CONCLUSION

This programme evaluation paper is one of the first of its kind in the DAS that investigates the effectiveness of MAP. It forms the first of many steps in moulding and directing the future of MAP and how it continues to improve and adapt its teaching to meet the needs of dyslexic students in the DAS. It is clear that MAP works for dyslexic students particularly those who are struggling to develop reading and spelling skills at a very young age and strengthens the DAS' mandate to continue its efforts in reaching out to young students in lower primary and preschool levels so that more students will be enabled in achieving success despite their learning differences.

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MOE-aided DAS Literacy Programme Admissions: The Admission Process

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THE ADMISSIONS PROCESS

The Dyslexia Association of Singapore (DAS) receives referrals directly from parents or the Ministry of Education (MOE), Singapore. For parent referrals, parents are required to complete a referral form and attach relevant documents such as psychological reports for processing. For MOE referrals, only a psychological report and cover letter addressed to DAS is necessary.

All referrals to DAS are sent to the MOE-aided DAS Literacy Programme (MAP) Admissions department. It ensures that all necessary documentation is present before making a decision about placement.

The admissions process is overseen by an Admissions panel of MAP specialist and educational psychologists. The Admissions panel of MAP would determine if the student has met the admissions criteria. Each referral would be looked at by at least two members of the MAP Admissions panel

ADMISSIONS CRITERIA OF MAP

Each referral is checked for the following:

- ◆ A clear statement of the diagnosis of dyslexia (or its equivalent)
- ◆ A psycho-educational assessment conducted by a registered psychologist
- ◆ A report that is valid (within three years of the assessment(s) conducted)
- ◆ Singaporean citizenship of the student or at least one parent
- ◆ Student's attendance at an MOE Primary or Secondary school

When a referral meets all of the above mentioned criteria, the student will be recommended to join MAP.

When a referral does not meet any one of the first three above mentioned criteria, an assessment to verify dyslexia may be recommended. Where the school and citizenship criteria are not met, recommendations to **DAS Specialised Educational Services (SES)** or other relevant external agencies may be suggested. With the given information, parents are the ones who make the choice as to which service is suitable for their child.

REFERRAL STATISTICS IN 2013

DAS received 1375 referrals in 2013. Of these, about 30% of them were from MOE, 20% from private or hospital based psychologists and the rest were from parents and/or teachers. The distribution of the proportions is as follows:

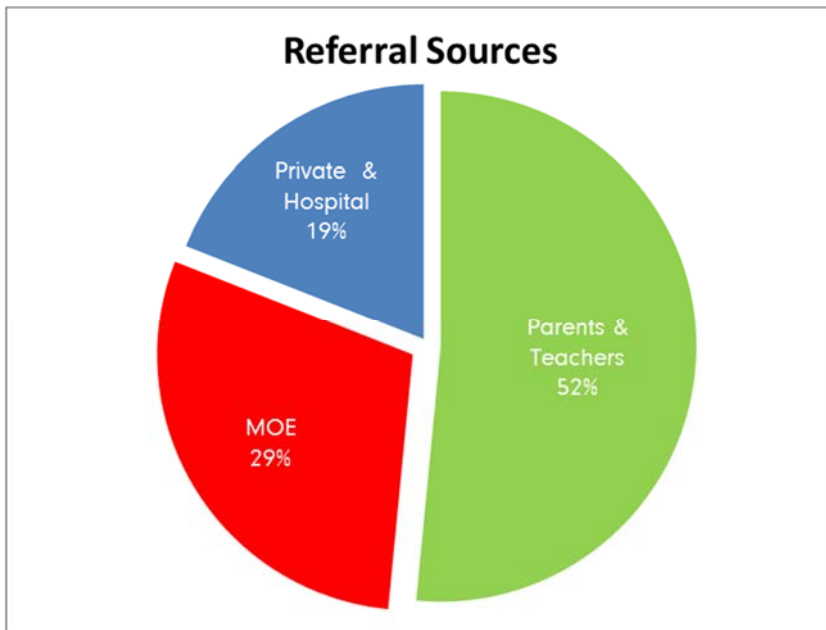


Figure 1: Referral Sources

Of the 403 MOE referrals made in 2013, the DAS accepted all of them. Of the 260 private/hospital based referrals, 23% of them underwent further assessments by MAP psychologists as they did not meet admissions criteria. Out of the 199 of the remaining private/hospital based referrals, 22% were referred to SES or other organisations due to various reasons such as having severe developmental issues and no diagnosis of dyslexia.

As such, it can be concluded that not all referrals to the DAS result in direct placement of students. The MAP Admissions panel refers about 6% of the external

referrals (i.e. MOE and private/hospital based referrals) and MAP psychologists directly take on the assessment of dyslexia for about 50% of all the referrals made to the DAS.

OVERVIEW OF ADMISSIONS INTO MAP

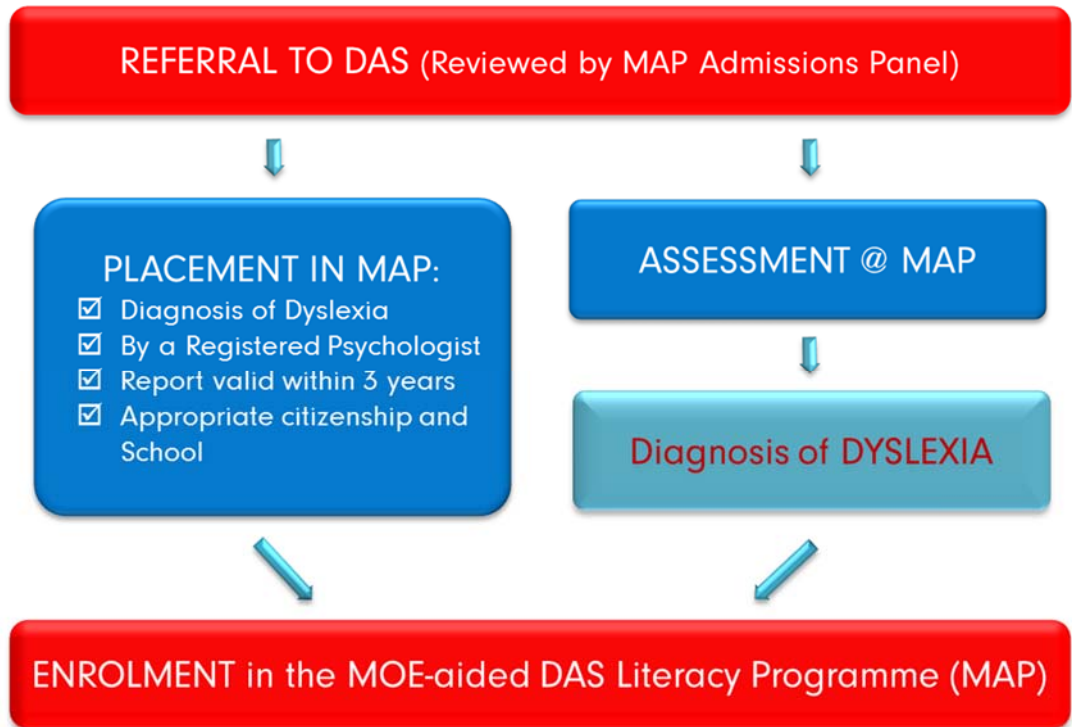


Figure 2: Flow of referrals into MAP

RE-ENTRY INTO MAP

Students who have left MAP and wish to re-enter the programme are required to submit their psychological reports and other relevant documents to Admissions. The Admissions Panel will review the referral to ensure that he meets Admissions criteria. The Admissions panel may make recommendations that the student re-enter MAP immediately or be assessed again to update his learning profile.

1. ASSESSMENTS AT MAP

MAP Specialist Psycho-educational Assessments for Dyslexia

MAP specialist and educational psychologists currently conduct thorough specialist psycho-educational assessments for dyslexia. They are guided by the definitions of special educational needs, including dyslexia, found in the Professional Practice Guidelines, commonly accepted in Singapore.

MAP specialist and educational psychologists understand that a psycho-educational assessment is a systematic process that aims to find out about a student's strengths/needs and interactions with the environment. It seeks to understand learning and developmental concerns, considering behavioural/emotional and medical issues. It significantly contributes to and is irreplaceable in educational planning: the placement, intervention, and access arrangements for a student.

MAP specialist and educational psychologists' purpose of assessing is to determine a student's profile of strengths and weaknesses and his/her learning needs in relation to the diagnosis of dyslexia.

Where there are co-occurring difficulties such as those associated with auditory/visual, attention, motor, social and emotional needs, MAP specialist and educational psychologists also evaluate these in relation to the diagnosis of dyslexia. They then make referrals to relevant professionals for follow up assessments and/or intervention.

MAP SPECIALIST AND EDUCATIONAL PSYCHOLOGISTS

MAP Specialist Psychologists

DAS is one of the few voluntary welfare organisations in Singapore that offers fresh psychology graduates the opportunity to train to be specialist psychologists. These fresh graduates are typically second upper class honours or first class honours degree holders from recognised local and overseas universities. Some of them may hold a Masters degree in related fields such as counselling.

MAP specialist psychologists go through a period of initial training that develops their interview and assessment skills under close supervision from a MAP educational psychologist. Some of the areas that they are skilled in include the theoretical underpinnings of dyslexia, developmental issues, other specific learning differences (e.g., attention deficit hyperactivity disorder, specific language impairment), the standard administration of cognitive and literacy tests as well as

test interpretation.

After their initial training, MAP specialist psychologists are closely supervised in every assessment they undertake. They jointly make a diagnosis of the student's issues under the supervision of a MAP educational psychologist.

Beyond their initial training, MAP specialist psychologists are required to attend further training and professional development workshops and conferences to enhance their interview and assessment skills as well as update themselves in the latest information on specific learning differences. In-service training sessions and journal presentations feature strongly in their regular professional development activities. Sponsorships are also available for MAP specialist psychologists to pursue Master or PhD degrees in psychology and to attain registered status with a recognised psychological professional body.

MAP Educational Psychologists

DAS actively recruits qualified and experienced Educational Psychologists who are registered with recognised psychological professional bodies. MAP educational psychologists supervise MAP specialist psychologists in every assessment that they undertake through a comprehensive case consultation and report vetting process. They also conduct psycho-educational assessments under MAP, diagnosing dyslexia and referring other suspected issues to DAS SES International or other relevant external agencies.

THE ASSESSMENT PROCESS IN MAP

MAP specialist and educational psychologists gather information through formal standardised testing, observations and interviews so as to integrate information and make appropriate recommendations on how to support the student.

Sources of information

Some sources of information that are used in the assessment process include:

- ◆ MAP referral form
- ◆ Interviews with parents/student
- ◆ Written feedback from school teachers/ MAP Educational Therapists
- ◆ School report cards, student work samples
- ◆ Formal standardised testing
- ◆ Observations during testing

Formal standardised tests used


Formal standardised testing include the use of widely recognised cognitive tests such as the Wechsler Intelligence Scale for Children – 4th Edition (WISC-IV), Differential Ability Scales – 2nd Edition (DAS-II) and British Ability Scales – 3rd Edition (BAS-3).

Literacy tests such as the Wechsler Individual Achievement Test – 3rd Edition (WIAT-III), Wechsler Objective Reading and Language Dimensions (WORLD^{Singapore}) and Singapore Writing Fluency Test (SWIFT) are typically used.


Phonological tests such as the Comprehensive Test of Phonological Processing – 2nd Edition (CTOPP-2) are frequently used.

Domains evaluated


Cognitive

- ◆ Verbal ability
 - ◆ Non-verbal/spatial ability
 - ◆ Working memory
 - ◆ Processing speed
 - ◆ Phonological processing
 - ◆ Rapid naming
- 
- Tested

Literacy

- ◆ Reading (Single word, comprehension, fluency)
 - ◆ Phonological Decoding
 - ◆ Spelling & Writing
- 
- Tested

Behaviour

- ◆ Attention span
 - ◆ Activity levels, impulsivity
 - ◆ Gross motor coordination/sequencing/planning
 - ◆ Fine motor difficulties such as handwriting issues
 - ◆ Sensory issues/rigidities
 - ◆ Physical concerns (auditory, visual difficulties)
- 
- Observed / Interviewed

Socio-emotional well being

- ◆ Frustration
- ◆ Self esteem
- ◆ Defiance/non-compliance
- ◆ Depression/anxiety
- ◆ Social Interaction

} Observed /
Interviewed

FRAMEWORK FOR INTEGRATING INFORMATION

MAP specialist and educational psychologists integrate information using Morton & Frith's (1995) causal modeling framework to determine the student's need for educational support. This framework allows the consideration of protective and risk factors across biological, cognitive and behavioural levels and how they interact with each other and with environmental factors.

The framework helps MAP specialist and educational psychologists understand that what one observes at a behavioural level is merely what one sees as a result of processes occurring at a cognitive level and in turn these cognitive processes are subserved by biological factors such as genes and brain activation. And all of these are influenced by the environment where teaching, language exposure, stimulation, cultural expectations exert changes on how genes are expressed, how thought processes are shaped and how behaviour is modified. Above all, individual variation/differences are also taken into consideration.

This framework allows MAP specialist and educational psychologists to take into account a student's personal strengths and difficulties within the context of his/her environment according to the definition of dyslexia and to make appropriate recommendations for the educational support of the student.

MAP Diagnoses

MAP specialist and educational psychologists are trained to diagnose dyslexia. During the course of the assessment process, other issues may surface. These issues may include language, social, emotional, behavioural and motor issues. These may co-occur with dyslexia or occur in isolation, affecting the student's learning. Where there are other issues, MAP specialist and educational psychologists make relevant referrals to DAS SES Assessments or other relevant external agencies.

A sample of the distribution of MAP diagnoses from a period of January to September 2013 is depicted in the following pie chart. The pie chart illustrates that

after MAP assessments are carried out, approximately 35% of referrals are referred to SES or other organisations that would better address their learning needs, where relevant. About 65% of assessments by MAP educational and specialist psychologists end in referrals to MAP.

Distribution of Diagnoses for MAP Assessments

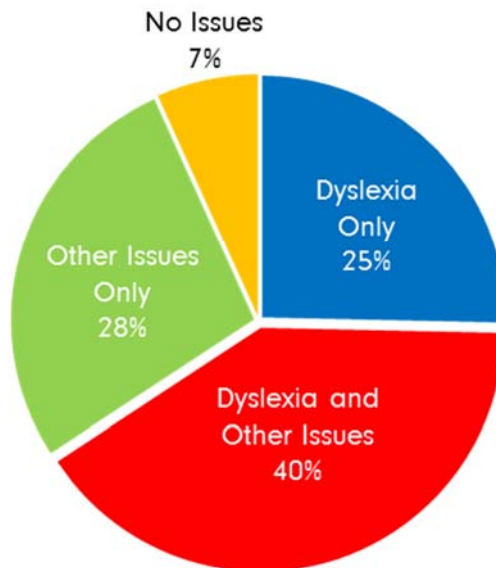


Figure 3: Distribution of diagnosis for MAP assessments

2. THE MAP MATRIX

Introduction to the Matrix

The matrix has been designed to assist in the identification of what components work best with each unique learner and research clearly demonstrates that "[p]rograms that systematically integrate multiple-focused interventions are considered the most effective" (Shaywitz et. al., 2008, p.466). The Matrix contains the full range of the MAP curriculum and based on the student profile, derived from the psychological assessment(s), assists the educational therapists to define the needs of the learners by targeting specific knowledge and skills. And by doing so, it also encourages the educational therapists to be mindful of the subsequent stages for the child and to be more aware of the progress (or the lack of) that the students make.

The Matrix therefore represents the three main functions within the MAP programme:

- a. Admissions
 - ◆ Placement of students within the programme
 - ◆ Placement of students within a group
- b. Curriculum
 - ◆ Intervention that students will receive
 - ◆ Identification of appropriate learning components
- c. Quality Assurance
 - ◆ Evaluation of student progress
 - ◆ Effectiveness of programme and instruction

Objectives

The introduction of the Matrix into MAP also aims to satisfy the following objectives:

- a. reinforce the relationship between psychologists and educational therapists in supporting learners with dyslexia
- b. respond swiftly to the needs of the learner, to ensure intervention is provided in a timely manner in the relevant areas
- c. effectively integrate higher order skills into the programme in response to the increasing sophistication of the learner's literacy needs, following the first year of intervention.
- d. Monitor student progress

3. THE MATRIX - BANDING

Purpose of Banding

Once the Admissions panel determines the student to be suitable for MAP, the student's learning profile would be further analysed to determine and assign an initial banding for his educational placement within the MAP curriculum. This initial banding is worked out by the Admissions panel with the information from the student's psychological report in accordance to what is taught in the MAP curriculum.

The purpose of this banding is to ensure that:

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

Banding criteria

Upon entry into MAP, the students are grouped in three educational bands A to C. Band A covers emergent literacy skills and students who are assigned to be in this band typically have language or cognitive weaknesses that co-occur with their dyslexia. Band B covers functional literacy skills and students who are placed in this band would likely have fairly developed language skills (e.g., verbal scores above 80) but significant basic literacy difficulties (reading and spelling scores less than 80). Band C covers functional to advanced literacy skills and students who are placed in this band would likely have fairly developed language skills and some functional literacy skills but continue to struggle with reading fluency, reading comprehension and composition writing.

MAP Admissions has put into operation a through system which begins with a child's entry into the programme to the relevance of the learning and teaching strategies that are implemented, setting in motion a programme that is in accordance to the needs of each and every learner.

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MOE-aided DAS Literacy Programme: Curriculum

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1. MAP CURRICULUM

The MAP curriculum offers individualised lessons taught in accordance to the Orton-Gillingham principles (Ritchey & Goeke, 2006; Rose & Zirkel, 2007) and modified in view of institutional and funding limitations. According to the PPG (2011, p.37) and the National Reading Panel, an appropriate literacy programme should include the following components: phonemic awareness, phonics, fluency, vocabulary and comprehension. Further, the Rose Report too elaborates on what constitutes an appropriate literacy programme. The MAP curriculum therefore follows Singaporean, US and UK guidelines for good practice.

The MAP integrated curriculum targets to cater to the various learner profiles, which include the younger and older students, and covers these components in two hours every week. Most significantly:

“...there is often a tendency to search for the one (magical) program that will address all struggling readers' difficulties. Current knowledge supports several types of intervention programmes as effective. Evidence is not yet available that would allow the selection of one specific program over others or to support the choice of an individual program that would be specifically more beneficial to particular groups of dyslexic readers.”

(Shaywitz et al., 2008, p.463)

The MAP integrated curriculum makes reference to a range of programmes and strategies in order to support the development and improvement of the learners.

Phonemic Awareness and Phonics

Research shows that phonics is a crucial aspect of specialist remediation, it is axiomatic and cannot be excluded and there have been many developments with regards to phonics instruction. DAS reviewed its educational policy on its phonics curriculum (also known as the Essential Literacy Approach) in 2009 and the current phonics curriculum grid, also referred to as the Suggested Scope and Sequence, reflects these developments.

Fluency and comprehension

While instructional support for dyslexics has traditionally focused on improving single word decoding skills and overall reading accuracy, there has been an increase in the recognition of fluency as crucial for efficient reading (Shaywitz et al., 2008). Furthermore, "the consistent improvement in phonologically based word attack and decoding skills has not always generalised to accurate, fluent text reading or adequate comprehension, the ultimate goal of all reading intervention" (Shaywitz et al., 2008, p.463). DAS and MAP recognise this and emphasise both accuracy and fluency needs.

Vocabulary

Beyond phonics, the MAP curriculum explicitly emphasises vocabulary development through sight and high frequency word instructions, as well as through oracy, reading, writing and morphology instructions. As many Singaporean learners with dyslexia are exposed to more than one language, their competence in either language is at times compromised, leading to uncertainty regarding both the quantity and quality of their English language exposure. This makes vocabulary instruction vital.

Writing Curriculum

The writing curriculum was developed to suit the varying needs of our students and it comes along with the writing packs that have been developed meaningfully to ensure that the writing lessons had clear and specific objectives to prepare the students to write about specific topics. The writing framework adopted is the process genre approach whereby the process of writing does not only emphasise on the linguistic skills such as planning, drafting, revising and editing, it also stresses upon the importance of linguistic knowledge, such as knowledge about grammar and text structure that are taught explicitly to students. These concrete reminders of critical steps provide students with a structure that prompts or encourages them as they work towards developing a written product. Additionally, such a process also enables students to systemically acquire a meta-linguistic awareness of the English

Language which in turn, empowers them to manipulate information and accomplish different purposes through writing. Invariably, these plans of action were encapsulations of the procedures that skilled writers use when they write (e.g., Englert, Raphael, Anderson, Anthony, & Stevens, 1991; Graham & Harris, 1989b).

One of the key writing instructions that has been weaved into the writing curriculum across the different levels includes devoting some time to engage the students in planned and purposeful brainstorming activities to help stimulate their thinking as well as to organise writing information before they embark on their actual writing tasks because engaging in meaningful dialogue and discussion can become a central construct in the development of literacy (Kucan & Beck, 1997).

Conceptual teaching

The Rose Report also makes reference to the Simple View of Reading model (Gough & Tunmer 1986), which recommends that in addition to word recognition skills, learners also need to be supported to comprehend language. And for learners moving from 'learning to read' to 'reading to learn,' their word recognition skills need to be effectively sharpened. In order to achieve this, one key area of development is pertinent - the development of stores or concepts of phonics generalisations and rules as "[k]nowledge organisation is one element that has been used to differentiate novices from experts" (Ridgeway & Dunston, 2000). DAS students are taught the grapheme-phoneme correspondences and syllabic and morphological information within concepts or stores for learners to cognitively classify their phonics knowledge. The revised scope and sequence of the MAP phonics curriculum stresses the importance of establishing these stores.

Localisation of curriculum

"An effective teaching and learning environment must be inclusive, and thus requires the use of instructional materials and classroom practices which reflect the diversity of cultures and life experiences that students deal with everyday at school and in their communities." (Ndura 2004, p.144). As Ndura explains, stereotypes, for example, emphasise the image of poverty and associate it with a country or turn a nation into a tourist attraction or as being exotic. The danger then of using such materials is that the learner develops a skewed perception of himself and others. Therefore, MAP curriculum and resources were localised to better benefit the Singaporean learners.

“Research shows that phonics is a crucial aspect of specialist remediation.”

For instance, some phonograms and concepts were

either removed or shifted from their original positions in the ELA scope and sequence. The phonetic word list, an important resource for educators, has also been amended to be more reflective of the local experience and vocabulary. In addition, the ELA Teaching Resources, a resource pack for teachers, was created to ensure that the context remains relevant to the learners and the teaching materials are now more localised, and therefore accessible, to our local students.

Assistive Technology

As studies have shown that the use of technology increases students' self-esteem and motivation to learn because they are given the "tools to better perform a given task that truly reflect their knowledge and skills" (New technologies and applications for special education 1996, 4), the MAP Curriculum infuses assistive technology into the lessons as a complementary teaching approach to enhance students' academic success and independence as well as to personalise lessons and skills enhancement to each learner. Consequently, records on each learner's performance during lessons are readily maintained. It also encourages learning and enables learners to become familiar with a future strategy and life skill while improving their literacy skills.

The ultimate aim and endgame of the educational support given is to empower and enable students to cope with literacy.

2. MAP EDUCATIONAL APPROACH

APIE Cycle

The Assessment, Planning, Implementation and Evaluation (APIE) cycle is a systematic manner of approaching intervention programmes for students with learning difficulties and is defined as "the process of gathering information for the purpose of making a decision" (McLaughlin & Lewis 2005, p.3).

Further, Poon, Khaw and Li (2008) state that the:

"... APIE is a linked system of support. Each component is connected to the next and the successful implementation of one depends on the application of the previous step. When applied within our context of special needs support, the planning of an intervention programme serving the special needs of a student should not be a one-off event but rather be a cyclical process where sufficient information from each component informs the next stage of action, further assessment and planning." (p.2)

Various educational documents and materials, such as the scheme of work and educational targets, have been developed to ensure that DAS educational therapists commit to this cycle.

Principles of effective instruction

The Orton-Gillingham Approach is based on key principles, which aid in ensuring that the instruction meets the criteria of being "focused, intense, systematic and explicit" (Shaywitz et al., 2008, p.463) and it also mirrors the Rose Report on principles of effective instruction:

OG Principles (TLP)	The Rose Report (p.13-15)
Language-based	Phonological skills, systematic phonic structure
Cognitive (conceptual teaching)	Encouraging generalisation
Structures, Sequential, & Cumulative	Highly structured, systematic allowing time for reinforcement, and cumulative learning
Diagnostic & Prescriptive	Personalised learning, 'little and often,' Small group or 1-1
Simultaneously multi sensory	Using graphic representation
Emotionally sound	Building learner's confidence

Figure 1: Comparison of OG principles with Rose Report's Principles

Intensive remediation (IR)

The MAP programme acknowledges that some children need more intensive support and IR provides educators with the platform to apply to a multidisciplinary panel, seeking a more personalised instruction programme. This is in-line with the Response to Intervention approach, and is an accommodation provided to specific students following the close "monitoring [of] the progress of children in receipt of a given curriculum" (Snowling 2012, p.5) and Wave 3 in the Rose Report:

"This is for those children who require the personalised approach of a programme that is tailored to their specific, often severe, difficulties. It is usually taught as a one to one programme by a teacher or a member of the support staff who has not undertaken some additional training for teaching children with reading difficulties." (p.60)

The IR panel will review IR students every six months, aiming to reintegrate them into the main programme.

Constructivist theory of teaching

MAP's approach to instruction requires learning and teaching to be interactive and constructivist. We emphasise active and participative learning and lessons and instructions are student centric.

To promote 'thinking teachers,' a more flexible phonics curriculum in the form of the 'suggested' phonics scope and sequence is in use, calling attention to the fact that the order provided is merely a suggestion. To mirror this flexibility and the experiential approach to the course design, educational therapists will be encouraged to pursue their own interests by identifying their preferred teaching tools such as their preferred phonics programmes, and create their own resources for their lessons.

3. THE MAP MATRIX - INTERVENTION COMPONENTS

As mentioned previously, the Matrix provides educational therapists with clarity on what components need to be addressed based on what has been identified as the learner's profile based on the psychological assessments and for every Band - A,B and C, the components that are most urgently required in intervention and would most likely lead to progress are stated. All educational therapists are required to identify and plan for the specifics within the range of possibilities for each component and draw up educational targets for the learner. As such, MAP curriculum, in view of its content and delivery, ensures that the intervention programme is current and suitable for the differing profiles of learners that it provides intervention for.

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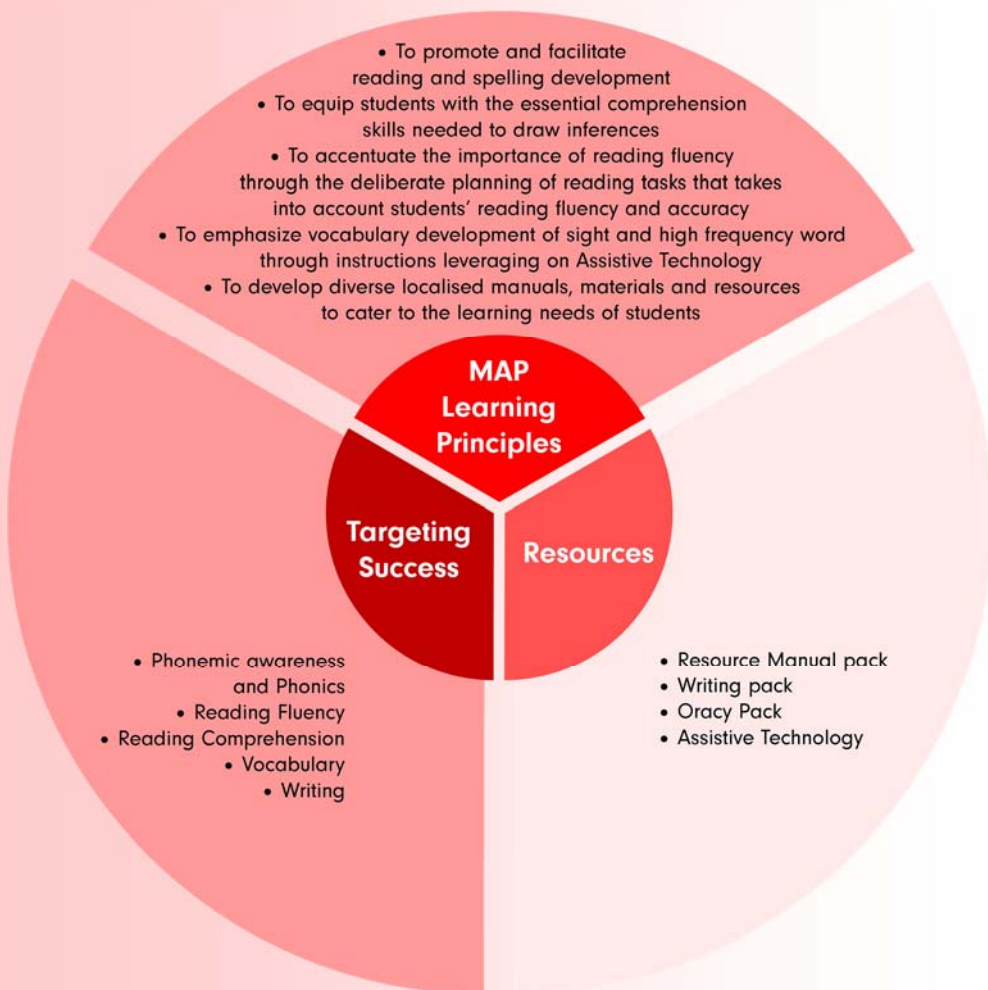
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MOE-aided DAS Literacy Programme MAP

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

Curriculum Framework - Map provides a comprehensive and quality curriculum to support dyslexic students facing literacy challenges.



MOE-aided DAS Literacy Programme: Quality Assurance

Geetha Shantha Ram¹ and Sujatha Nair²

1. Director of MOE-aided DAS Literacy Programme & Staff Professional Development

2. Assistant Director, Quality Assurance

Dyslexia Association of Singapore

1. MAP EDUCATORS

"The quality of an education system cannot exceed the quality of its teachers' is an obvious truth, which applies to the assessment and teaching of learners of any age who are dyslexic." (Rose, 2009, p.15) and DAS recognises that "[i]t is important to develop high quality interventions for children with literacy and dyslexic difficulties and to implement them thoroughly. This will require well trained, knowledgeable teachers and support staff." (Rose, 2009, p.1)

Teacher Training

Being a recognised teacher training organisation in the field of specialist education, DAS is one of the educational institutions in Singapore that offers fresh graduates and mid-career professionals the opportunity to train to be specialist educational therapists through their employment. Consequently, inexperienced staff are trained and developed into skilled practitioners through initial training. Not surprisingly, DAS would like their educational therapists to be better equipped to maneuver themselves through the demands of the local education system, their chosen field and profession and of course, DAS clients. To achieve this, educational therapists would not only need to be skilled practitioners, they need to be critical thinkers and lifelong learners (Biggs, 1996; Williams & Burden, 1997; Fry, Ketteridge & Marshall, 2008;

“The quality of an education system cannot exceed the quality of its teachers' is an obvious truth, which applies to the assessment and teaching of learners of any age who are dyslexic.”

Higgs & McCarthy, 2005), having developed their intellectual abilities as well as their ability to apply knowledge gained to different situations through the learning activities designed for the course. Therefore, beyond initial training, educators are required to attend further training and sponsorships are also available for higher education pursuits.

This is also in-line with suggestions made in the Rose Report regarding teacher training:

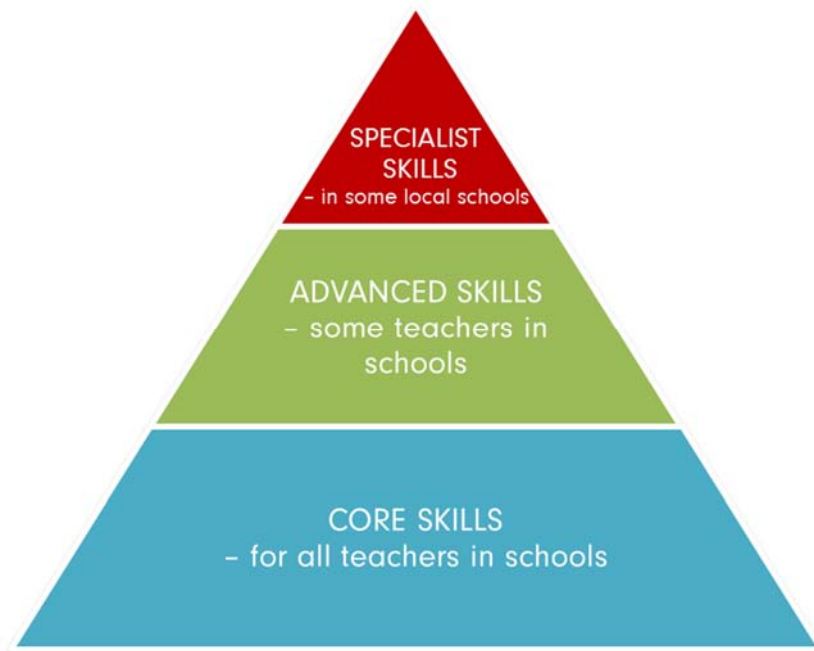


Figure 7: Taken from Rose 2009, p.16

And while the programme identified for the learner is crucial, the DAS is confident that the quality of its educational therapists contributes to the overall effectiveness of the programme, echoing Torgesen when he comments that "... given the right level of intensity and teacher skill, it may be possible to obtain these rates of growth using a variety of approaches to direct instruction in reading" (Torgesen, 2006, p.13).

Quality Assurance Audits (DAS QAA)

DAS Quality Assurance Framework and QAAs are significant for several reasons and have been implemented to meet the following requirements:

- ◆ to satisfy our key stake holders of the standards we promise and deliver as a part of our service
- ◆ to motivate and promote good practices amongst staff
- ◆ to provide a platform to recognise excellent staff performance and contribution, and ongoing, continuous dialogue (rather than a annual exercise)
- ◆ to serve as a mechanism to improve training and support

Evaluation tools include the professional e-portfolio, surveys, feedback forms as well as learner performance against the educational targets set for the learner. By ensuring that the training, key performance indicators and evaluation tools are aligned, MAP ensures that the objectives mentioned above are met.

2. THE MAP MATRIX - PROGRESS MONITORING

In order to ensure that students' progress is at the forefront of educational therapists' efforts, the Matrix, in its identification of the incremental progress of the learner, will alert an educational therapist in the absence of progress as the learner will not be transferring to the next levels as expected.

Together with the educational therapists, the MAP Educational Advisors will be monitoring student progress in order to support educational therapists and the learners further. With the QAA framework and the Matrix, MAP is highly sensitive to the service that it provides to students with dyslexia

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ABOUT THE AUTHORS



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Geetha Shantha Ram is the Director of the MOE-aided DAS Literacy Programme (MAP) and has led curriculum enhancements for DAS through the Essential Literacy Approach and the current integrated curriculum. Formerly, the Assistant Director of the DAS Academy, Geetha trained Allied educators, parents and other professionals and continues to present at conferences, most recently at the 2014 International Dyslexia Association Conference. Geetha has a Masters in English (NUS) and a Post Graduate Certificate in Learning and Teaching in Higher Education (Distinction) (LMU) and with over 10 years of experience supporting children and adults in the area of dyslexia, Geetha constantly aspires to provide a quality service to dyslexics that searches for and realises their true potential and provides them with a view to appreciate their own unique gifts.



DR ADAM OEI

Lecturer—DAS Academy

Dr Adam Oei has previously worked as a psychologist at DAS and Ministry of Education, Singapore. He has extensive experience in working with children of various special educational needs (e.g., dyslexia, ADHD, social emotional difficulties). He graduated with a Bachelor of Arts Psychology (Hons) from Murdoch University, Australia. At the postgraduate level, Adam is a cognitive and experimental psychologist by training and he has completed his PhD in Psychology at Nanyang Technological University. His research interest is in neuroplasticity as well as how human cognition and performance can be improved with various means. Adam's research has been presented and published in international conferences and various peer-reviewed journals respectively. His research has also been featured in local as well as foreign press.



LOIS LIM

Assistant Director, Admissions, MAP

Lois has worked at DAS since 2005 as a psychologist. She graduated with a Bachelor of Social Sciences (2nd upper honours) from the National University of Singapore and later with a Master of Arts in Applied Psychology from the National Institute of Education, Nanyang Technological University. In addition to her interest in specific learning difficulties, she has developed a specialisation in the assessment of dyslexia and is actively involved in the training and supervision of psychologists at the DAS as well as in enhancing DAS' intervention efforts.



SERENA TAN ABDULLAH

Curriculum Development & Implementation, MAP

Serena Abdullah is the Assistant Director of the MOE-aided DAS Literacy Programme (MAP) and is currently overseeing the development and the implementation of the Integrated Curriculum at DAS. She is also a Senior Educational Therapist who enjoys working and teaching children with learning difficulties. Her love and passion for teaching has led her to continuously seek new and innovative teaching methods to bring out the potential and self-confidence in her learners. She graduated with a Masters in Education (Curriculum and Teaching) from NTU/NIE and has obtained a Cambridge International Diploma for Teachers and Trainers. She hopes to continue to enhance the Curriculum to ensure that learners from diverse backgrounds or with varying learning needs benefit and learn effectively in class.



SUJATHA NAIR

Assistant Director, Quality Assurance, MAP

Sujatha Nair has a Bachelor of Business in Accountancy (RMIT) and a Diploma in Management Studies (SIM). She also has a Cambridge International Diploma for Teachers and Trainers (Dyslexia). She joined DAS in 2006 as an Educational Therapist and became the Centre Manager of Bishan Learning Centre in 2008. In 2009, she moved on to open and manage Jurong Point Learning Centre and under her management this learning centre grew to become the 2nd largest DAS learning centre. In 2014, she took on the post of Assistant Director of the DAS MOE-aided Literacy Programme (MAP) and she is overseeing the Quality Assurance division. She is currently taking her Masters of Education from University of Adelaide. Sujatha is also a Senior Educational Therapist and an Educational Advisor and she provides guidance and support to new Educational Therapists. She guides and trains these new Educational Therapists to ensure that lessons that are delivered are of the best quality.

Specialised Educational Services

UNLOCKING POTENTIAL

CHINESE PROGRAMME

The aim of the programme is to help students with dyslexia become independent, inquisitive learners in the Chinese language.

There are many difficulties a child with dyslexia can face when learning Chinese such as being confused with characters that look similar like 犬 'dog' and 太 'more', characters that sound alike such as 身 'body' and 生 'grow' and characters that are related in meaning such as 校 with 学 where the two put together is the word school (学校).

OUR APPROACH

The SES Chinese programme helps to foster a 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

Comprehension and writing activities are also carried out for students who have developed good oracy skills.

Specialised Educational Services

Chinese Programme

Kong Yun Rui

Chinese Programme Manager

Dyslexia Association of Singapore

BACKGROUND OF PROGRAMME

Chinese is a pictorial and symbolic language with meanings and sounds represented by strokes and strokes patterns. As such, in carrying out remediation, it is vital that students are brought to greater awareness of the orthographical structures and position of radicals within the characters. It is also necessary to help them understand how each component relates to the meaning and pronunciation of the word.

In our pilot study conducted from 2010 to 2011, children with dyslexia were weaker on measures of literacy skills such as visual-orthographic, morphological awareness and visual-motor integration skills as compared to students who were not at risk of dyslexia.

Other aspects of Chinese language processing requiring visual memory were also found to be weaker. Visual-orthographic skills refers to the strategic attempt of breaking Chinese words into parts to help them read and write. It is required to allow students to recognise Chinese characters and read them as accurately as possible. It has been observed that dyslexics were found to make more errors that are visually similar, i.e. words that have the same radicals (也, 他, 地).

Another feature of the language that presents itself as a difficulty to language learning is the presence of the large number of homophones. In other words, there are many words that share the same pronunciation but have very different meaning. This makes it harder for tasks requiring word retrieval. Poorer visual-motor integration skills also results in difficulty in producing Chinese character with strokes in the correct direction, stroke sequence and proportion of the parts of the characters.

PROGRAMME DESCRIPTION

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 overcome them. The aim of the programme is to help students become independent and inquisitive learners in the Chinese language. This is achieved by building students' interest in the language, increasing their efficiency in learning the language and increasing their verbal expressiveness through oracy.

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. Students are also taught interactively through hands-on activities, educational games and storytelling to help them relate what is taught in class to their daily lives. Other teaching resources are developed internally by the teachers and revised regularly. Reference is made to the MOE Chinese syllabus word list for the selection of words and radicals to teach.

The teachers are effectively bilingual to facilitate teaching. This allows for the teachers to be able to tap into their English vocabulary and help them to express themselves in Chinese.

EVALUATION OF PROGRAMME

The programme is constantly being evaluated for its effectiveness in its remediation for learners with dyslexia. The effectiveness of the programme is evaluated on four measures:

A. PRE AND POST ASSESSMENT

The assessment tool used is adapted from and created with reference from existing assessments from Hong Kong and Taiwan. The assessment tools from Hong Kong and Taiwan cannot be applied directly in Singapore as Chinese is a second language here while it is a first language in Hong Kong and Taiwan. In addition, the phonetic and script systems used in these countries are different from what is used in Singapore.

The use of the tool at pre-testing is to profile students for class placements. It allows for students with comparable language ability to be grouped in the same class. The purpose of doing so is for remediation to be better targeted and more effective.

There are a total of four main tests in the assessment tool and each assessment takes about one to one and a half hours. The components assessed in each test are found in the table below.

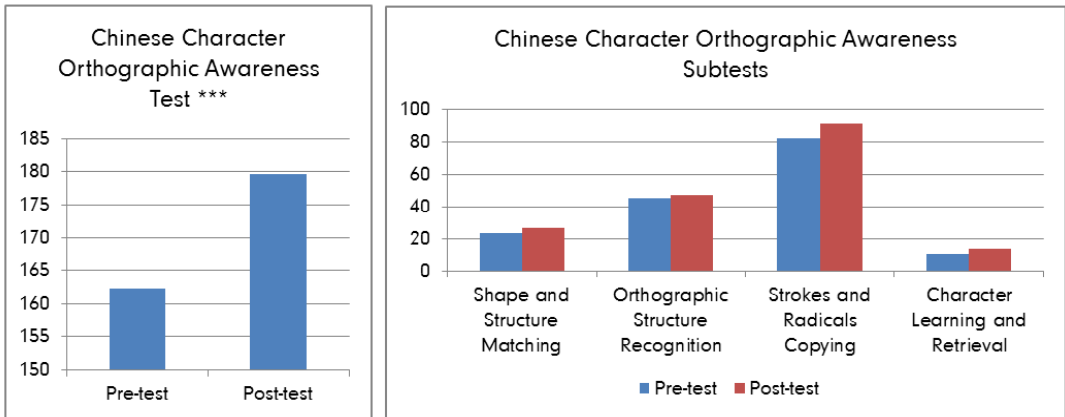
Table 1 - Components of Tests in Chinese Assessment Tool

Tests	Components Assessed
1. Chinese Character Orthographic Awareness	a. Shape and Structure Matching b. Orthographic Structure Recognition c. Strokes and Radicals Copying d. Character Learning and Retrieval
2. Chinese Character Reading Test	a. Reading of Characters b. Vocabulary Knowledge Test
3. Basic Chinese Character Reading and Writing	a. Multiple-choice Spelling b. Free Recall Spelling c. Short Passage Copying
4. Picture Sequencing and Verbal Expression	a. Picture Sequence and Description b. Freedom of Expression

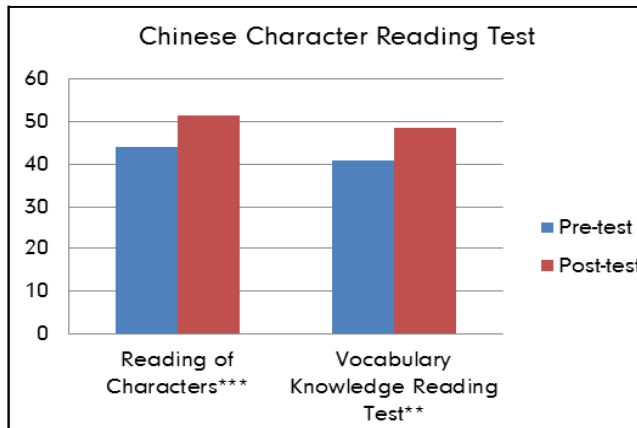
The same tool is used for post-testing after at least six months of intervention to provide reliable comparisons. The preliminary finding of the post-test result of 16 students showed a significance difference in overall Chinese literacy scores. This suggests that students' Chinese literacy skills improved significantly after intervention. (For full report, see Shen et al., 2014)

There is a significant improvement in Test 1 and Test 2. This suggests that students have gained better awareness of how characters are formed through strokes and stroke patterns, which may have helped them learn and remember an unfamiliar character better. In addition, students were also better able to form words with the characters they were required to read on the task.

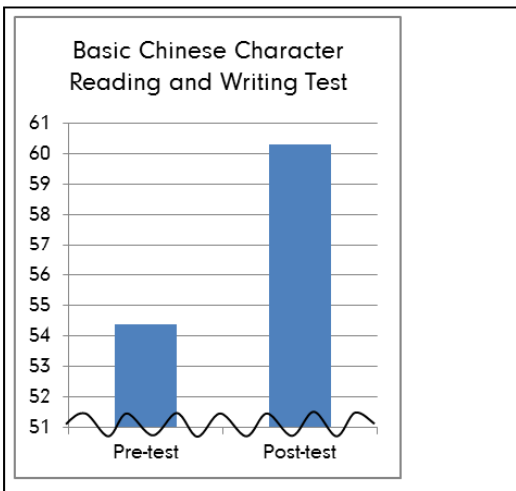
However, there are no significant results for writing and oral tests although Graph 3 and 4 show an increase in these scores for post-testing. This could be due to a small sample size, inability to apply what they have learnt or that these areas were not targeted at during remediation.



Graph 1 - Comparison of Pre-test and Post-test scores
(Test 1 - Chinese Character Orthographic Awareness Test)



Graph 2 - Comparison of Pre-test and Post-test scores
(Test 2 - Chinese Character Reading Test)



Graph 3 - Comparison of Pre-test and Post-test scores
(Test 3 - Basic Chinese Character Reading and Writing Test)

On the whole, students were found to make fewer errors after intervention. In the error analysis, a significant difference was found between phonetic-semantic errors made in the pre-test and post-test. This means that students were less likely to be confused with semantically related characters and mispronounce them due to intervention.

Table 2 - Example of errors

Visually-similar error	similarly-shaped characters same-radical characters	永 → 水 漂 → 標
Phonetically-similar error	tonal error similar articulation sound omission sound insertion	永 → /yòng/ (yǒng) 乱 → /ruàn/ (luàn) 標 → /bāo/ (biāo) 包 → /biāo/ (bāo)
Semantic error		然 → 虽 (虽然)
Visual-phonetic confusion		淳 → 亨 → /héng/
Visual-semantic confusion		淳 → 享 → 受 (享受)
Phonetic-semantic confusion		享 → 受 (享受) → /shǒu/
Visual-phonetic-semantic confusion		揉 → 柔 → 软 (柔软) → /luǎn/
Unknown error	Wild guesses or skipped	

B. SCHOOL RESULTS

- ◆ One student was awarded the Most Improvement Award in Chinese for his level.
- ◆ One student scored the second highest in his Chinese class.
- ◆ Majority of the students have shown improvement in their Chinese grades in school, especially in their oral scores.

C. PARENTS' FEEDBACK

i. Parent-Therapist Conference

- Parents have reported an increased interest in Chinese after starting classes at DAS
- Parents are generally happy with the improvement in their child has made in terms of verbal expressiveness and confidence in speaking Chinese
- Three parents have asked for longer duration of classes to 1.5 or 2 hours
- Some parents are requesting for more help beyond oracy with literacy components like comprehension and composition writing
- Parents have also asked for courses to prepare students to help them pass PSLE
- Two parents found the costs of classes too high

ii. Testimonial from Parents

My child has grown to have a greater interest and motivation to learn the Chinese language after attending classes at DAS. He has shown tremendous improvement in his spelling from failing to getting close to full marks each time. He tells me that he is able to use the strategies such as the story method that Ms See has taught him to help him remember and recognise words.

- Mdm P*, whose child has been in the programme for close to a year

My son thoroughly enjoys his DAS Chinese lessons because they approach the learning of Chinese in an entirely different way from school. The small class size is key as the teacher is able to tailor his learning to his specific dyslexic learning style (poor visual discrimination). He is able to try new words, learn new phrases in-depth without rushing through to achieve some exam deadline. This helps him enjoy Chinese as a means of communication and building relationship rather than as a meaningless memory contest. I am very grateful to Teacher Rui for she diligently updates me after every lesson - I sometimes feel that I've taken the lesson too!

- Mrs L*, whose child has been in the programme for a year

**Names withheld for confidentiality*

D. FEEDBACK FROM EDUCATIONAL THERAPISTS



Sha Lan, Senior Educational Therapist

"Most students develop a greater interest in learning the Chinese language after classes here. Progress is seen in students' oral expression and most show increasing confidence towards expressing themselves in Chinese. They are generally able to communicate their ideas using the vocabulary and sentence structures taught to them. It is also encouraging to see students actively apply the word recognition strategies they have learnt when they do not know how to write a character in their spelling tasks."



See Lay Yen, Senior Educational Therapist, former MOE Chinese Teacher

"As there is no syllabus to complete, we are able to teach according to the needs and pace of our students. The class size is also small and pupils of similar abilities are placed together, thus we are able to better attend to pupils' needs. We focus a lot on discussing word recognition strategies (their biggest weakness) with the students and getting them to apply. In school, it is sometimes difficult to bridge the gap on word recognition during curriculum time as there are many more skills to learn."

LIMITATIONS AND FUTURE DIRECTIONS

Students' views on the Chinese language have not been reflected or captured. It is vital that we gather such information to evaluate if we have been successful in meeting the objective of building the child's interest in the language. It will also serve to inform the teacher of the position of the child towards the language.

With regard to the preliminary findings from the post-assessment, the small sample size has provided valuable insights on the effectiveness of intervention. Having a larger sample size may possibly yield stronger results to the study.

Next, remediation support should look into enhancing other literacy skills such as writing as writing is required to gain mastery of the language. Writing and comprehension components should also be looked at in remediating and assessing the kids.

Even though there are improvements in orthographical awareness, morphological skills and reading, these do not seem to be translated into areas of spelling and writing as well as verbal expressiveness. An investigation into the relationship between scores on the Chinese character orthographic awareness test with reading and spelling scores may yield some evidence. Our understanding of the sub-skills that are important in development of competence in spelling and writing in Chinese remain incomplete but the programme should provide useful insights to teachers on what matters in developing literacy skills in Chinese in dyslexic learners.

However, there are no significant results for writing and oral tests although Graph 3 and 4 shows an increase in these scores for post-testing. This could be due to a small sample size, inability to apply what they have learnt or that these areas were not targeted at during remediation.

Plans are currently under development to evaluate the Chinese language skills of children with difficulties who are in the normal range of ability and do not hold a diagnosis of dyslexia. This will allow us to profile their cognitive skills and evaluate our Chinese language intervention with a control group. We predict that the structured approach adopted here for the dyslexic children may well be beneficial to all children.

“My child has grown to have a greater interest and motivation to learn the Chinese language after attending classes at the DAS. He has shown tremendous improvement in his spelling from failing to getting close to full marks each time.”

ABOUT THE AUTHOR



KONG YUN RUI

Chinese Programme Manager

Kong Yun Rui is also a Senior Educational Therapist at DAS. She graduated with a BA (Hons) in Linguistics and Multilingual Studies from Nanyang Technological University. In addition, she has also completed her post-graduation certificate in Special Education Needs with University of South Wales and has an advanced diploma in Chinese Language teaching with KLC. Her area of research interest is in bilingualism and language acquisition in children, believing that language learning opens up the horizon of a child.

Contributions: Priscillia Shen Peixin, Sha Lan and See Lay Yen

CHINESE PROGRAMME

小学华文辅助课程

The aim of the SES Chinese Programme is to help students with dyslexia become independent, inquisitive learners in the Chinese language.

Chinese as a language is more complex than English as many words can be read the same way though each word has a different meaning. The strokes in Chinese words must also be written in sequence. This complexity causes reading and writing Chinese to be very tedious for children with dyslexia.



Our Approach

The programme helps to foster your child's interest in the language through thematic-based teaching. In this way, vocabulary that is covered is relatable and can be used on a daily basis, allowing them to express themselves better in the Chinese language. Students are taught interactively through the use of stories, educational games and hands-on activities to make language learning fun and memorable. 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

Comprehension and writing activities are also carried out for students who have good oracy skills in the language.

Application is open only to primary school students. Priority will be given to students who are not exempted from Chinese.



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UNLOCKING POTENTIAL

PRESCHOOL EARLY INTERVENTION

The aim of the programme is to help preschoolers who are potentially at risk of dyslexia, or has a developmental delay in early literacy, develop skills and strategies to become confident achievers when they enter primary school.

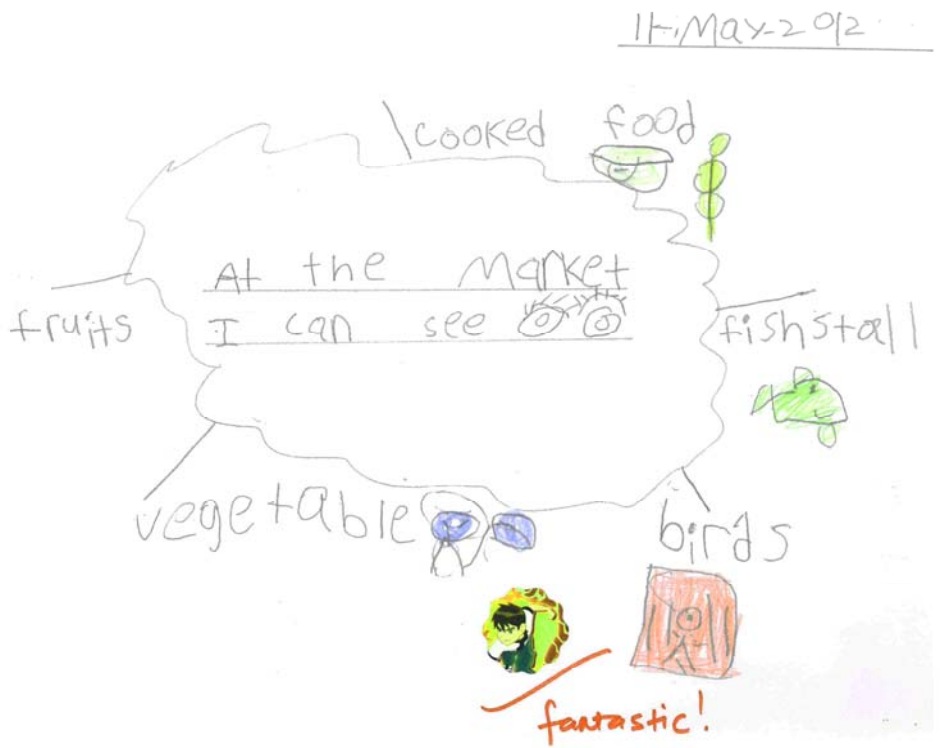
Our Approach

The SES Preschool programme helps preschoolers acquire a good foundation in alphabet knowledge and phonograms, leading up to learning sight words essential for reading. These abilities gear them towards reading and spelling readiness. In class, your child will be taught rules, facts and generalisations about the English language, enabling them to read and spell more effectively. 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
- ◆ Phonograms
- ◆ Learned Word Knowledge (e.g. said)
- ◆ Reading
- ◆ Spelling

Preschoolers will be advised to go for a Full Aged Psychological Assessment when they turn six. Children diagnosed with dyslexia has the option to continue with the MOE-aided DAS Literacy Programme.



Specialised Educational Services

Preschool Early Intervention

Wong Kah Lai

Preschool Programme Manager

Dyslexia Association of Singapore

There is now considerable evidence from research world-wide, that early intervention is the most effective approach to help children with dyslexia and other learning difficulties. Torgesen, (2001, 2014) has shown that 8 year old children need 67.5 hours of individual intervention to bring them to the level of their peers once they have fallen behind. However, evidence from studies with young children aged 4 and 5 in the UK have shown lasting benefits for early support (Fawcett et al., 2014, Nicolson et al., 1999). Moreover studies from Singapore (See & Poay, 2014) have shown that it is possible to identify pre-school children at risk of failure.

Development is a continuum. In this developmental spectrum, young children achieve their cognitive, social, emotional and physical milestones at different rate and pace.

Although there is a general guideline, in the form of attainable developmental milestones, not all children progress at the same rate nor pace arising from nature / nurture factors and issues. 'Nature' factors and/or issues refers to in-born conditions that a child is born with, while 'nurture' refers to environmental factors that stimulate and help further shape the child's developmental growth. A key issue here is home background and stimulation of language.

Literacy delay is probably one of the most common developmental problems among pre-school children. This happens when a child's language is developing in the right sequence, but at a slower rate. It could be a case of not having the language environment or stimulus, and amongst many other probable causes, a result of dyslexia.

As such, early outreach and intervention is crucial. The pre-school service at DAS aims to identify and work with children identified as "at risk of dyslexia" so as to help them achieve in Primary One through our early literacy intervention

programme. In the article below we outline the development and evaluation of a pre-school literacy programme for early intervention in Singapore

ABOUT THE PROGRAMME

This programme is recommended for children at risk of dyslexia and those with learning differences in reading and spelling in Kindergarten 1 and 2. The pre-school early literacy intervention programme framework comprises of literacy appreciation, letter knowledge, phonemic awareness, comprehension, sight words and fine motor skills acquisition within a suggested pre-school scope and sequence.

Pre-school education therapists formulate and devise an Individualised Intervention Plan (IIP) for students based on his/her specific learning needs obtained from the Pre-Informal Assessment at the beginning of the first remediation session with the therapist. No two learners are alike. In view of young learners with literacy delay, differentiated teaching is essential.

The lesson is delivered in an engaging and simultaneously multisensory manner based on the Orton-Gillingham (O-G) approach and principles. The O-G approach is a language-based approach where students are explicitly taught the rules, facts and generalisations about the English language.

SIX O-G PRINCIPLES GOVERN THE O-G APPROACH

Language based

It encompasses an awareness and appreciation of the features of the English language that includes reading, spelling, writing and learning strategies as appropriate to young learners' developmental needs.

Cognitive

It was noted that 85% of the English language can be made predictable with explicit instruction in rules and generalisations that govern its use. This tool enables young learners to read/spell more effectively.

Structured, sequential and cumulative

This is especially vital to a dyslexic learner. In order to achieve automaticity, content needs to be taught systematically in a sequential manner. Consistent review of previously taught/learned material fosters retention and enables the learning of new material to "spiral" upwards with each accumulation.

Simultaneously multisensory

Through visual, auditory, kinaesthetic and tactile activities, that builds a strong and intense memory connection, young learners are more likely to be able to "retrace" and "retrieve" the memory of what-was-taught in the previous lesson/session.

Diagnostic-prescriptive

No two learners are alike. In view of young learners with literacy delay, individualised teaching through IIP (Individualised Intervention Plan) is essential.

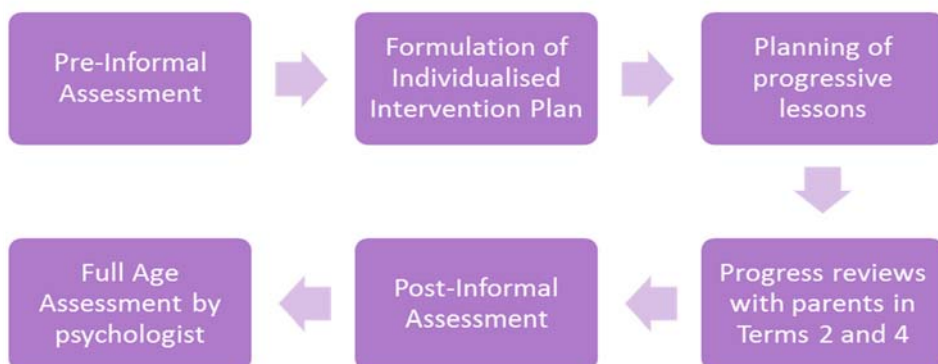
Emotionally-sound

Stress, anxiety and negative emotions can act as an affective filter that comes between learning and what-is-being-taught. Emotionally-sound delivery fosters and promotes learning and acquisition.

The programme was carried out in three tiers. Remediation by Educational Therapists and both the Preschool Screening Assessment (at point of admission into programme) and the Full Age Psychological Assessment (point of exit of the programme) by our qualified DAS psychologists. Children were grouped according to Assessment results/profiles. Each class consisted of 2 to 4 children, each having their own individualised educational plan. Children who completed the programme and were diagnosed as dyslexic may continue on with DAS in its main literacy programme at Primary One.

MEASUREMENT OF STUDENT ATTAINMENT

The process of measuring student attainment is summarised as follows: Student progress is carefully monitored through observations made during each intervention session as appropriate. Based on the diagnostic-prescriptive nature of



the O-G principle, the education therapist adjusts the lesson content for the next session by addressing the areas of uncertainty, weakness and strength. Thereby, shoring up against weaknesses in foundation concepts, addressing gaps in foundation knowledge and leveraging on student's achievement and strength, promoting further interest and progress in learning.

THE PROGRAMME AIM

To help pre-schoolers potentially at risk of dyslexia achieve school readiness through our early intervention programme.

Outcomes of/Key takeaways from Pre-school Programme

- ◆ Confidence to execute skills without fear, worry and anxiety
- ◆ Ability to self-regulate, self-motivate and self-discipline
- ◆ Ability to use literacy skills as an active tool in real time

STUDENT ACHIEVEMENT

Overview

This was based on the results of 40 bursary students whose learning progress was formally tracked since the beginning of the school year. According to research studies, if a dyslexic child is identified and given effective teaching before 7 years old, he/she may improve to a point where there is little disadvantage. After 7 years old, a sharp fall in the effectiveness of teaching interventions. After 9 years old, the effects of intervention seems to stabilise rather than remedy the relative deficit in reading skill. As such, the Preschool Programme views and celebrates the individual success of children "Assessed and no longer showing signs of dyslexia".

Success Indicators of student achievement

Success indicators were based on a child's improvement in one of five categories:

- ◆ Alphabet knowledge - able to sequence the alphabet, write lower case letters and write upper case letters
- ◆ Phonogram knowledge - letter to sound correspondence
- ◆ Learnt word knowledge - able to read learned words
- ◆ Reading - cvc, ccvc, cvcc, th, ch, and wh
- ◆ Spelling - as above

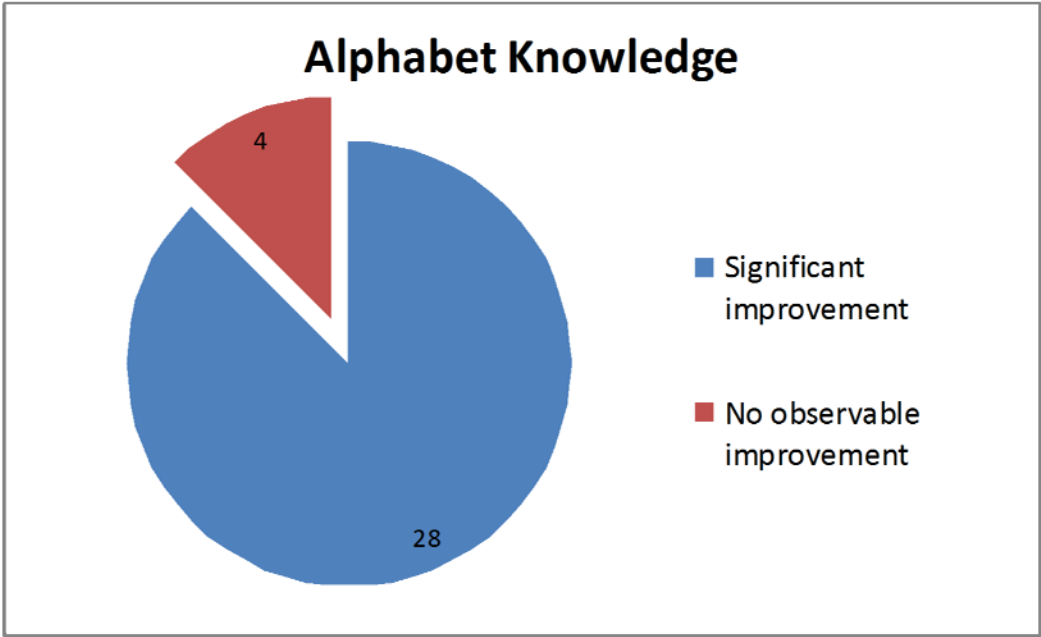


Figure 1.1 - Pie Chart of Student Improvement in Alphabet Knowledge

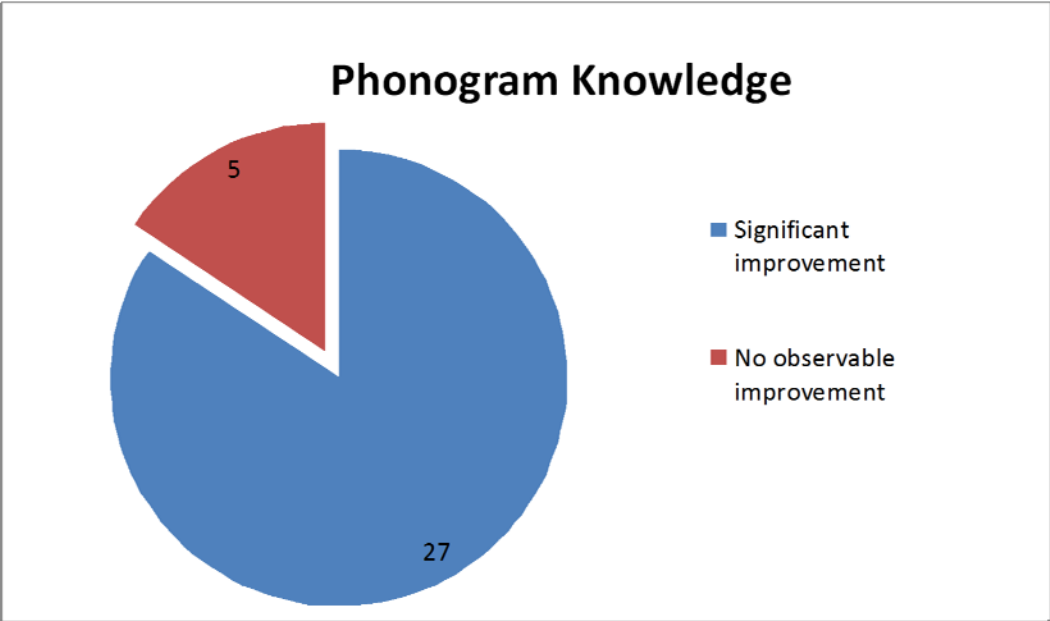


Figure 1.2 - Pie Chart of Student Improvement in Phonogram Knowledge

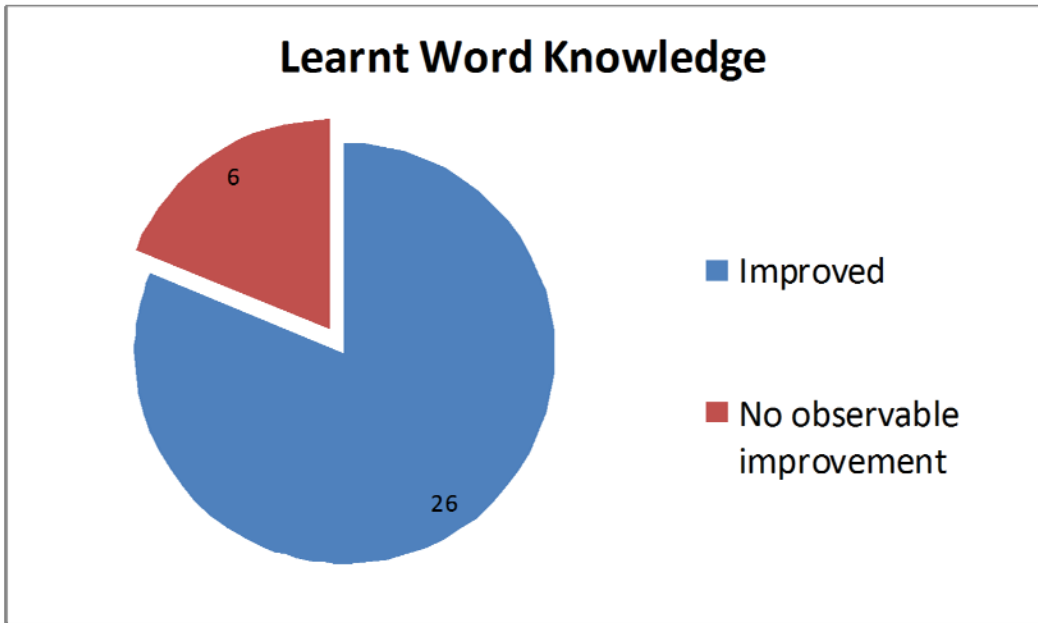


Figure 1.3 - Pie Chart of Student Improvement in Learnt Word Knowledge

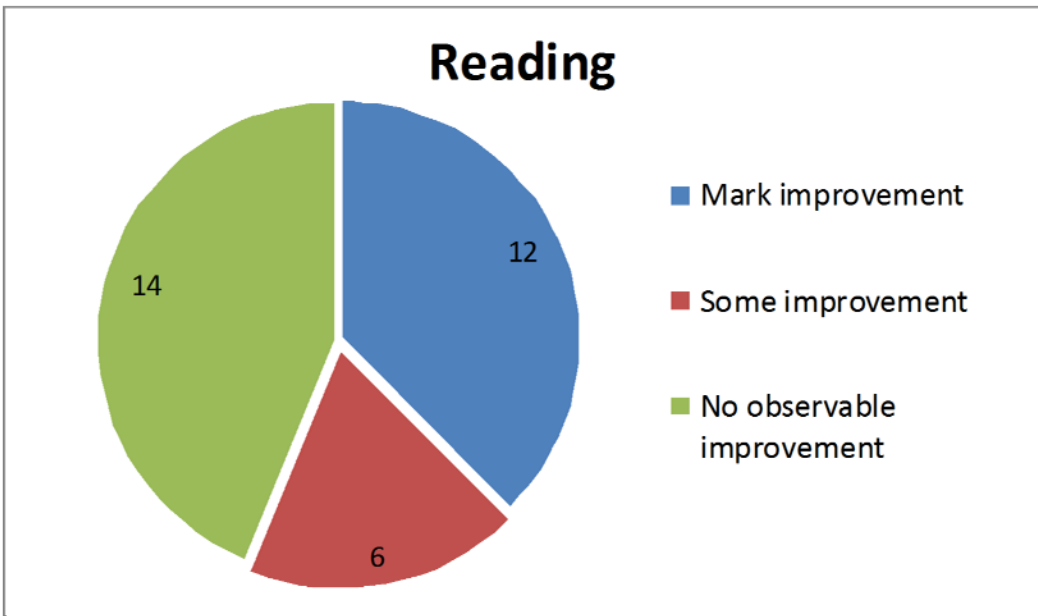


Figure 1.4 - Pie Chart of Student Improvement in Reading

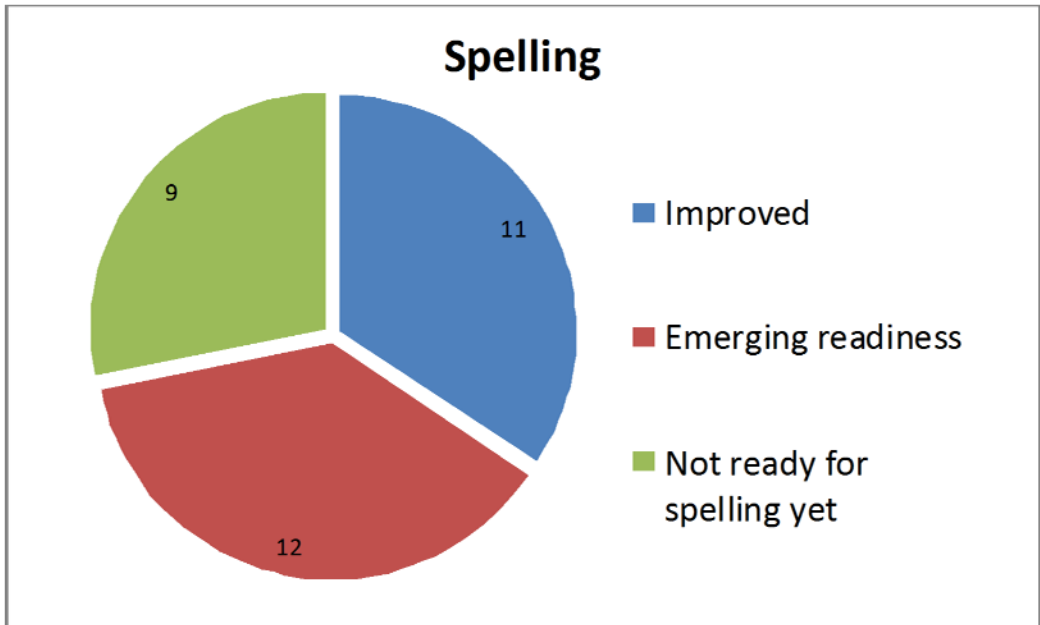


Figure 1.5 – Pie Chart of Student Improvement in Spelling

Results from the pre and post-assessment worksheets were used as the basis for comparison. A child was considered to have made an improvement if he/she achieves their Individualised Education Plan (IEP) or shows an improvement in their weak areas as listed above. Figures 1.1 to 1.5 above show the percentage of pupils showing an improvement in each aspect (statistics based only on students who have completed 20 hours or more of intervention):

Knowledge is progression based, with alphabet knowledge and phonograms being one of the cornerstones of early literacy, leading up to proficiency in reading and spelling. In early childhood education, development is viewed as a spectrum and the focus is always on **the process** and the gains along the journey of learning, not the product which is usually represented in a form of an assessment at the end. It is through **the process** that young children gain the tools and skills necessary to decipher printed text and craft writing at later stages.

As such, findings represented in Figures 1.1 to 1.5 suggested that most students had acquired a good foundation in alphabet knowledge and phonogram, leading up to learning sight words essential for reading, building a foundation towards reading and spelling readiness.

Although children may show improvement in their learning, those diagnosed as dyslexic will continue to remain on the DAS programme as they enter P1. One of the success indicators here is that we continue to enrol and diagnose dyslexic children correctly at their young age.

THE PRE-SCHOOL PROGRAMME: MOVING FORWARD INTO 2014

In the course of programme evaluation, several challenges came to light. Pre-schoolers joining our intervention classes came with the following problems.

1. Very little or a poor grasp of spoken English to begin with. This has a direct impact on our lesson delivery as English is our medium of instruction. It also impact upon children's learning through the inability to comprehend the concept taught
2. Weak fine motor skills – not deliberately targeted nor addressed through explicit teaching
3. Weak executive functioning – somewhat lacking and in need of explicit teaching of specific strategies that promote memory, and activities that stimulate memory development
4. Noticeable disparity in developmental levels e.g. Global Developmental Delay
5. Social-emotional development lagging behind their peers

In response to the above concerns, we plan to:

1. Consider incorporating a deliberate oracy element/component into our existing programme. Perhaps developing some sort of oracy package, consisting of a teacher's resource guide book, complete with picture cards and suggested activities that busy educational therapists can simply grab-and-use with students. Language is a tool for communication (Vygotsky cited in Bodrova & Leong 1996). In a pragmatic sense, the content should be contextualised to our Singaporean setting, and its lesson delivery adapt some ESL/EFL (English as a second or foreign language) approaches to expedite learning
2. Consider having fine motor skills activity integrated more firmly into our programme, executed with deliberation and purpose. Students' poor handwriting should attain a level that is close to, if not better than, their peers in readiness for P1

3. Consider equipping teachers/therapists with teaching resources necessary to carry out activities that target and foster executive functioning issues. This may include INSETs on the creative use of teaching resources
4. Course leaders should be available (alongside the SPD team) to counsel and support teachers/therapists with children who may need short term, intensive, one-to-one remediation
5. Consider blending in elements of SEL (Social Emotional Learning) into the existing preschool curriculum so that children are better equipped to meet their challenges ahead, building resilience

Prime Minister Lee Hsien Loong recently emphasised, in the news, the importance of education and the need for our children to grow up and be capable of critical and creative thinking. Our students are capable of that and more. Let us level our students' playing field through the preschool's early intervention programme.

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Sincere appreciation to all preschool teachers for their contribution towards making this programme evaluation possible. Special thanks to Lynette Ong for collating all the pre-and-post test results.

FEEDBACK ON THE PROGRAMME

2013

2013

2013

2013

2013



ABOUT THE AUTHOR



WONG KAH LAI

Preschool Programme Manager

Wong Kah Lai is the Preschool Programme Manager at DAS. An enthusiastic and passionate educator with more than twenty years' experience in the field of early childhood education, Kah Lai taught young children, mentored teachers, supported parents and caregivers in a wide range of setting, from within the classroom to community outreach, while juggling her Diploma in Early Childhood Education from Wheelock College, and subsequent Bachelor of Education in ECCE from the University of South Australia. She completed her Masters in Teaching English to Young Learners from the University of York through distance learning whilst working full time as head teacher of a bilingual kindergarten in China.

NTUC INCOME ORANGEAID FUND

Supporter of SES Preschool Programme

Through the support of NTUC Income OrangeAid Fund, DAS has been providing preschool bursaries to families in need of financial assistance since 2011. Unlike bursaries for other programmes, the OrangeAid bursary ensures that your child receives all of the necessary support at the preschool level in preparation for Primary One.

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Specialised Educational Services

UNLOCKING POTENTIAL

ESSENTIAL MATHS PROGRAMME

OUR APPROACH

SES Essential Maths Programme helps to bridge the gap between your child's ability and the mainstream syllabus by addressing areas they are weaker in. This is done through a C-R-A (Concrete-Representational-Abstract) approach. Every stage of learning ensures that the child links mathematical ideas in a progressive and cumulative way. The methodology applied constantly keeps in touch with the mainstream school math 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 word problems. Some of the more common difficulties include counting forward and backward, understanding of number relationships, place value, timetable facts and following multi-step calculations.

Specialised Educational Services

Essential Maths Programme

Dr Tim Bunn¹, Yeo Rebecca², Siti Aishah Bte Shukri² and Aishah Abdullah²

1. *Chartered Educational Psychologist*

2. *Senior Educational Therapists*

Dyslexia Association of Singapore

INTRODUCTION

The Dyslexia Association of Singapore (DAS) teaches over 3000 students in its 13 Learning Centres. All students have been identified as dyslexic. About 5 years ago, DAS decided to offer a teaching programme specially for our dyslexic students who also experienced difficulties with maths.

Students with dyslexia have specific areas of difficulty that can affect their maths performance: poor short term memory, poor working memory, poor sequencing, reversals, difficulty with reading word problems and poor comprehension and vocabulary stemming from low language ability. In mathematics, these difficulties can impede their ability to understand concepts, compute and apply what they have learned to word problems.

The Maths Programme aims to effectively support students with dyslexia who have persistent difficulties in maths, particularly in word problems, by providing dyslexia-friendly lessons while keeping in touch with the mainstream school maths syllabus. As students with dyslexia often have poor vocabulary and comprehension skills due to a late start in reading, word problems are often their biggest area of deficit. As such, the programme works on building a student's maths vocabulary, tying it to concrete manipulatives and pictorial representations. This, coupled with teaching students how to break down word problems, enables students to identify which operation to use in order to solve such questions.

PHILOSOPHY

The teaching methodology is based on the needs of the child, with a strong emphasis on concept-building, addressing areas of skill deficit.

The teaching methodology incorporates the following principles: language based, cognitive, structured, sequential and cumulative, simultaneously multisensory, diagnostic-prescriptive and emotionally sound. These principles have been shown to be effective in helping students with dyslexia understand maths concepts.

Teaching progresses in developmental stages:

1. Concrete Stage - use of tangible manipulatives
2. Representation Stage - use of pictures and 2D drawings
3. Abstract Reasoning Stage - use of symbols and word problems.

Every stage of learning ensures that the student links mathematical ideas in a progressive and cumulative way. The teaching methodology is multisensory in its delivery and allows students to gain hands on experience with maths concepts. It is imperative that a student is equipped with all the necessary prerequisite skills that he needs but may not necessarily have, in developing his mathematical skills. This would strengthen their foundations for confidence in higher-level maths, building the path towards curriculum based interventions such that the teaching methodology helps to bridge the gap between the student's maths abilities and the school mathematics syllabus.

ENTRY CRITERIA

During the first years of the programme, entry was restricted to those students who had been on the literacy programme for a year, with reading age no more than a year below chronological age, and scoring on school exam at P1-3 below 50%, at P4-6 Standard level below 35% and at Foundation level below 50%. Some students were placed on the programme from a review of their performance on schools exams, and some did an informal maths assessment.

These criteria have now been changed to be more inclusive: there is no reading age limit, and students need to have been on the DAS literacy programme. If students are passing in school exams, however, they may still not be appropriate for our programme, which is intended for students who experience significant difficulties in learning maths.

EXIT CRITERIA

Students should be expected to (1) score at least 80% on the programme's annual performance test. This figure will need to be monitored.

The student must also be able to (2) consistently achieve at least 60% in school exams for at least 3 consecutive terms.

Currently, the exit criteria has not been put in place. Students would leave the program when they have reached the end of P6.

For students who have made good progress in their Maths performance, we may need to consider graduating them using the two exit criteria.

MEASUREMENT OF PROGRESS:

A student's progress is measured in the following ways:

1. Diagnostic informal assessments to determine students' areas of strengths and weaknesses in a particular topic before teaching it.
2. Annually administered summative assessments to determine overall progress.
3. Collection of students' mathematics examinations papers and scores to determine whether progress is being transferred from classes into school.

In addition, teachers monitor students' learning through their responses to exercises and the explanations they give in class. This kind of assessment is "formative". At the end of each topic, teachers would also administer the same topical informal assessments to measure students' application of the concepts taught in the topic. Near the end of each year, a comprehensive set of topical tests is used to evaluate progress. These tests have been developed by the maths team, with some guidance from Professor Angela Fawcett and Dr Tim Bunn. One form of the test (Form B) is now complete and has been used to measure progress in October-November 2013 on all students in the programme over 6 months at that point.

It was decided that we should develop our own test because published maths tests do not cover the Singapore maths syllabus fully, and do not reflect the balance of calculation and word problems that Singaporean students face. We also wanted to be able to identify topic by topic what concepts students had learned and still needed to work on. Test B assesses 10 topics: addition, subtraction, multiplication, division, time, fractions, geometry, decimals, percentage, ratio; and covers calculations and word problems separately within each area. The test provides measures of learning on each concept. It also guides teaching as it enables therapists to show which grade level their students are working on within each topic and whether there is more to do at that level.

The nearest equivalent score on form B is a reflection of students’ performance on items/concepts that are common in both form A and form B. This measure helps to check the test-retest reliability of the intervention.

The majority of these students were at grades 4 to 6 (11).

	Initial Assessment Form A	Nearest equivalent Form B
Overall Average	66.5	82.2
Primary 1-3	60.75	84.53
Primary 4-6	69.62	80.94

The comparison between scores on Form A and the nearest equivalent scores on Form B (ie covering only the topics tackled at first assessment) shows progress within those topics. Progress for younger and older students over the nearest equivalent topics was about the same, with the younger ones making slightly more progress.

SIZE OF THE PROGRAMME

Size of the Programme	November 2013	May 2014
Number of students	94	141
Number of trained therapists	14	25
Number of currently practising therapists	7	18
Number of centres with maths resource provision	5	12

DAS ESSENTIAL MATHS RESOURCE PACK

To ensure quality in our teaching and to guide new dual specialists in understanding how to apply the concrete-representational-abstract (CRA) approach in teaching, the math core team, together with some contributing members have put together a comprehensive resource pack. This initiative saw our combined creativity and strengths as a team in action as we tried to make our curriculum relevant to the students by grouping the concepts in the MOE syllabus according to level, topic and difficulty; and to come up with original teaching approaches for each of the concepts within the topics using the CRA approach.

Due to the team's small size at that moment, this project took us a total of two years to complete. The DAS Essential Maths Resource Pack, which now contains a Curriculum Progression, Scope and Sequence and Teaching Approaches for each topic, has undergone testing and evaluation, and is ready to be printed as an internal publication.

SUCCESS STORIES

EDUCATIONAL THERAPIST REFLECTIONS



**Rebecca Yeo,
Educational Therapist**

Jermaine*

"Jermaine* (P6F) has been a student on the DAS maths programme since 2012. Before joining the programme, she was struggling with the language of maths (e.g. more than/less than) and with understanding maths concepts such as telling time. Throughout this 1 year of intervention, Jermaine has made tremendous progress in her mathematics in school. Her attitude towards Mathematics has also changed and she has developed a deep interest and enthusiasm for the subject. In her recent preliminary examination, she scored the highest in her school, with a score of 91/100. Previously, she used to score an average 15/100 for her maths examinations. As her Mathematics Educational Therapist at the DAS, I am very proud of Jermaine's achievements and I hope that she will continue to love the subject and do her best in it." (December 2013)



**Siti Aishah Bte Shukri,
Senior Educational Therapist**

Jake*

"Jake* (P6F) joined the Math programme in 2014 after he failed his PSLE Math and had to repeat Primary 6 level. He was barely coping with Math in school and has been getting U-grade scores all the while. After 3 months in the math remediation, Jake's mom and teachers were able to see a difference in his Math understanding and confidence. He even scored 35/50 for his recent test. His mom believes that the concrete to representational to abstract approach has worked for her son. This is a great start and I really hope Jake will continue to experience success in Math."

(April 2014)



**Aishah Abdullah (Albel),
Senior Educational Therapist**

Harry*

"Harry started DAS Maths intervention with me in Term 3 at Bishan Learning Centre in 2012 after he failed his Mathematics in the Primary 4 mid-year examinations at school. As he began to immerse himself in the Concrete, Representational and Abstract strategies that are used in DAS Maths lessons, he became more alert to applying these strategies when working out the complex sums that he faced in school workbooks, worksheets and assessment papers.

Harry now enjoys solving maths problems and said, "I am better able to picture and connect the information in word problems; then write out the right strategy, e.g., draw a model, branch out, make a list or work backwards to correctly arrive at the answer. When a method does not work, I will quickly change to another plan. I find solving Maths problems so interesting and fun now."

Through sheer determination and willpower he has confidently handled his math problems and has improved tremendously. Like a captain at the steering wheel he powered himself to his goal – to obtain an 'A' at PSLE Standard Maths. Sweet success awaited him. On 23 November 2013, Harry humbly walked into

my maths class with his PSLE result sheet. "Ms Albel, I scored an 'A' for Maths," he said gently. I couldn't have been more proud of my student for achieving his goal.

Harry is now attending a Secondary 1 Express class at Naval Base Secondary School. Well done Harry!" (April, 2014)

Geraldine*

"Geraldine (P6F) worked hand in hand with me in all the Mathematics concepts taught, applying meaningful strategies to correctly work out the sums. She found learning Maths enjoyable and a fun experience. I often told Georgina that she was capable of obtaining a Grade 1 at PSLE Maths. Her confidence rose and she worked conscientiously, determined to achieve the 'unattainable'. When the PSLE results were released, she screamed out with whoops of joy, "Ms Albel, I've got Grade 1 for Maths!"

Geraldine was eligible for the NA stream at secondary school. However she decided that she could perform better being in the NT stream and is now attending a Sec 1 NT class at Greendale Secondary School. Keep working hard at Maths, Geraldine" (April 2014)

** Students' names have been changed to ensure confidentiality.*

STUDENT AND PARENT TESTIMONIALS

"At DAS Bishan, Ms Albel teaches me Maths differently from the way the teachers in school teach me Maths, especially the problem sums. I read the sum step by step. Then I connect and arrange the colourful and fun Maths materials according to the sentences in the sum. This way I can understand and work out the sum easier. Last year, I failed in Maths but this year I scored 60% at SA2. I find learning Maths fun and interesting at DAS Bishan."

**Primary 4, Bishan Learning Centre
Student of Aishah Abdullah (Albel),
December 2013**

"Thanks for teaching Kenny* for the past 1 year. He has shown great improvement. His most happiest moment is that he managed to get a pass in his SA2 paper this year. He is happy in DAS group and has learnt a lot from DAS teachers."

Parent of Bishan Learning Centre, December 2013

"My name is John*. I like my Maths class because it is fun and my teacher uses Maths manipulatives to make Maths easy to learn. Before I attended DAS Math

class, I was failing my Math exams. I scored about 35 marks and I felt that Maths was hard. After attending DAS math classes, I have now improved in my Maths. I am now scoring 64 marks and I now feel that Maths is easy!"

**John*, Primary 3, Queenstown Learning Centre
Student of Rebecca Yeo, December 2013**

"The Maths programme in DAS helped me a lot to learn different methods to handle difficult questions. The programme made my basic foundation in Maths strong and firm before moving to the next level. The teacher is very understanding and had lots of patience."

**Angela*, ex-student
Student of Siti Aishah Bte Skuri, December 2013**

"I was relieved when my daughter got help from DAS maths programme as she was failing her Maths subject in school. I saw her basic foundation in Maths improved a lot and the teachers guided her on how to apply them in word problem. I saw her results improving fast and her understanding better. In due time the programme helped her to like Maths and she was able to cope with Maths in school. Her achievement was passing Maths in PSLE. What she learned is still helping her in her Sec School and she is continuously passing her Maths subject. I hope DAS will consider enhancing the programme and helping the students in Sec Sch. Thank you DAS Maths!"

Mother of Mary,* Bishan Learning Centre, December 2013.

"Before Andy* started the math programme with DAS this year, his results were around 50-60, his weakness was with certain math concepts like fraction, area & perimeter, time and especially problem sums, which could be because of his dyslexia. He was often reluctant to do his math homework and showed resistance to the subject. He didn't enjoy math class and even with supplementary class in school, he didn't understand his work.

Upon attending the Math classes at DAS, he has shown improvement in his work, which also helped with his self-confidence. He is showing more interest in the subject as he now can understand the math concepts better with help from Miss Rebecca Yeo, his Literacy and Math teacher, or Miss Becky, as she is fondly called.

Now with the class, he has learnt to decipher how to approach word sums, fractions etc. and knowing that he can turn to Miss Becky for help, he has shown significant improvement in his grades and we are thankful for this opportunity to be part of this program. Under the care and guidance of Miss Becky from DAS Queenstown, I

hope my son will continue to find the joy in learning.

**Mother of Andy* Queenstown Learning Centre Parent
December 2013**

**Students' names have been changed to ensure confidentiality.*

FUTURE DEVELOPMENTS IN THE PROGRAMME

1. The team hope to do a retest using the slightly improved Form B in mid-year.
2. The team would also like to look into incorporating an attitudes test to track changes in students' attitudes towards Mathematics as a subject, math computations and word problems before the start of the program and after every year of being on the programme. This attitudes test would be administered together with Form B.
3. The current Form A only assesses 8 topics: addition, subtraction, multiplication, division, time, fractions, geometry, and decimals; and does not word problems at all. Therefore, to increase the content validity of the tests, Form A would need to be updated to include all topics and word problems separately within each area.
4. To help very weak students who are struggling with basic math concepts, a foundation level math program will be initiated to aid these children in developing their number sense, which is a pre-requisite for later math skills. This is a very specific program for children who cannot cope in the essential math program and needs a bridging program to master the foundation skills first before moving them into the essential maths programme.
5. The team will also be working towards a targeted student population of 255 students by March 2015. We aim to do this by recruiting and training more new teachers and by promoting the program actively through awareness efforts to attract new students. As certain learning centres have a greater need for Math dual specialists than other learning centres, we would
6. We will continue to uphold the high standards in teaching quality as well as the professional development of our dual specialists through in-house training (insets) and workshops. Teaching quality for existing dual specialists will also be monitored by a peer dual specialist and one of the core team members using video recordings of a lesson, once every year.

ACKNOWLEDGEMENTS

We would like to extend our appreciation to past DAS Math team members Clair Marie Yeo, Jasmine Kang and Ng Ru Min for their insightful and valuable contributions to the development of the Essential Math resource pack during their time with the team. We would also like to thank the DAS Math Dual Educational Therapists/Specialists for their comments, feedback and suggestion during the trials, without which this pack would not have been possible.

In addition, we would like to thank Tam Shu Yi, who helped us look through the Essential Maths resource pack and provided us with interesting ideas to enhance our teaching approaches.

STARHUB

SUPPORTER OF SES ESSENTIAL MATHS

StarHub is Singapore's fully-integrated info-communications company, offering a full range of information, communications and entertainment services for both consumer and corporate markets. StarHub is a firm believer in giving back to the community. That is why we commit 1% of our IDD revenue to our main corporate philanthropy vehicle, the StarHub Sparks Fund. Since 200 to date, over \$10.9 million has been disbursed to help the less fortunate. The StarHub Sparks Fund aims to benefit the less fortunate, widening their visions and opportunities in life through education, skills enhancement and by fulfilling basic needs.



ABOUT THE AUTHORS



DR TIM BUNN

Consulting Educational Psychologist

Tim has a BA in Psychology & Philosophy from Oxford University, a PGCE from Redland College, and an MSc in Educational Psychology from University College, London. He worked as a teacher in primary, secondary and special settings for 9 years, and as an educational psychologist mainly for English Local authorities for more than 20 years. He also served as SEN Officer for Northampton for 8 years, administering the area's statutory SEN procedures. He worked for 3 years in a private dyslexia specialist school (Egerton-Rothesay) as its in-house psychologist, and for a while he led the DAS research team in Singapore. His own doctoral research was on literacy interventions in the middle primary years, and was particularly interested in the roles of teachers and teaching assistants in helping children with literacy difficulties. He is now a Consultant Educational Psychologist for the Specialised Educational Services division of DAS.



YEO REBECCA

Senior Educational Therapist

Ms Rebecca Yeo is a Senior Educational Therapist and a member of the Maths core team at the DAS. She has helped with the development of the Essential Maths programme as well as the training of new Math dual specialists at the DAS. In addition, she has conducted talks with parents to provide them with strategies to help their children with Mathematics at home. Rebecca holds a Bachelor of Psychology from James Cook University, a Postgraduate certificate in Specific Learning Differences from the London Metropolitan University and has recently received her WSQ ACTA certification in Training and Assessment. She will be pursuing her Masters of Education (Mathematics) at the National Institute of Education in January 2015.



SITI AISHAH BTE SHUKRI

Senior Educational Therapist

Siti Aishah Shukri is a Senior Educational Therapist who has been teaching in DAS for 5 years. She has a dual specialisation in the remediation of Literacy (Primary 1 to Secondary 4) and Math (Primary). Siti is a core member of the DAS Math team and is trained in the Advanced Certificate in Training and Assessment, she is also involved in the development of the curriculum for the DAS Math programme. Siti holds a BSc (Psychology) and a Post-Graduate Certificate in Specific Learning Differences, she is passionate about working with children with learning differences. She is presently teaching at DAS Bishan Junction 8 Learning Centre.



AISHAH ABDULLAH

Senior Educational Therapist

Ms Aishah Binte Abdullah (Albel), Senior Educational Therapist is a Dual Specialist with DAS, Singapore, has 42 years of experience in teaching Maths to primary students, a number of whom have excelled in Maths in school examinations. She holds a Certificate in Education and a Diploma in Dyslexia Studies. Albel is an active pioneer member of the DAS Maths Core Team and she teaches Maths at DAS Bishan Junction 8 Learning Centre and also at DAS Yishun Learning Centre.

Motto: Students learn Maths readily when MATHS is fun for them.



SPECIALIST TUTORING

OUR APPROACH

Specialised Educational Services (SES) has a team of specialist tutors who have extensive experience in supporting students with specific learning differences and other learning needs.

Specialist Tutoring is tailored based on the profile of the child obtained from our multi-disciplinary team of educational psychologists, speech and language therapists, occupational therapist, and in consultation with parents and educators. Tutoring has an individualised problem solving approach where skills focused include:

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

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

Specialised Educational Services

Specialist Tutoring

Anaberta Oehlers-Jaen

Programme Director of SES Specialist Tutoring

Dyslexia Association of Singapore

INTRODUCTION

This paper aims to provide an overview of the Evaluation of the Specialist Tutoring Programme offered by DAS International under the one to one programme for the period 2013. Upon the recommendation of our CEO Mr Robin Moseley, DAS International wanted to seek the views from Students, Specialists teachers and parents on the effectiveness and satisfaction of the program. As a brief explanation to the current status of DAS International Specialist Tutoring, in April 2014, due to the reorganisation within DAS and DAS International, the Specialised Educational Services Programme (SES) was set up. Specialist Tutoring has now come under the purview of the SES Programmes. However, background information on the set-up and demographics of the service (DAS International Services Ltd) is important in to the understanding of the survey.

ABOUT DAS INTERNATIONAL SERVICES LTD

DAS International Services Ltd is a wholly-owned subsidiary of the Dyslexia Association of Singapore (DAS) and is part of the DAS group of companies which was incorporated in 2011. Building upon the recognised experience, competence and expertise of the DAS in providing high quality specialist services over the last 22 years. DAS International offered the full range of Multi-Professional Services comprising Psychological Assessments, Speech and Language Assessments and therapy, Occupational therapy and Assessments and including Specialist Tutoring both in Singapore and Overseas.

Since April 2014 DAS International continues to service the overseas market through providing Assessments and Consultation. The Specialised Educational Services a division of the Dyslexia Association of Singapore, since April 2014 now provides all

services formerly provided by DAS International in Singapore that includes Specialist Tutoring. The results of a survey conducted for Specialist Tutoring in October 2013 is discussed in this paper.

RATIONAL FOR THE SURVEY ON SPECIALIST TUTORING

Mr Robin Moseley Chief Executive Officer suggested that the key element for a service such as DAS International was to measure “customer satisfaction”. He suggested questions such as, “have you been listened to?” as part of a questionnaire for parents. He also felt that DAS International should ensure that parents’ views about what any interventions would achieve were crucial in initial documentation, and review of the services provided.

Specialist Tutoring Student Profile:

The range of students that attended Specialist tutoring in 2013 included the following: 60% Singaporean (MOE) Students and 41% International School Students. There were 44 students enrolled for Specialist Tutoring in January 2013 and at the end of October 2013 there were 66.

SPECIALIST TUTORING

Reasons for Students to attend Specialist Tutoring

- It is a challenge for some students to find a place, particularly in the International schools
- Specialist Tutoring provides an interim as well as continued support for students.
- Some schools have no provision for students with learning differences.
- Students are unable to keep up with the curriculum.
- Students require additional support for Literacy, Maths, and Exam Skills.

Programme Description: Specialist Tutoring

Ages taught:	4 to 18 years
Instruction in:	English
Subjects taught:	Literacy, Numeracy, Oracy, & Writing Skills Individual Curriculum support Study skills and Exam preparation

Referrals for Specialist Tutoring

Referrals for Specialist Tutoring for the period of 2013 were:

Source of Referrals	% of No's Referred
Media / Internet	21%
Teachers	49%
Friends / Relatives	13%
Awareness Talk	3%
Private Clinics	11%
Internal Referral from DAS	3%
Total Referrals	100%

Profile of Specialist Teachers

The Specialist tutors are experienced in the international, private and public school systems. At the same time the team of specialist tutors who have extensive experience in supporting students with specific learning difficulties make up the Specialist Teachers. All Specialists Teachers are highly trained in their area of expertise with a formal degree and professional qualifications. At the time of the survey there were a total of 15 Specialist Teachers supporting 84 students.

Headcount of Specialist Teachers as at October 2013

- 3 Full-time Specialist Teachers.
- 4 Sessional Teachers : (Teaching and paid per hour)
- 3 DAS Senior Educational Therapists & Lecturers
- 6 DAS Senior Educational Specialists with the Dyslexia Association.

They have an understanding of the curriculum and the demands that today's education systems place on the child. They aim to provide a total solution with an Individualised Education Plan to support each child's needs.

Their job scope within Specialist Tutoring requires:

1. Regular verbal feedback is provided at the end of each tuition session.
2. Conducting informal assessments on progress

3. Monitoring and tracking of child's progress.
4. The tuition is skills focused.
5. Developing an Individual Education Plan (IEP)
6. Teachers are required to adopt a problem solving approach.
7. Initial consultations and ongoing verbal or via email / telephone feedback
8. Progress reports are provided for parents.

Description

Specialist tutoring adopts a problem solving approach through the development of an individualised programme that aims to bridge the gaps in the child's learning. At the same time, Specialist Tutoring believes in working closely with schools and parents thereby creating a loop and an open channel for communication, whereby the schools and parents know there is support for their child in the area of Specialist Tutoring and intervention.

Specialist Tutoring also provides educational programmes and other individual support services for individuals with specific learning differences. The aim of Specialist Tutoring is to effectively support the development of each child. Each child is seen as an active, competent learner, especially children who have Specific learning differences (SpLD), wanting and in need of a value added programme / specialist support .

Individualised tuition is tailored based on the profile of the child obtained from our multi disciplinary team of educational psychologists, speech and language therapists, occupational therapist, and in consultation with parents and educators.

MEASUREMENT OF PROGRESS:

A student's progress for Specialist Tutoring is measured in the following ways:

1. Formative and Summative informal assessments to determine progress from topic to topic.
2. An Individual Education Plan based on a 10 week cycle is developed and results from the Formative Assessment form the basis for the IEP.
3. An informal Summative Assessment at the end of the 10 week cycle is again carried out.
4. This would then form the basis of the Summative Assessment and the next set of IEP's
5. Standardised assessments, such as the YARC, TOWRE and the WRAT are administered every 6 months to determine overall progress.

APPROACH TO TEACHING

The teaching approaches in the Specialist Tutoring Programme are influenced by the Essential Literacy Approach (ELA). The knowledge and skills learnt in ELA will help and guide students to meet the needs of Singaporean and International mainstream schools. The following is a brief description of the Orton-Gillingham (OG) principles that influenced our programme's curriculum development and teaching practice:

Language based

Based on the OG approach of learning and teaching language, the involvement of awareness and appreciation of the features of language is crucial. Students are exposed to different knowledge and related strategies which are determined by their needs, along with grammar, comprehension and writing.

Cognitive

The components and lessons are designed to encourage students to activate their cognition to apply the knowledge and skills taught.

Structured, sequential and cumulative

The skills covered in one lesson are reinforced in subsequent lessons. This helps to ensure that students consolidate their learning of particular grammar items and comprehension skills.

Simultaneously multisensory

It is believed that different students have different learning styles. These are namely the auditory, visual, kinesthetic and tactile learning styles. The method used in the ELA approach is one that is simultaneously multisensory to cater to the learning needs of as many students as possible.

Diagnostic Prescriptive

The pre-tests conducted would allow the Specialist Teachers, to determine the areas where an emphasis is required. For example, if the student's weakness lies in decoding, the emphasis would be on strengthening the students decoding strategies and part of the child's IEP would be guided to achieve that target.

Emotionally Sound

Specialist Teachers adopt the Vygotsky's zone of proximal development approach to teaching. Starting the students where they are at and building them up, allowing each child to gain more confidence through achievable tasks.

KEY SPECIALIST TEACHING PROGRAMMES

Literacy

The Specialist Teaching programme by its very nature of one to one teaching allows for the Specialist teacher to work closely with the level and individual needs of the students. Specialist Teachers have adopted the Essential Literacy Approach (ELA) as a guide in supporting students particularly those with dyslexia who struggle with reading, spelling, and/or writing.

ELA is a multisensory structured language approach that teaches the structure of the English language at the level of sounds, syllables, meaningful word parts, sentences and paragraph organisation. It contains the critical building blocks of literacy that have been identified by the National Institute of Child Health and Human Development.

They are:

- Phonemic awareness
- Phonics Instruction
- Reading Comprehension
- Reading Fluency
- Vocabulary

Originally based on the Orton-Gillingham approach, ELA has evolved to meet the unique language needs of dyslexic children in a multi-lingual Singapore and within the International School community.

Maths:

Specialist Tutoring has adopted the Essential Maths Programme from the DAS Maths Programme which uses the Concrete / Representational / Abstract (CRA) Approach to learning Maths.

- Concrete Stage – Use of tangible manipulatives
- Representation Stage – Use of picture / 2D drawings
- Abstract Reasoning Stage: Use of symbols and word problems

At every Stage student links mathematical ideas in a progressive and cumulative way. The Maths Programme aims to effectively support students with Specific Learning Differences who have persistent difficulties in understanding maths concepts. This is achieved by providing “dyslexia-friendly” lessons while keeping in touch with the mainstream school mathematics syllabus. The students attending

Maths Specialist Tutoring are usually weak in their Maths foundation and need help with understanding mathematical concepts and computations and applying what they have learned to word problems.

Specialist tutoring in the area of Maths support:

- The individual needs of the child
- Concept building
- Addressing the areas of skills deficit
- Bridging the gap between the student's maths abilities and the mainstream mathematics syllabus.

Topics taught:

- Addition/Subtraction of Whole Numbers
- Multiplication/Division of Whole Numbers
- Time
- Fractions
- Decimals
- Geometry
- Ratio
- Percentage

ANALYSIS OF THE SURVEY ON SPECIALIST TUTORING 2013

Parents' Views:

17/66 parents responded to the survey (26%). Of those, 70% were either pleased or very pleased about their child's progress at DAS. Only one person was not satisfied. 82% did feel their child was understood and they were listened to. All the parents received feedback from their child's specialist tutor, 88% well or very well. A resounding 100% of parents said their children enjoyed attending lessons at DAS International, and 80% said they were happy with their child's IEP. Although the response rate to the survey seems low, this is characteristic of surveys of this type, where response is deemed to be good if it reaches 33%. Typically, non-responders are content with the service they are receiving.

Students' Views

30 students responded to the survey, which was given in a short discussion using a Zeroten number line, where 10 was very positive and 0 very negative.

The students were asked 5 standard questions and further individual questions at their tutor's discretion. The students' average rating of their learning at DAS International was 8.9, compared with 7.0 for learning at their schools.

We wanted to know whether they found reading or writing easier. The average for reading was 7.4, and for writing 7.0, very similar. We were encouraged that they were a little more positive about writing than the usual responses to the same question by Singaporean DAS students. Responses of individuals were interesting and relevant to the tutors.

We also asked them what their parents rating of their progress would be, in their opinion. Their average rating was 8.6, which was very close to their own average rating of 8.9.

Tutor's Views

The 19 tutors were more cautious than the parents about student's progress. They felt the students had made progress (74%) but only 21% were "very pleased" with progress. They were nearly all happy with the information they had received about students (82%). 95% of tutors were positive about their student's progress.

About 90% felt that parents mostly or always listened to their feedback. About 74% felt that the child's IEP met all needs.

The tutors were also asked about homework. Only 37% gave the children homework regularly (53% did not, and so were not able to comment on its completion). Those who did give homework found they nearly always got it back.

STUDENT TESTIMONIALS

Name: John Henry (*Anonymous*)

Age/grade: 9 years old / Grade 3

Going to DAS classes with Sue-Lynn helped me a lot. We did card drill where she shows me word cards and then I have to collect the right ones. We played games to help me with my sight words and spelling. I enjoy my classes at DAS because it is fun and help me with my reading and writing. Sue-Lynn makes it interesting and it is easier for me than class at school. DAS helps me by improving my brain and helps me to better participate in class at school.

PARENT TESTIMONIALS

Parent: Catherine Henry (*Anonymous*)

From the onset, John Henry loved going to his sessions with Sue Lynn, his Educational Therapist at DAS International. He enjoyed the multi-sensory educational based activities and formed a very special bond with her. He referred to them as “fun” learning and that it was nothing like class at school. His excitement was evident when it was time for tutoring class at DAS International. John Henry acquired practical tips and techniques during these sessions which he was then able to apply in class at school and at home because he knew they worked! A written appraisal after every 10 sessions of tutoring provided me with a measurable target in relation to his performance based on the objectives listed in his IEP. Sue Lynn also kept me updated and informed about the latest developments and advancements in educational tools, applications and websites to assist and support children diagnosed with dyslexia.

Parent : Mrs Collins (*Anonymous*)

Malini has worked with Cheryl for the past two years on a one-to-one basis. Cheryl has not only improved academically she has also received tremendous support emotionally. Malini has set Cheryl tough but achievable I.E.P’s and this has broadened Cheryl's thinking. Malini has a very nurturing way of teaching and this has been a great asset as Cheryl never thought of her lesson as a chore. She was first in class in her recent English exam, which we are delighted with and we are sure that Cheryl will succeed in her PSLE. I can’t thank you enough for getting Cheryl to where she is today.

Parent: Catherine Isaac (*Anonymous*)

My daughter took one-on-one educational therapy sessions with Anaberta Oehlers-Jaen. The sessions were designed to close the gap between Chloe's learning and that of her classmates. Chloe is now a reader and is enthusiastic about school. This is a huge change from before the sessions at DAS. Also she and her tutor (Anaberta Oehlers-Jaen) developed a great relationship where Chloe looked forward to her weekly sessions with her. Chloe was sad that her sessions with Anaberta were coming to an end.

Parent: Mrs Tan (*Anonymous*)

Dear Michelle and Kamisah and all at DAS, I wanted to show my appreciation for the service you are giving. Since starting this program, Donald has improved so much that both his specialist reading teacher and home base teacher from ABC

International, have noticed and want Donald to continue with his DAS classes. This year, Donald has had his confidence restored in class, something his classroom teacher has commented on, which was our main worry last year.

I have also been impressed that as a whole you seem to work well together. My first impression, meeting the assessment team that assessed Donald was very professional, accurate and comfortable. You all have a range of talents and work really well together. I have also been impressed in the way you are not like so many other organisations that seem to be just after the money, which may or may not be true. DAS seems to always do what is best for the child. Furthermore, you seem to be wanting to do what is best for many children not just in Singapore. That is commendable. Keep up the good work. Thank you for your service! And as Christmas is approaching I pray that DAS will enjoy many years favoured by God!

Parents: Mr and Mrs Leng (*Anonymous*)

Our 2nd son, Michael, was struggling with Mathematics since early primary school days. We sent Michael for dyslexic evaluation and examination and he was diagnosed for dyslexia symptoms. We enrolled Michael, in DAS Education Therapy, under the tutelage of Ms. Aishah Albel. Under her tutelage, my son Michael, has been improving tremendously. He did very well in both the primary 6 preliminary examination as well as the PSLE.

Ms. Aishah Albel, advised and recommended Michael, to continue with the programme. Michael, is now scoring 'Bs' in Mathematics. Not only does Michael like Mathematics but is also a very confident young man now.

Thank you, Ms Aishah Albel.

Parent: Mitchell Knight (*As featured in Expat Living*)

I have three children, aged 14, 10 and two. My 10-year-old, Carter, is currently attending DAS International.

When we were looking for a school for Carter, we had two main priorities: a school that would support his learning differences, which are dyslexia, dyscalculia and dyspraxia; and one that would provide him with mainstream and one-to-one learning support while still meeting all the core competencies found in the US curriculum.

I discovered DAS on our exploratory trip to Singapore. Everyone we talked to there was extremely knowledgeable and passionate about helping children with learning differences and it was clear that they put the children's needs above all else.

They designed a programme specific to my son's needs that continually promotes self-confidence and awareness in an effort to bridge the gap between his level and that of a typical 10-year-old. The holistic approach in the curriculum provides him with real life skills in addition to the core competencies he would receive at a mainstream school.

We meet with the teachers, specialists and management at DAS every 10 weeks to review his goals and progress, and to discuss the curriculum and their approach. Carter really likes that all of his teachers and specialists are easy to approach and each one treats him like a regular students and not just someone with learning differences."

CONCLUSION

The response rates from these surveys are not high, but there were very few negative responses or comments.

The high positive rates from students are encouraging. The tutors were also positive about communications and about their students. These surveys also helped to demonstrate to parents and students the value that DAS International placed on their views.

FUTURE DEVELOPMENTS IN THE PROGRAMME

As the service adapts and changes, it is imperative that programme evaluation and quality control, as part of the programme management is included as a means of improving customer services both to our students, parents and Specialist Teachers. Even one dissatisfied parent is one too many and Specialist Tutoring needs to be more aware of such problems and react to them quickly. Our tutors also need to be prepared to be open about any concerns as well as giving positive feedback that can improve the overall Specialist Tutoring experience for our parents and students. We plan to follow up on the information provided from this survey.

The age range and skills offered by the Specialist Teachers needs to be continually increased to cater for the demands of the expanding age group. Further refinement in monitoring students' progress should be considered. This could also be timely in ongoing research into one to one Specialist Tutoring.

ACKNOWLEDGEMENTS

I would to acknowledge the following colleagues who have contributed to the Specialist Tutoring Survey:

- ◆ Dr. Tim Bunn: Consulting Educational Psychologist and Senior Research Officer – Providing the initial discussion and subsequently in joint consultation, the Zero to 10 Survey Questions for Parents / Teachers / Students and helping with the data analysis
- ◆ Tam Shuyi: Specialist Teacher – Helping to collate the data and subsequent data analysis
- ◆ Specialist Teachers and Senior Educational Therapists: Brenda Horner, Malini, Shilpa, Raji, Sailatha, Samunn, Albel, Sue Lynn, Albert, Priscilla, Michelle, Anaberta, Geetha, Puva Kurusamy, Gladys Wee – Involving the students and parents and providing feedback.
- ◆ Head of Publicity and Publications: Deborah Hewes – Editing and creating the survey paper together into publishing the corporate Specialist Educational Programme image.
- ◆ Parents and Students of Specialist Tutoring whom we work for in supporting their families.

ABOUT THE AUTHOR



ANABERTA OEHLERS-JAEN

Programme Director of SES Maths, Assessments and Specialist Tutoring and Head of DAS International

Ms Anaberta Oehlers-Jaen made a career switch from the Robinson's group of companies as Group Merchandise Controller to join the DAS in 2005 as an Educational Therapist. She holds a Masters Degree in Special Needs from NTU, BA (English Language and Literature) from SIM, a Postgraduate Certificate in Teaching and Learning in Higher Education from the London Metropolitan University as well as a Cambridge International Diploma for Teachers and Trainers (Dyslexia), along with Early Childhood Diplomas. She has Fellow status at RETA Registrar of Educational Therapists (Asia) and is also a Senior Educational Therapist.

For 4 years, she was the Preschool Manager of the DAS Preschool Service actively involved with children at risk of literacy delay. Anaberta who is also actively involved in research has also delivered at conferences in Singapore and Hong Kong. Her recent paper in 2014 was on the Program Evaluation for Specialist tutoring as well as actively, overseeing the development of the Maths Programme.

Her background of more than 15 years in the retail service line, has translated her into adopting a high level of professional service for both the students and parents through Specialist support and Assessments. She hopes to share the same philosophy which she has embraced at the DAS as her personal ethos in helping all children achieve in her current portfolio both in Singapore and the region.

SPECIALIST TUTORING

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



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- Study skills and Exam preparation
- Behaviour and Social support



**DYSLEXIA ASSOCIATION
OF SINGAPORE**
HELPING DYSLEXIC PEOPLE ACHIEVE

**Find out more at our website:
www.ses.org.sg**

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Specialised Educational Services

UNLOCKING POTENTIAL

ENGLISH EXAM SKILLS PROGRAMME

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 English Exam Skills Programme (EESP) provides an extension to what students have been taught in the MOE-aided Literacy Programme (MAP) 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

Specialised Educational Services

English Exam Skills Programme

Shifa Binte Shekh Nahji ¹ and Edmen Leong ²

1. *English Exam Skills Programme Manager*

2. *Senior Educational Therapist*

Dyslexia Association of Singapore

THE PSLE IN SINGAPORE

The Primary School Leaving Examination (PSLE) can be considered a rite of passage Singaporean children have to face when they approach the end of their primary school education. Singaporean children begin their formative education at the primary level when they enter the school and receive six years of compulsory education (Ministry of Education (MOE), 2014). The first 4 years of primary education focus on building a strong foundation in core subjects, namely English, Mathematics and Mother Tongue Language. After which, the students undergo *subject-based banding* (MOE 2014, p. 7) where students are offered a combination of Standard or Foundation subjects according to their performances and abilities. During the final 2 years of primary education, teachers would start preparing students for their PSLE - a national examination conducted at the end of primary education. Based on the two separate streams, teachers will be preparing students for the Standard or Foundation examination papers respectively.

There are several differences between the Standard and Foundation PSLE examination. The Standard paper being more challenging than the Foundation paper. While the purpose of this streaming exercise is to allow students to be placed in classes, and sit for examinations that are closer to their abilities, these streams also play a role in their entry to secondary schools.

“Considering how the PSLE results can play such a major role in determining a child’s educational pathway following his primary education, most parents have high expectations of their child’s performance in the national exam.”

There is a strong emphasis on doing well for the PSLE as the results obtained from the PSLE will be used for placement of students in various secondary schools and streams. Considering how the PSLE results can play such a major role in determining a child's educational pathway following his primary education, most parents have high expectations of their child's performance in the national exam.

Since the PSLE impacts the secondary school placement of Singaporean students nationally, it is recognised by teachers, parents, and students as an important high-stake examination.

ENGLISH EXAM SKILLS PROGRAMME

A vast majority of students receiving phonics-based remediation at the Dyslexia Association of Singapore (DAS) are studying in Ministry of Education (MOE) schools. While it is very important that our students get continuous help with their development of literacy skills through the phonics-based instruction known as MOE-aided DAS Literacy Programme (MAP), there is a need to address the examination demands of our students. Bearing in mind the reading difficulties our students encounter, as well as the syllabus these students are required to grasp in their primary school, we have decided to develop the English Exam Skills Programme (EESP) to support primary students with dyslexia in their English Language examinations.

The EESP started in July 2013 as a pilot project, targeting both the Standard and Foundation syllabus for Primary 5 and 6 students. Today, the EESP is able to provide for students from Primary 3 to Primary 6. Students who are currently in MAP are eligible to enrol for the EESP.

The topics covered in our programme were carefully selected, taking into account the components of the PSLE English paper, that consists of 4 separate papers (Writing, Language Use and Comprehension, Listening Comprehension and Oral Communication). The project team has worked carefully on identifying the common areas of difficulties and sets of challenges usually faced by students with dyslexia in their PSLE English paper, and understand that our students show weaknesses especially in the writing, language use and comprehension components. While our main literacy programme, MAP, addresses the writing needs of our students, the EESP aims to work on the language use and comprehension component of the PSLE. As such, a carefully designed programme that references the established Orton-Gillingham (OG) principles (Gillingham & Stillman, 1997), was implemented to address the language use and comprehension needs (Paper 2 of the PSLE) of our students.

Within Paper 2 of the PSLE English examination, students are tested on several language skills ranging from the knowledge of grammar, vocabulary, comprehension, to the synthesis and transformation of written sentences.

Based on the analyses of the students' work and test papers collected, we noticed that students struggle with applying several language skills in various components in the PSLE paper. For example, while they have been explicitly taught spelling rules in the MAP, they are not able to relate these rules to the 'Editing' component in their exam papers. It is also noticeable how our students struggle particularly in the 'Synthesis and Transformation', and 'Comprehension' components in their exam paper. They were failing or scored close to zero for these components in their examinations. As such, we are committed to address these weaknesses by implementing the EESP as a third hour programme to strengthen our students' skills especially for the practical use in their English Language paper.

“Based on the analyses of the students' work and test papers collected, we noticed that students struggle with applying several language skills in various components in the PSLE paper.”

ENTRY CRITERIA

The EESP is now open for DAS students from Primary 3 to Primary 6. Primary 3s and 4s will be placed into differentiated EESP classes based on their MAP banding since they have not been streamed in their primary schools. Primary 5 and 6 students however, will be placed into EESP classes based on how they are streamed in schools (Standard or Foundation). In order to fully benefit from the EESP, students are required to have some fluency in reading short passages. This is to ensure that the learning processes of skills taught will not be hindered by the students' difficulties in decoding.

CURRICULUM DEVELOPMENT

Samples of the curriculum in the form of scopes and sequences developed by the project team are presented below. The improvements made to the programme are also continuously recorded as our team progresses through our pilot stage, and through the terms of teaching and planning. The first three terms (Term 3, 2013; Term 4, 2013; Term 1, 2014) of the development of our curriculum are presented below to account for the improvements in our curriculum over the terms.

SCOPE AND SEQUENCE FOR TERM 3 2013 (OUR FIRST TERM)

In Term 3, 2013, the scope and sequence was executed over 10 weeks (a total of 10 hours). Based on feedback from Educational Therapists, the topics we intended to cover per lesson were over-planned. It was also observed that different classes have students with differing abilities despite being grouped in the same Standard or Foundation stream. The feedback received in Term 3 suggests that there was a need for a more narrowed and achievable yet effective scope and sequence in the following terms.

SCOPE AND SEQUENCE FOR TERM 4 2013 (AFTER REVISION)

After considering the feedback received in Term 3, together with the progress of our students, the revised scope and sequence was designed in Term 4, 2013 to cater to the different abilities of students in our classes. As such, additional activities were planned as filler activities for students who are faster at completing tasks. The Educational Therapists who carried out the lessons found that the revised scope and sequence was more effective for the students in receiving and retaining the knowledge and skills taught. However, it was also observed that there were too many components were taught per session. The vast amount of concepts for students to grasp were not achievable.

* There were no Foundation students during this semester

SCOPE AND SEQUENCE FOR TERM 1 2014 (AFTER REVISION)

With more considerations brought out in Term 4, 2013, the project team modified the scope and sequence such that components are more spread out. The scope and sequence moved towards ensuring the quality of concepts students can grasp compared to the quantity of concepts taught.

EVALUATION OF STUDENTS' PROGRESS AND EFFECTIVENESS OF PROGRAMME

To ensure quality of our programme, some information was gathered before and after the programme each term in the form of:

1. Pre-tests and Post-tests
2. Feedback from students, Educational Therapists, and parents.

TERM 3 2013 STANDARD SCOPE AND SEQUENCE			
Lesson 1	PRE-TEST		
Lesson 2	Grammar Subject-Verb Agreement	Editing -es/-s	Comprehension 1 Basics and question analysis
Lesson 3	Grammar Tenses -Present perfect & Present Perfect continuous	Editing Review of Suffixing rules, Drop e, Doubling Rule, y to i	Comprehension 2 Timed reading and main ideas
Lesson 4	Grammar Tenses - Past perfect & Past Perfect continuous	Grammar Pronouns 1	Comprehension 3 Timed reading and main ideas
Lesson 5	Synthesis Direct & Indirect Speech: Changes to Punctuation, Changes to Verb Tenses	Grammar Pronouns 2 Editing Which, where etc.	Comprehension 4 Short passage and main ideas OR Short passage and main ideas
Lesson 6	Synthesis Direct & Indirect Speech: Changes to Pronouns & determiners, Changes to Time	Editing Missing syllables / r-controlled vowels	Comprehension 5 Short passage and inferential questions
Lesson 7	Synthesis Direct & Indirect Speech: Changes to time references, Position References	Editing /j/	Comprehension 6 Short passage and inferential questions
Lesson 8	Synthesis Condition: unless	Grammar/Editing Irregular past tense	Comprehension 7 Short passage and inferential answers
Lesson 9	Synthesis Direct & Indirect Speech: Review of Weeks 7- 9 work	Editing homonyms	Comprehension 8 Timed reading and independent application of skills
Lesson 10	POST-TEST		

TERM 3 2013 FOUNDATION SCOPE AND SEQUENCE			
Lesson 1	PRE-TEST		
Lesson 2	Grammar Prepositions	Editing -es/-s	Comprehension 1 Basics and question analysis
Lesson 3	Grammar Pronouns 1	Editing Missing syllables / r-controlled vowels	Comprehension 2 Timed reading and main ideas
Lesson 4	Grammar Pronouns 2	Synthesis Number: and, both...and	Comprehension 3 Timed reading and main ideas
Lesson 5	Synthesis Condition: if	Editing Review of Suffixing rules	Comprehensions 4 Short passage and main ideas
Lesson 6	Synthesis Places and Things: where, which, that	Editing Which, where, etc.	Comprehension 5 Short passage and inferential questions
Lesson 7	Grammar Tenses – Present & Present continuous	Synthesis Reason : since	Comprehension 6 Short passage and inferential questions
Lesson 8	Grammar Tenses –Past & Past continuous Editing Irregular past tense	Editing /j/	Comprehension 7 Short passage and inferential questions
Lesson 9	Grammar Tenses –Present perfect & Present Perfect continuous	Synthesis People: who, whom	Comprehension 8 Timed reading and independent application of skills
Lesson 10	POST-TEST		

TERM 4 2013 STANDARD SCOPE AND SEQUENCE		
Week 1	PRE-TEST	Grammar: Tenses 1 Simple present/past
Week 2	Comprehension: 5W+1H, keywords and annotations	
Week 3	Editing: Syllable types	Grammar: Tenses 2 Present/past continuous
Week 4	Comprehension: Sharing of annotated paragraphs 1 (Pair)	Grammar: Tenses 3 Present/past perfect
Week 5	Synthesis & Transformation: Changes to punctuation and verb tenses (*Pre req: grammar tenses 1 - 3)	
Week 6	Synthesis & Transformation: Changes to pronouns and determiners	Editing: Words with y as a vowel
Week 7	Synthesis & Transformation: Time	Comprehension: Sharing of annotated paragraphs 2 (Pair)
Week 8	Synthesis & Transformation: Changes to references, positions references	Editing: Words with c, s, ck, k
Week 9	Comprehension: Sharing of annotated paragraphs (Individual) (*Pre req: Completed all other comprehension components) OR Synthesis & Transformation: Summary / Review (*Pre req: Completed all other S & T components)	
Week 10	POST-TEST	Review of Term 4 lessons conducted
Additional Activities	Grammar: Countable & uncountable nouns Subject verb agreement	Editing: Homonyms / Homophones Grammar (*Pre req: grammar tenses 1 - 3)

TERM 1 2014 STANDARD SCOPE AND SEQUENCE		
Week 1	PRE-TEST	Study Skills: Overview of Term 1 topics + Goal setting
Week 2	Editing 1: di and de	Synthesis & Transformation 1: Sentence Order
Week 3	Comprehension 1: Text annotation and Referring Words	
Week 4	Synthesis & Transformation 2: Introducing active and passive voice	Grammar 1: Past Participle
Week 5	Comprehension 2: Text Annotation and review referring words	Editing 2: Vowel team /e/ and /i/
Week 6	Grammar 2: Singular and Plural Possessives	Synthesis & Transformation 3 : Transforming active to passive voice
Week 7	Comprehension 3: Review referring words and analysing question types	
Week 8	Grammar 3: Possessive Adjectives vs Contractions	Synthesis & Transformation 4: Transforming passive to active voice
Week 9	Comprehension 4: Review analysing question types	Editing 3: Revision of /e/ and /i/ sounds <i>(optional)</i>
Week 10	POST-TEST	Review of Term 4 lessons conducted
Additional Activities	Synthesis & Transformation: Review 1	Grammar: Possessive Adjectives vs Possessive Pronouns & Review

TERM 1 2014 FOUNDATION SCOPE AND SEQUENCE		
Week 1	PRE-TEST	Study Skills: Overview of Term 1 topics + Goal setting
Week 2	Grammar 1: Singular and Plural Possessives	Synthesis & Transformation 1: Contrast 1 (although, even though)
Week 3	Comprehension 1: Text annotation and Referring Words	
Week 4	Synthesis & Transformation 2: Contrast 2 (despite)	Editing 1: di and de
Week 5	Comprehension 2: Text Types - Narrative & Informational - Identify key ideas, supporting details and represent them using graphic organisers	
Week 6	Grammar 2: Possessive Adjectives vs Contractions	Synthesis & Transformation 3: Contrast 3 (while)
Week 7	Comprehension 3: Question Words - 5W1H (Who, When, Where, What, Why, How) Identify 'Thin' & 'Thick' Questions	Editing 2: Vowel team /e/ and /i/
Week 8	Grammar 3: Possessive Adjectives vs Possessive Pronouns & Review	Synthesis & Transformation 4: Review 2 (Contrast 1-3)
Week 9	Comprehension 4: Review	Editing 3: Revision of /e/ and /i/ sounds <i>(optional)</i>
Week 10	POST-TEST	Review of Term 4 lessons conducted
Additional Activities	Synthesis & Transformation: Review 1	Grammar: Past Participle

PROGRAMME EVALUATION (PRE-TESTS AND POST-TESTS)

The pre-tests and post-tests had been carefully designed to inform Educational Therapists of their students’ progress for the term. These testing items were aligned to the knowledge and skills that were covered during the term. These tests were conducted in Week 1 and Week 10 of each term. We were very encouraged upon tabulation of results of our pre and post-tests. During our first term (Term 3, 2013), more than 70% of our students had an overall improvement of all components taught. These scores have been improving over the terms as reflected in the table below. By term 1, 2014, **ALL** of our students scored an equal or better score in their post-tests as compared to their pre tests. These consistent improvements in test scores are clear indications of the progress of our students after attending our programme every term.

EESP OVERALL PROGRESS

	Term 3, 2013	Term 4, 2013	Term 1, 2014
Standard	78% overall improvement	85% overall improvement	89.5% overall improvement
Foundation	71% overall improvement	(No foundation enrolment)	78% overall improvement

PROGRAMME EVALUATION (FEEDBACK)

The EESP team believes in tracking the progress of our students’ needs because it points us in the direction of our future curriculum development. We aim to continually assess, provide specific updates of learning needs identified and enhance the resources and materials for the students accordingly. Some positive examples of feedback from various Educational Therapists can be reflected in the success stories below.

SUCCESS STORIES FROM EDUCATIONAL THERAPISTS



Siti Halimah Binte Mohamed Yahaya
Senior Educational Therapist

"My Primary 6 student who attended the EESP in term 3 has improved tremendously in the 'Synthesis and Transformation' component. He used to score zero marks for that component but has since scored a three out of five for his prelims. I would strongly recommend this programme to other students as well!"



Shifa Binte Shekh Nahji, Senior Educational Therapist

"When Danny* first joined the programme, he will avoid Comprehension tasks. He refuses to attempt any questions let alone reading the passage. For his pre-test, he left blanks for the 'Comprehension' section. Danny was taught some techniques in tackling the 'Comprehension' section during the 10 weeks lesson. For his post-test, Danny is more motivated and attempted all of the comprehension questions. This was indeed an achievement."



Rachel Tan, Senior Educational Therapist

"My Primary 6 student, Sally*, has shown a marked improvement in terms of her scores in her examinations. She previously failed her English examination and had a score of 44 marks. For her preliminary examinations, she finally managed to pass with a score of 53 marks after a term of Exams Skills classes."



Siti Asjamiah, Educational Therapist

"One of my MAP students, Salina*, made huge improvements in her sentence structure. She demonstrates greater awareness of tense consistency and is able to apply the use of connecting words more accurately in her sentences. She is also able to tackle open-ended comprehension questions more accurately and confidently."



Edmen Leong, Senior Educational Therapist

“One of my students understood basic grammar concepts however he still got most of his grammar Multiple Choice Questions (MCQ) questions wrong. After completing our grammar components he was able to identify and highlight key words in the questions that gave him clues to answer questions accurately. He subsequently got most of his grammar activities right. When revisiting work he has done in the past, he got really excited when he was able to tell where and why he got his questions wrong.”



Tuty Elfira, Senior Educational Therapist

“I have observed that most of my students on the programme have shown marked improvement in terms of their ability to identify keywords when tackling ‘Synthesis and Transformation’ and ‘Comprehension’ questions. They are more aware of the need to change tenses and proofread their own work. I believe the explicit instructions given especially for ‘Synthesis’ have helped them to structure and phrase their sentences more

accurately.”

SUCCESS STORIES FROM STUDENTS

“I am more confident to do ‘Direct and Indirect speech’ and also ‘Comprehension’. I wish we can have Exam Skills class everyday!” – A Primary 5 student.

“I finally improve my ‘Editing’ section of my prelims paper! I want to learn more.” – A Primary 6 Student.

SUCCESS STORIES FROM PARENTS

“I am impressed that Jack's* English Exam has improved from a low grade C during prelims to achieving a B in PSLE. His comprehension has shown great improvement. I hope he will continue to apply the skills throughout his learning journey. Thank you DAS! ”

“I am very happy that Ken* has passed his English for PSLE. He has never passed his English before.”

"Thank you for your coaching. John* has shown significant improvement that he will be receiving his Edusave Good Progress award. We are very glad that he has applied his skills on his exam, especially English."

**Names changed to protect the confidentiality of students.*

CONCLUSION

It has been a meaningful and enriching learning experience for the EESP team both in developing, executing and evaluating the resources and students' progress during these three terms. The team will continue to adopt the following practices as we continue to develop the programme:

1. Weekly feedback to be given and discussed with regards to resources developed.
2. Conduct pre-tests and post-tests, gather feedback from Educational Therapists, students and parents to maintain the quality of our programme.
3. Continue developing relevant topics in line with the new mainstream syllabus for English Language.

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ABOUT THE AUTHORS



SHIFA BINTE SHEKH NAHJI

English Exam Skills Programme Manager and Senior Educational Therapist

Shifa's passion lies strongly in the special needs field. She has over 9 years of experience working and interacting with students with special needs - in MOE mainstream schools, Special Schools as well as the Dyslexia Association of Singapore (DAS). In addition to a Bachelor of Arts (Hons) in English and Psychology, her other professional qualifications include a Diploma in Special Education from the National Institute of Education (Singapore), a Diploma in Dyslexia Studies from Dyslexia Association of Singapore (DAS) and a Post-Graduate Certificate (Merit) in Specific Learning Differences from London Metropolitan University. She is also trained in the Orton-Gillingham approach at DAS. As a DAS Senior Educational Therapist, she is currently developing the DAS English Exam Skills Programme in her capacity as Programme Manager since 2012.



EDMEN LEONG

Senior Educational Therapist

Edmen joined DAS as an Educational Therapist in 2010 after completing his degree in Psychology and Linguistics in the University of Western Australia. He has since completed his Post-Graduate Certificate in Specific Learning Differences with London Metropolitan University. He is currently pursuing his Masters of Arts in Applied Linguistics with the National Institute of Education Singapore. He is also an Associate Fellow with the Register of Educational Therapists (Asia).

In addition to his role in teaching students in the MOE-aided Literacy Programme and the English Exam Skills Programme in DAS, Edmen actively contributes to the Exam Skills team as a core member by developing the curriculum and resources used in the programme. His interest in research also benefited the team especially in their programme evaluation and adaptation. Edmen's strong interest for languages and research, and love for children fuels his passion in contributing in the DAS, as well as in the field of language and special education.

ENGLISH EXAM SKILLS PROGRAMME

The aim of the SES English Exam Skills Programme (EESP) 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 English Exam Skills Programme (EESP) provides an extension to the MOE-aided DAS Literacy Programme (MAP). Students will be exposed to various language components and will be equipped with strategies to cope with their English examinations.

The components covered in our programme include:

- Grammar
- Editing
- Synthesis & Transformation
- Comprehension

Recommended for students with difficulties in various English exam components such as Synthesis & Transformation and Comprehension.

The curriculum is carefully designed and frequently evaluated by the EESP team to ensure that it caters to the students' needs and school curriculum demands. Lessons are in line with the MOE English Language Syllabus, and in reference to the Orton-Gillingham principles.



Entry Criteria

Application is open to:

- Primary 3 and 4 students
- Primary 5 and 6 Standard and Foundation students
- Students should have reasonable reading fluency



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UNLOCKING POTENTIAL

SPEECH AND DRAMA ARTS

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

OUR APPROACH

Using drama activities, students get opportunities to enhance their persuasiveness and confidence in communication. Students are given the freedom to express themselves freely, using their imagination and creativity. Other vital communication skills that are fostered in the class setting includes listening and concentration. Activities ranging from role-playing to stage performances require students to understand the fundamentals of stage directions, character dialogues, music and light cues. To stage a production necessitates the child to understand and interpret the script, process the script in-depth. This allows them to work on the working memory and processing speed.

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

The SDA programme consists of 4 different modules catering to 2 age groups

- ◆ Creative Drama Programme (7 - 8 years old)
- ◆ Drama for Performance Programme (9 - 12 years old)

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

Specialised Educational Services

Speech and Drama Arts

Pushpaa Arumugam

Assistant Director, SES Enrichment Programmes

Dyslexia Association of Singapore

INTRODUCTION

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

We recognise that Drama is a powerful tool for self-development and we would like to give dyslexic students the opportunity to increase their self-esteem through our structured drama classes focusing on language development, communication skills and personal experiences.

Apart from building our students literacy abilities in reading, spelling and writing, enrichment programmes, such as Speech and Drama Arts, are beneficial for students with dyslexia.

THE PROGRAMME AND ITS OBJECTIVES

Understanding the background and characteristics of our dyslexic students has allowed the Speech and Drama Arts team to develop a programme that would enhance the students' learning journey and to discover their own potential.

Identifying their inner strengths and hidden talents to boost self-esteem

"Undermining a child by destroying their self esteem will have a significant effect on their potential to learn and their success in life. Dyslexic children need to feel supported in order to succeed." (Eadon, 2005)

Dyslexia does not only affect the academic component of learning – literacy, but also emotional well-being of a student (Eadon, 2005; Thomson, 2009). Thomson (2009), 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).

Develop effective communication and presentation skills

The majority of our students have difficulties in expressing or communicating their thoughts. Our objective is to enhance persuasive and confident communication with our students with dyslexia. Some of the activities in our drama classes will help our students to enunciate words clearly and effectively to convey their intended message. For example, activities such as role-play provides stimulation in learning conversational interactions. Such activities will be a platform for learners to express themselves freely with the use of the language while incorporating imaginative skills. In this way, our students would be able to make human sense of communicative acts, and shows them how they can present themselves to support the words they use (Winston, 2012).

Developing Literacy Skills

The Dyslexia Association of Singapore (DAS) recognise Speech and Drama Arts as an effective pedagogy to develop our students' language skills such as reading, writing, speaking and listening by creating a suitable context.

Through drama, language learning becomes 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 kinaesthetic language allows students to retain a particular learning experience firmly in their minds (Chang, 2012). Also, the 'malleability' of the learning process enable teachers to swiftly respond and adapt to any student's comments, questions or ideas (Chang, 2012).

The presence of other co-occurring difficulties in children with dyslexia such as dyspraxia, dyscalculia, attention deficit hyperactivity disorder (ADHD), social, emotional and behavioural disorder (SEBD) and specific language difficulties worsen the

“... our goal is to provide an outlet for our students with dyslexia to use language in a fun, creative and engaging setting.”

already complex process of learning language (Everatt, Week and Brooks, 2008; Thomson, 2009). Chang (2012), suggests that the playful nature of Drama is advantageous in preparing students to express their thoughts and learn to take risks.

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

Enhancing Students' Listening and Concentration Skills

Ranging from classroom lessons such as role plays to stage performances, students are required to understand the fundamentals of stage directions, character dialogues, music and light cues. Hence, listening and concentration skills are vital for an actor. Thus, our drama programme will, with no doubt help such dyslexic students.

Drama for Personal Growth

Putting language into action will give the students an opportunity to become physically and linguistically part of the story by assuming roles of the characters and imagining they are facing the similar problems (Palechorou and Winston, 2012). Other than building rapport among students and teachers through activities, we create opportunities for students to:

- ◆ discover their strengths and weaknesses,
- ◆ re-consider their thoughts, attitudes and their feelings in the light of shared experience with their peers.
- ◆ learn to work together, to cooperate, to contribute, and to listen to and accept the viewpoints and contributions of others.
- ◆ to be team-oriented

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.

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 which is practiced by our Educational Therapists in ELA teaching. The SDA programme combines both approaches. Table 1 below shows how we use the MI theory in our speech and drama classroom activities.

MULTIPLE INTELLIGENCE (MI) THEORY

According to Howard Garner's theory of Multiple Intelligences every learner possesses many intelligences despite the learner being more responsive to visual cues or kinaesthetic approaches (Baldwin and Fleming, 2003). Table 1 provides an overview on how Drama, as a teaching and learning medium, utilises and develops multiple intelligences in our students.

In ideal multiple intelligences instruction, rich experiences and collaboration provide a context for students to become aware of their own intelligence profiles, to develop self-regulation, and to participate more actively in their own learning. (Moran, Kornhaber & Gardner, 2006)

Gardner's Theory of Multiple Intelligences provides a theoretical foundation for recognising the different abilities and talents of students (Gardner, 2003; Pearson, 2001). This theory acknowledges that while all students may not be verbally or mathematically gifted, children may have an expertise in other areas, such as music, spatial relations, or interpersonal knowledge (Moran et al., 2006; Baldwin and Fleming, 2003). Approaching and assessing learning in this manner allows a wider range of students to successfully participate in classroom learning.

Table 1 Multiple Intelligence (MI) Theory

INTELLIGENCE TYPE: VERBAL-LINGUISTIC <i>Ability to understand and use language both written and spoken. A sensitivity to the meaning of words and the different functions of language. (writers, poets, orators, lawyers)</i>		
Learns Best Through	Type of drama activity	Example
Reading, Listening, And Seeing Words, Speaking, Writing, Discussing and Debating	Thought-tracking and monologue, extended dialogue, script-writing, explaining ideas to the group, using different language registers	Creating stories, writing scripts. Vetting and analysing a script. Acting: Speaking as the character using various registers.
INTELLIGENCE TYPE: LOGICAL-MATHEMATICAL <i>Ability to use inductive and deductive thinking, numbers, and abstract patterns. Often referred to as scientific thinking-comparing, contrasting, and synthesising information (scientist, mathematician)</i>		
Learns Best Through	Type of drama activity	Example
Working With Patterns and Relationships, Classifying, Categorising, Working with the Abstract	Thinking and planning the use of space, sequencing of scenes, implications of the actions of characters, dividing into groups for working, using and planning lighting for scenes	Analysing a script for creating stage setting. Problem solving: For example, How many people will be needed for this scene? How can we show the two families when they get the bad news? What is likely to happen after the boy returns home late? How can we organise the lighting for these three scenes? for these three scenes?
INTELLIGENCE TYPE: MUSICAL <i>Ability to discern meaning in or to communicate with tonal patterns, sounds, rhythms, and beats (musicians, composers)</i>		
Learns Best Through	Type of drama activity	Example
Picking up sounds, Rhythm, Melody, Singing, Listening to music	Responding to music to create atmosphere for a scene, keeping up a tempo/rhythm in synchronised work, awareness of vocal pitch and tone	Working on a sequence of movements to keep time with the music/rhythm for a synchronised sequence. Recognising (and using) a variety of vocal tones, pitches, and pace for a particular character. Can be well verse in creating / directing a musical theatre piece or acting in it.

<p>INTELLIGENCE TYPE: INTRAPERSONAL <i>Ability to self-reflect and have an awareness of one's own internal state of being. Ability to define one's own feelings as a means of understanding and guiding one's behaviour. (psychologist, motivational speaker, counsellor)</i></p>		
<p>Learns Best Through</p>	<p>Type of drama activity</p>	<p>Example</p>
<p>Doing Self-Paced Projects, Reflecting, Understanding Strengths and Weaknesses and Setting Goals</p>	<p>In groups being able to point out how they respond to a stimulus prior to working with it, as individuals expressing the inner motivations of themselves in relation to a character</p>	<p>Responding to the reflective aspects of a session in being able to apply a feeling or situation to themselves eg Who has felt like this character at any time in their life? During planning - 'I think the character might be feeling... because I would feel....'</p>
<p>INTELLIGENCE TYPE: INTERPERSONAL <i>Ability to make distinctions among other individuals in regard to their moods, motivations, and temperaments; and to communicate with others. (politicians, leaders, counsellors, coaches, directors)</i></p>		
<p>Learns Best Through</p>	<p>Type of drama activity</p>	<p>Example</p>
<p>Sharing, Comparing, Relating, Interviewing, Cooperating, Organising and Leading</p>	<p>Recognising and responding to the situations and stimulus of drama through awareness of moods, atmospheres, feelings, and with an awareness of facial expression, body language in both the actuality of the group and in the drama process</p>	<p>Show how this character would enter the situation if s/he knows that s/he will be accused of stealing the money. Seeing the signals of the character when asked - How did you know that the character was scared even though he was smiling? In group planning - We need to show the woman flirting with the man without other people knowing.</p>
<p>INTELLIGENCE TYPE: BODILY –KINAESTHETIC - SPATIAL <i>Ability to use and understand physical movement. A mastery over body movement or the ability to manipulate objects with finesse. (athletes, instrumentalists, dancers, surgeons)</i></p>		
<p>Learns Best Through</p>	<p>Type of drama activity</p>	<p>Example</p>
<p>Touching, Moving, Processing Knowledge Through Bodily Sensations, Dancing, Acting and Using Tools</p>	<p>Physical abilities - holding postures, creating a variety of gestures, balancing, moving in a variety of sequences and styles, using mime. Using space, creating groupings, diagrams of set designs, use of colour for costumes and sets, use of lighting effects for the space, using a variety of levels/ rostra blocks</p>	<p>Still-image work holding a posture/ gesture, Walking and moving in the manner of an old person answering the door. Draw the set from above showing the exits and where the chairs need to be placed for the character to remain important to the audience. Decide on which elements of the set need to be in the spotlight to show the character's monologue.</p>

ORTON-GILLINGHAM APPROACH

Other than the MI Theory, SDA programme incorporated the Orton-Gillingham (OG) approach in our teaching, similar to MOE-Aided DAS Literacy Programme (MAP) as we are catering to same target group, that is children with dyslexia.

The OG approach consists of these six principles :

- ◆ **Language based** - exposure to different texts in order to enhance students' appreciation of the English language through Drama
- ◆ **Cognitive** - the activities are crafted to engage their cognition eg. improvisation, role play, creative story writing
- ◆ **Structured, sequential and cumulative** - includes direct and explicit instruction and has different range of difficulty level for all activities
- ◆ **Simultaneous multi-sensory** - presentation of skills through multiple senses eg. using visual and aural cues
- ◆ **Diagnostic prescriptive** - Drama Instructors regularly assess students' abilities
- ◆ **Emotionally sound** - Drama Instructors to adapt activities according to the class dynamics.

HOW DO WE ENSURE AND EVALUATE THE QUALITY OF OUR SPEECH AND DRAMA ARTS PROGRAMME?

- 1) Placement of Students
- 2) Quality of our Curriculum / Lesson Plans
- 3) Teaching Quality of our Drama Instructors
- 4) Pre and Post Emotional Literacy Assessment based on Southampton Emotional Literacy Scale
- 5) Evaluating our Students after each drama component is covered
- 6) Parents' Feedback
- 7) Students' Feedback

1. PLACEMENT OF STUDENTS PRIOR TO THE START OF THE CLASS

This is to help the drama instructor in class management know the needs of the group and use the appropriate teaching methodologies.

Students from primary 1 to primary 6 are placed in our programme. Lower primary students and upper primary students are placed separately. There will be a maximum of 8 students in a class.

The Educational Therapists teaching the ELA programme, are required to complete the following information so that the drama instructors have prior knowledge about the students.

Information Required		Input by Educational Therapists
1	Banding (Based on the last CBA testing)	
2	How would you grade the student's speed of learning? For example, ability to read ORT books? (Fast, Mid, Slow)	
3	What type of learner do you think he/she is? (Visual, Audio, Kinesthetic, Tactile)	
4	Is the student on any status? (STAR Plus, IEP)	
5	Any other comments about the student and his / her learning needs?	

2. CURRICULUM

The SDA programme is modular and caters to students aged between seven and 12. During each term, students learn about specific Drama strategies such as Role-Play, Improvisation, Storytelling, Poetry Appreciation, Script writing and Story writing. Students also learn about Play building and script reading.

A Certificate of Participation will be presented to all students upon completion of each module.

The Speech and Drama Arts curriculum can be found in Table 2.

Table 2. SES - SPEECH AND DRAMA ARTS (SDA) CURRICULUM

	FOR AGES 7 - 8 YEARS OLD	FOR AGES 9 - 12 YEARS OLD
TERM 1	MODULE 1: Exploring Voice & Emotions through Choral Reading	MODULE 1: Exploring Voice & Emotions through Readers' Theatre
	What is Drama? & Pictures Alive! (Tableaux)	What is Drama? - Image Theatre
	Exploring Voice Production - PPPIT	Exploring Breathing and Voice Techniques
	Emotions (Vocal & Physical Delivery)	Voice & Acting: Using Poems
	Introduction to Choral Reading (the 4 styles)	Expressing Emotions
	Expressive Voice Through Poetry and Choral Reading	Introduction to Readers Theatre
	<i>Short Performance for Parents:</i> Choral Recitation	<i>Short Performance for Parents:</i> Readers Theatre
TERM 2	MODULE 2: Dramatic Storytelling	MODULE 2: Improvisation
	Expressing Emotions through Voice	Object Improvisation
	Whose Story? (Skills: Verbal Expression)	Character Improvisation
	Story Web (Skills: Speaking & Listening)	Portraying Characters (based on the script given)
	Tell it Again (Skills: Speaking & Listening)	
	<i>Short Performance for parents:</i> Dramatising Stories	<i>Final Performance for parents:</i> Improvised Drama
TERM 3	MODULE 3: Role Play and Improvisation	MODULE 3: Creative Poetry, Story and Script Writing
	Role Play: based on Stimuli	Poetry Writing
	Role Play: Theme based	Story Writing
	Role Play: Characterisation	Script Writing
	<i>Short Performance for parents:</i> Short Drama	<i>No Performance</i>
TERM 4	MODULE 4: Playbuilding Towards Performance	MODULE 4: Playbuilding Towards Performance
	Introduction to play scripts	Playbuilding Skills: Script Analysis and Characterisation
	Exploring Characters through Voice & Emotions	Playbuilding Skills: Stage Directions
	Introduction to Poetry Theatre	Playbuilding Skills: Exploring Props and Costume Ideas
	<i>Final Performance for parents:</i> Short Drama incorporating all skills learnt in the 4 modules	<i>Final Performance for parents:</i> Short Drama incorporating all skills learnt in the 4 modules

3. QUALITY TEACHING OF OUR DRAMA INSTRUCTORS:

The Programme Director completes a class observation and provides feedback and mentorship.

Training Path for New Drama Instructors

Objective of the training:

1. To equip them with drama and theatre skills.
2. To learn the nuances of drama pedagogy
3. To be able to deliver DAS's specialised drama curriculum

Our training programme runs over a span of 10 weeks. Trainees will be equipped with the essential drama skills, theoretical knowledge, lesson planning and drama pedagogy.

How are the trainees assessed?

Lesson Plan: Create a lesson plan on any theme, incorporating Drama as a tool. The lesson plan must be an hour long and must include a brief/rationale of at least 300-500 words.

Practicum: Present part of the lesson plan, that is about 25 minutes. The lesson will be recorded for analysis and reflection.

Reflective Essay: A self-analysis of the trainee's lesson plan and style of delivery. To discuss his / her sense of self-efficacy and the strengths and weaknesses of his / her lesson. To be written in not less than 500-700 words.

Journal: To write down the trainees thoughts and what he/she had learnt in a journal after every lesson. The journal must be submitted along with his/her Reflective Essay.

STUDENTS EVALUATION PROCESS

During the evaluation process, these are some of the questions that the SDA Drama Instructors would have to consider:

What are our objectives for the programme?

- ◆ Enhance students' concentration skill
- ◆ Develop and enhance imagination and creativity
- ◆ Help identify students' inner strengths and inner talents
- ◆ Develop effective communication and presentation skills
- ◆ Increase proficiency in English language
- ◆ Increase confidence and build self-esteem

Student's Progress Report

Students are evaluated on the tenth session based on the skills taught in each module.

- ◆ Using rubrics students are evaluated for skills taught by the tenth lesson
- ◆ Observations by teachers during class for lessons one to nine and the final performance.

Besides this, the SDA team aims to promote Emotional Literacy through the Speech and Drama Arts Programme, Pre and Post evaluations are also conducted based on the Southampton Emotional Literacy Scale.

Emotional Literacy is an essential life skill and it improves social-emotional learning competencies that support academic performance.

Table 3: Sample of Rubrics used to evaluate our students

DAS SPEECH & DRAMA ARTS RUBRICS FOR PANTOMIME				
	POOR 1	FAIR 2	GOOD 3	EXCELLENT 4
Movement/ Blocking	There is awkward, movement. Not well thought out.	There is movement but it is inconsistent with the scene or character, or several times the movement is lacking.	Movement is smooth, adds to the depth of character, and is interesting to the audience.	Movement is very innovative, adds greatly to the depth of character, and is interesting to the audience.
Character- isation	Performer did not have a distinct character and broke character several times.	Performer had a fairly distinct character and tried to stay in character through most of the performance.	Performer had a distinct character and stayed in character through almost all of the performance.	Performer had a distinct character and stayed in character throughout the performance.
Emotional Commitment	A weak character, one dimensional. Very little focus, very little emotional levels and variety.	A good character, with emotional levels. Very few spots were lacking focus.	A good character, some emotional levels. A couple of spots were lacking focus.	A well developed character, with a variety of emotional levels and good realism.
Preparedness	Student sometimes appears uncomfortable or awkward and it is sometimes hard to see the environment or understand the story line.	Student is comfortable with the piece most of the time but there are times when body and facial expression are inconsistent with the storyline or the environment.	Student is comfortable with the piece and had good use body and mask to propel the story and give a sense of the environment.	Student has achieved ownership and used body and extremely well to propel the story and give a sense of the environment.

Table 4: Sample of Student's Progress Report

SPEECH AND DRAMA ARTS—MODULE PROGRESS REPORT			
Student Name:		Learning Centre:	
Module:	<i>Creative Story, Poetry & Script Writing</i>		
Drama Instructor :		No. of lessons:	10

Topics covered:

1. Introduction to Poetry & Poetry Writing
2. Story Writing/ Story Building / Story Development
3. Introduction to Script Writing

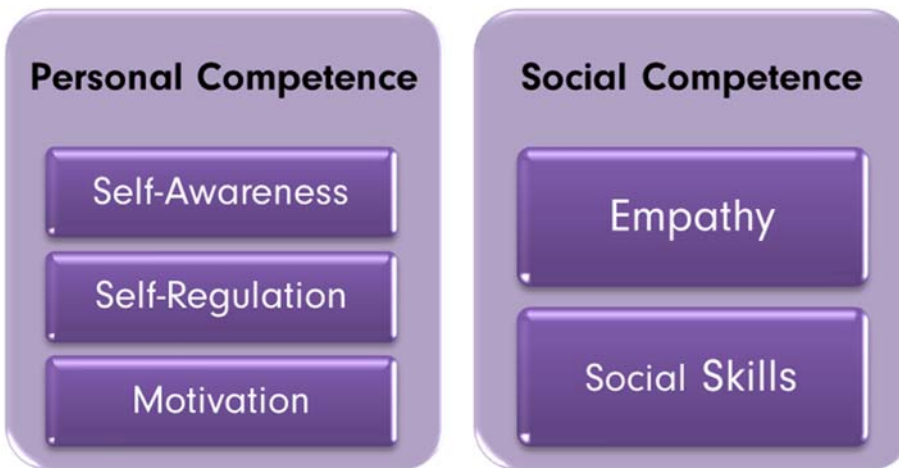
Mastery	Poor (1)	Fair (2)	Good (3)	Excellent (4)
1. Writing Behaviour				
2. Ideas & Creativity				
3. Organisation & Transition				
4. Use of Language				
5. Poetry Writing				
6. Enactment (<i>presenting written work</i>)				
7. Storyboards				
8. Script-writing (<i>plot</i>)				
9. Script-writing (<i>structure</i>)				
10. Teamwork				
Points: (Max. 40)				
Overall Comments				
Name of Drama Instructor		<i>Pushpaa Arumugam, Assistant Director—SES Enrichment Programmes</i>		

WHY DO WE USE SOUTHAMPTON EMOTIONAL LITERACY SCALES (SELS)?

Southampton Emotional Literacy Scales (SELS) would promote:

- ◆ a strong sense of self and an empathic awareness of others
- ◆ awareness of the role and power of emotions in learning and decision-making
- ◆ a sound basis for their values and morality
- ◆ collaboration and cooperation with others
- ◆ building resilience

Table 4: Components covered in SELS



PARENT FEEDBACK

Some of the parents comments we have received about the impact of our Speech and Drama programme on their children.

"*Victor** wants to go for the drama class even if he is sleepy because he is enthusiastic about the programme"

"*Kenny** is now more focus and confident"

"*Cheryl** is more confident and better able to take turns"

"The programme has helped *Albert's** reading and pronunciation"

"I am impressed that the kids came up with their own 'play' - USS ...so wonderful!!"

*Andy** looks forward to the next term of FUN"

"We can see *Zac's** confidence level has improved compared to last time"

"My son, *John**, attended the Speech and Drama Arts (SDA) programme since it first started in August 2013. He enjoys the interactions with other children, learnt language in creative ways and improved communications. I am pleased that DAS has started the SDA programme last year. Thank you for the initiative."

**Names changed to protect the confidentiality of students.*

FEEDBACK FROM OUR SPEECH AND DRAMA ARTS TEACHERS



AMRIT KAUR GILL

Educational Therapist & Drama Instructor

"I am extremely delighted to share that majority of the students in the Speech and Drama Arts programme have shown great improvement in their communication and presentation skills. When they initially step into our programme, they experience difficulties in expressing themselves, managing their emotions and working together as a team. However, over the terms with an active learning approach in our classrooms has proven to be beneficial to these students. They now demonstrate better articulation skills, and work well as a team. Credit goes to our teaching methodology that allows the students to express their thoughts and ideas confidently in a safe environment without any inhibitions. This positive change is indeed commendable."



MUZDALIFAH HAMZAH

Educational Therapist & Drama Instructor

"Reminiscing the time when the SDA Team had its first meeting back then in November 2012, our passion and dedication was focused towards building the social-emotional development of our students so that they would be 'bold and courageous' to pursue more successes in life. Today, our programme has developed further and groomed students in line with our initial objectives.

Through the non-intimidating nature of Drama, our students experiment with roles and values, while gaining self-awareness

and discovering their own voice. Infused with stimulating activities, our programme promotes the active learning of literacy skills which benefits our students in different areas of development.

Honing their skills and being able to grade their progression each term is truly a privilege for me. Undeniably, it was not an overnight success story for these children. Our students had put in a lot of effort and hard work every lesson, alongside with their Drama Instructors. Kudos to their parents for being so supportive!

CONCLUSION

Based on the premise of improving the social-emotional competencies and the literacy skills of our students, the SDA Team aims to work towards the continuous improvement of our specialised Drama programme catering to the specific needs of students with dyslexia.

Moving forward, the SDA team will be conducting trial classes for students to experience the wonders of drama. The trial classes will culminate with awareness talks for parents to understand the benefits of our specialised drama programme.

ACKNOWLEDGEMENTS

Special thanks to all SDA Team members, Muzdalifah Hamzah, Educational Therapist & Drama Instructor, Soofrina Mubarak, Educational Therapist & Drama Instructor and Amrit Kaur, Educational Therapist & Drama Instructor for their contributions and dedication in this programme.

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ABOUT THE AUTHOR



PUSHPAA ARUMUGAM

Assistant Director, SES Enrichment Programmes

Pushpaa is the Assistant Director for SES Enrichment Programmes. She has years of experience conducting enrichment courses for Kindergarten, Primary, Secondary, Junior College and Tertiary students. Pushpaa has obtained her Bachelor of Performing Arts majoring in Drama & Theatre Studies at Monash University, Australia in 2004. She is a National Arts Council Theatre Grant Award Recipient for the years 2001 – 2003. She has also obtained a Diploma in Educational Studies (Enrichment Education), accredited by The College of Teachers, UK.

Here at DAS, we recognise Speech and Drama Arts as an effective means of developing our students' talents, and self-confidence. Pushpaa's objective is to provide a channel specifically for our dyslexic students to develop their language skills, express their inner feelings, and demonstrate their talents in a fun and artistic way.

**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 and 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.

Specialised Educational Services

Speech and Language Therapy

Shuet Lian Ho

Senior Specialist Speech and Language Therapist

Dyslexia Association of Singapore

INTRODUCTION

The Dyslexia Association of Singapore (DAS) recognises the importance of Speech and Language therapy for the diagnosis and intervention of specific learning differences in the Singapore mainstream school population. Currently, DAS has five Speech and Language Therapists (SLTs) of which two are senior therapists. They work across seven learning centres to serve a percentage of the student population who are diagnosed with dyslexia and attending DAS classes across Singapore.

At the DAS, SLTs work on improving listening, understanding and speaking skills which are critical components in the development of language in children whereas the Educational Therapists work on improving the children's reading and writing (literacy) skills which are critical in the development of written language.

Several studies (Bishop & Adams, 1990; Lombardino, Riccio, Hynd, & Pinheiro, 1997; Scarborough & Dobrich, 1990; Stothard, Snowling, Bishop, Chipchase, & Kaplan, 1998; Tallal, Curtiss, & Kaplan, 1989) have found evidence to explain the association between language impairment and reading disability. Catts and Kamhi, 1999 pointed out that language problems are a major component of almost all cases of reading disabilities, while Catts, Fey, Zhang & Tomblin, 1999 found that language problems are sometimes the cause of reading disabilities. Snow, Burns & Griffin, 1998 reported that language problems are a consequence of reading disabilities.

In 2010, the American Speech-Language-Hearing Association (ASHA) issued an official policy statement addressing the roles and responsibilities of speech-language therapists. The statement has highlighted the interrelationship between language and literacy. It states that "Current 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 for school failure, or those who struggle in school settings.”

Hence, without remediating their speech, language and communication needs (SLCN), these students may not be reaching their full potential in accessing the MOE Aided Literacy programme (MAP) at DAS as well as the mainstream curriculum at school.

DAS SLTs also work with children who are diagnosed with other learning difficulties such as dyspraxia, speech and language impairment and/or autism spectrum disorder.

OBJECTIVES

Children with language and literacy needs require speech and language therapy to enable them to:

1. access the MAP and other SES programmes at the DAS
2. access the MOE mainstream curriculum
3. achieve functional communication

HOW TO DETERMINE THAT A CHILD NEEDS SUPPORT FROM THE SLT?

Studies have shown that speech, language and communication disorder can co-exist with dyslexia, in particular Specific Language Impairment (SLI). Many students with SLI meet the diagnostic criteria for dyslexia (Bishop & Snowling 2004).

Specific Language Impairment is diagnosed where a student has an average intelligence but the verbal scores fall below average. This profile is consistent with that of a student with dyslexia. Therefore a referral from the MOE/DAS Psychologists to a SLT may be required for further investigation. Formal and/or informal assessments are administered by the SLT to diagnose speech, language and communication disorder as well as to determine whether speech and language intervention is required. The latest categories of speech, language and communication disorders in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) which a fully qualified Speech and Language Therapist can diagnose and treat include Phonological disorder, Stuttering, Specific Language Impairment, Speech-sound disorder, Childhood onset fluency disorder and Social (pragmatic) communication disorder.

At the DAS, we take a multidisciplinary approach to assessment as it is widely accepted as proper practice.

SPEECH AND LANGUAGE THERAPY

Speech and language therapy is conducted individually or in small groups of two to three students. It is tailored to meet the SLCN of a child so that the child will be motivated to learn. SMART therapy targets are set to enable the child to succeed.

Specific	Tailor made to your child's needs
Meaningful	Useful and functional targets
Agreed upon	By parents and child
Realistic	Achievable within the block of therapy
Time	Therapy can be evaluated and progress is measured

EVALUATION OF STUDENTS' PROGRESS

To determine if students had benefited from attending speech and language therapy, a pre-intervention test and a post-intervention test were done to measure each student's progress. Two subtests were selected from the widely used standardised assessment tool known as Clinical Evaluation of Language Fundamentals 4th Edition UK (CELF-4UK) to get an overview of each student's ability to understand and use spoken language.

Concepts and Following Directions subtest was used to measure the student's ability to understand spoken language (receptive language skills). This subtest requires the child to comprehend and follow increasingly complex instructions that include language-based concepts, such as coordinating conjunctions (and, or, but), time (when, after, before), quantity (one, none) and sequence (first, middle, last). An example would be "Point to all but one of the shoes." These abilities are needed for following classroom instructions, activities and interaction.

Formulated Sentences subtest was used to measure the student's ability to use spoken language (expressive language skills). This subtest requires the child to plan and make sentences using given words with reference to a picture. This ability to use words in a precise manner is required in story-telling, writing compositions, sentence completion tasks and other literacy activities.

The pre-intervention test was conducted during the first therapy session and the

post-intervention test was conducted after 20 hours of intervention. One student was tested at a time. The same subtests, namely Concepts and Following Directions and Formulated Sentences were used in the pre- and post-intervention tests. In addition, pre- and post-intervention Student Questionnaires, pre- and post-intervention Parent Questionnaires as well as pre- and post-intervention Educational Therapist Questionnaires were administered. A copy of the questionnaire is shown in Appendix A, B and C respectively. When parents were not able to understand the questionnaire, the SLT would explain or translate the questionnaire to a language which the parents could understand to ensure that the questionnaires were completed meaningfully.

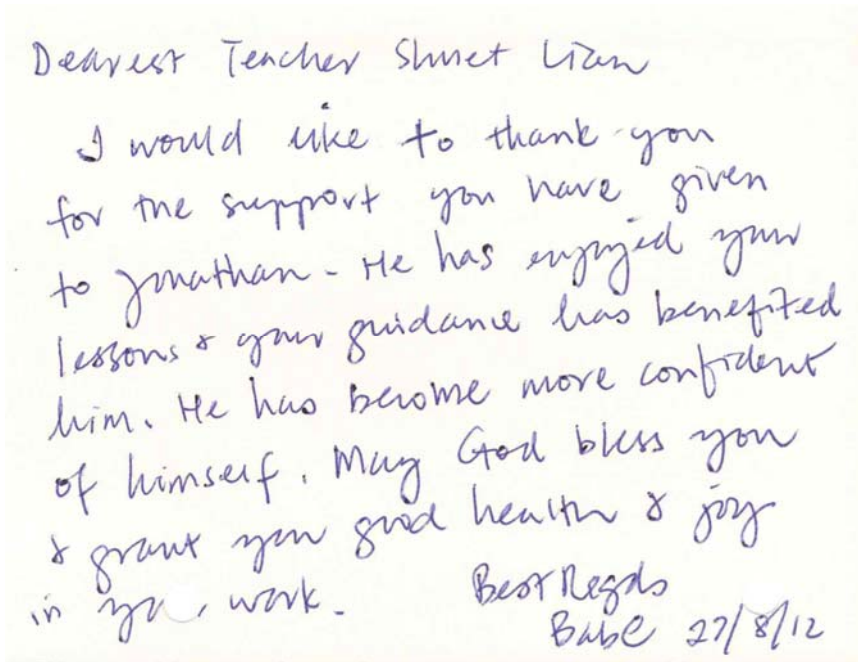
A total of 42 students were tested. 40 students attended one hour of speech and language therapy weekly over 20 weeks and two students attended two hours of speech and language therapy weekly over 10 weeks.

While these students were attending speech and language therapy, 36 of them also attended a 2-hour weekly literacy programme which was taught by the Educational Therapists at the DAS. The remaining 6 students attended only speech and language therapy during the 20 weeks of intervention.

TEST RESULTS

	Percentage of students who showed improvement (%)
Concepts and Following Directions	78
Formulated Sentences	73
Student Questionnaire	61
Parent Questionnaire	86
Educational Therapist Questionnaire	67

SUCCESS STORIES FROM PARENTS



"I would like to share a piece of good news with you. Zach has passed his PSLE with grade B for his English which is totally unexpected. Overall aggregates is 180 which is much higher than his set target. He was so surprised with his results and so do I.

Thank you once again. He enjoyed your class very much and has gained more confidence since."

Mrs Ho—Parent of Primary 6 student

"He seems more confident and now he talks more clearly. He thinks as he talks. Slowly but surely he has improved in the way he communicates in school and with his friends."

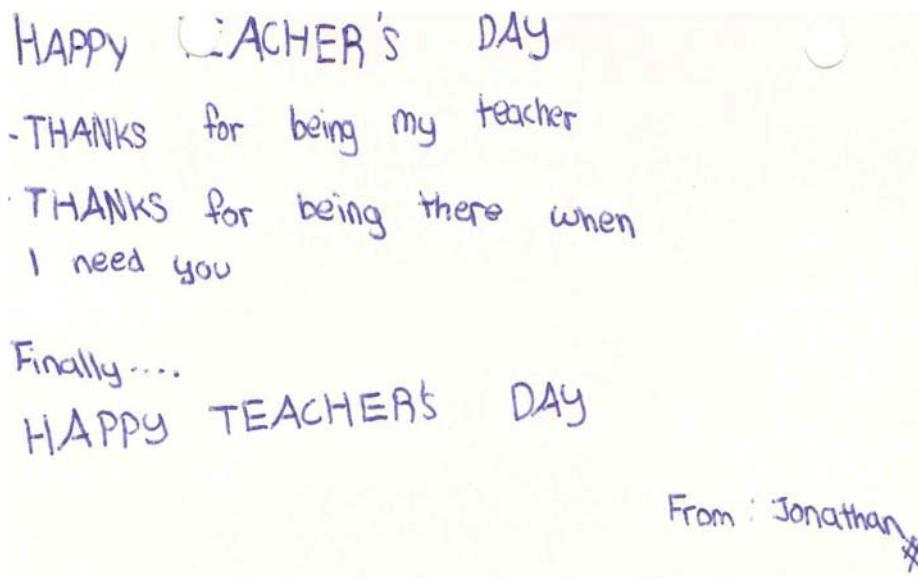
Mdm Aminah—Parent of Primary 6 student

THANK YOU MESSAGES FROM STUDENTS

"I have learnt that my pronunciation of some words is unclear because I can't hear some sounds accurately. In therapy, I learnt to identify and join the different sounds that form words. I also learnt that one way to improve my listening comprehension is to have an image or picture in my head as I listen to what people are saying since I tend to forget the words easily.

I find it easier to communicate with my friends now as I am better able to understand what they are saying. It was really difficult for me to have friends in school as I don't know how to talk to them. I don't have the confidence to approach them too. Since last year, I made two close friends whom I can share my thoughts with. My classmates told me that they can better understand what I am saying now. I no longer fear so much when I have to talk to others."

Secondary 3 Student



CONCLUSION

The SLT team will continue to develop, execute and evaluate speech and language therapy approaches as well as teaching resources to optimally support children with different learning needs. The team will adopt the best practices that have shown apparent improvement in children's speech, language and communication skills post intervention. The team will continuously improve their knowledge and skills by attending workshops, focus group discussions and talks within the given training budget.

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APPENDIX A

DYSLEXIA ASSOCIATION OF SINGAPORE
Speech and Language Therapy
STUDENT QUESTIONNAIRE

Student's name: _____

Educational Level: _____

Learning Centre: _____

Speech-Language Therapist: _____

Date: _____

	Never	Sometimes	Often	Always
I can remember the things that people say.				
I can say what I am thinking of.				
People understand what I say all the time.				
I know when to ask a question.				
I enjoy my class with Teacher xxxxxx.				

APPENDIX B

**DYSLEXIA ASSOCIATION OF SINGAPORE
Speech and Language Therapy**

PARENT QUESTIONNAIRE

Parent's name: _____

Student's name: _____

Educational Level: _____

Learning Centre: _____

Speech-Language Therapist: _____

Date: _____

	Never	Some-times	Often	Always
My child uses words that are unclear in their descriptions (e.g. this thing, that one, go there)				
My child struggles to find (think of) the right words to say.				
My child struggles to tell me what has happened in an event.				
My child can remember the things that I say.				
My child is able to talk about the same topic in a conversation.				
My child's answers are related to what I asked.				
When my child does not know something, he/ she asks what it is.				
My child looks forward to attend Teacher xxxxx's class.				

Other comments before/after speech-language intervention:

APPENDIX C

**DYSLEXIA ASSOCIATION OF SINGAPORE
Speech and Language Therapy
EDUCATIONAL THERAPIST QUESTIONNAIRE**

Educational Therapist: _____

Student's Name: _____

Educational Level: _____

Learning Centre: _____

Speech-Language Therapist: _____

Date: _____

	Never	Some-times	Often	Always
1. This child uses words that are unclear in their descriptions (e.g., this thing, that one, go there)				
2. This child struggles to find (think of) the right words to say.				
3. This child struggles to say what has happened in an event.				
4. This child can remember the things that I say.				
5. This child is able to talk about the same topic in a conversation.				
6. This child's answers are related to what I asked.				
7. When this child does not know something, he/she asks what it is.				
8. This child asks for help when he/she can't do something.				

Other comments before/after speech-language intervention:
