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Dyslexia with language weaknesses: Recommendations to guide organisation-based efforts for school-going learners based on educational therapists' perspectives

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Abstract

Background: Children with dyslexia often also present with oral language difficulties. If identified, speech-language pathologists (SLPs) remediate these children's comorbid language difficulties through speech therapy. However, educators are still faced with the additional challenge of helping these children understand academic concepts on top of their language difficulties. Educational therapists (EdTs) are one group of educators who work closely with dyslexic children and teach them literacy. **Research aims & objectives:** This study aims to gain an understanding of current and future efforts of DAS for educational therapists working with learners who have dyslexia and language difficulties. Based on these EdTs' perspectives, recommendations to guide educators working with children who have dyslexia and language weaknesses will be provided. As such, the central research question is What can the Dyslexia Association of Singapore do in the provision of support for learners with dyslexia and language difficulties based on the perspectives of educational therapists of these students? **Method:** This study explores the teaching experiences of 7 EdTs with Primary 2–6 children (aged 8–12 years), who presented with both dyslexia and oral language weaknesses. Recommendations will be provided based on interviews with the EdTs and reflections by them. **Results:** From our qualitative analyses of the collected data, we found that all EdTs regardless of their knowledge and background face challenges while teaching students with both dyslexia and oral language weakness. It was also found that strategies used at the DAS by EdTs can be split into what is used in the classroom and what is done outside the classroom. Lastly, results suggest that not all EdTs are well aware of oral language weakness. **Discussion:** Thus, this study serves as a stepping stone towards the creation of a guide for EdTs working with such students. Additionally, this study suggests that more resources should be created to educate EdTs further on oral language weakness and ways in which they can better help these students.

Keywords: dyslexia; educational therapists, language weakness, oral language weakness

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INTRODUCTION

Dyslexia & oral language weakness

Language is a non-instinctive communication system that allows individuals to communicate ideas, emotions, needs and wants with each other (Sapir, 1921). It occurs in an array of modalities such as speech, written format and even signs and symbols (Bishop et al., 2016). Although the majority of people are able to pick up language with ease, there are still individuals who struggle and experience difficulties across several language areas and modes (i.e. written and spoken).

Dyslexia is a written language disorder with a population prevalence of 5-10% (Siegel, 2006). According to the International Dyslexia Association (IDA), dyslexia is marked by difficulties in accurate and fluent word recognition and spelling. These difficulties are typically due to deficits experienced in the phonological component of language (Lyon et al., 2003). Individuals with dyslexia lack phonological awareness, show poor verbal working memory and rapid naming which relates to poor reading acquisition and a lack of explicit awareness of language sound structure (Ramus, et al., 2013).

Specifically, a lack in phonological awareness often results in individuals being unable to explicitly categorise and manipulate language sounds, increasing the difficulty of tasks like applying alphabetic principles to decode and spell written or typed words (Gillon, 2000). It is also important to note that The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013) states no link between dyslexia, age and other cognitive abilities. Both dyslexic and children with developmental language delay (DLD) may also struggle with articulation, one of our most complex motor skills, and this impacts further on their literacy abilities. This may be evident in difficulty in repeating polysyllabic or nonsense words, as well as particular difficulties in reading them.

Another group of individuals who struggle with language are those diagnosed with developmental language disorder (DLD) or what was previously known as specific language impairment (Gough Kenyon et al., 2018). DLD is a neurodevelopmental disorder with a prevalence of about 7.5% in children. Individuals diagnosed with DLD are said to possess oral language difficulties. These individuals struggle with language comprehension and expressive elements of language despite normal levels of intellectual functioning, hearing and an adequate learning environment (Leonard, 2014). They also experience deficits in higher-level language skills like semantics, syntax and language discourse (Norbury et al., 2016; Tomblin et al., 1997) and have problems interpreting and producing certain phonological forms (Jakubowicz et al., 1998). Research has shown that children with DLD take more time to learn and master new vocabulary in comparison to their peers. They also show evident difficulty in some portions of grammar.

Although dyslexia and DLD affect different aspects of language in an individual, statistics show that these two disorders often comorbid with each other (Snowling & Melby-Lervåg, 2016). In a 2000 study by McArthur, Hogben, Edwards, Heath, and Mengler, 55 percent of children who had dyslexia were found to also have impaired oral language abilities. If identified, speech-language pathologists (SLPs) remediate the children's comorbid language difficulties through speech and language therapy.

Thus, with weaknesses in both language and literacy, this group of children are further disadvantaged in their learning of academic concepts. Comorbidity of dyslexia and oral language difficulties put children at a greater disadvantage academically. This is because, these children now not only struggle with the written language (i.e. reading and spelling) but have additional difficulties picking up vocabulary and understanding certain aspects of grammar like tense and agreement markers (Bedore & Leonard, 1998; Rice & Wexler, 1996; Tager-Flusberg & Cooper, 1999).

Additionally, while SLPs address the children's language difficulties, educators are faced with an additional challenge of helping these children understand academic concepts. This is especially since the area of language difficulty varies for all with dyslexia and DLD. Interventions and guidelines crafted for teachers currently available are mainly written in a general manner. One such example is the good practice guide developed by the National Education Psychological Service (NEPS). This guide was created by a team of NEPS psychologists and is essentially a compilation of suggestions for in-class support for teachers with children with language difficulties.

The guide begins with providing educators with general strategies they can use in the classroom. For instance, it explains that when working with children with language difficulties, teachers should alter their explanations and instructions by summarising, paraphrasing and simplifying. In terms of the teaching materials and strategies, the guide suggests the use of audio and visual stimuli as well as the need to work together with parents and encourage or support the child with praise where appropriate. After giving general strategies, the guide further elaborates on ways teachers can help a child with weak receptive and expressive language respectively. Although more specific teaching methods like the use of expansion, open questions, memory games etc. are suggested in this section, the guide reminds its users that deciding on which strategies to use depends on the profile of the student (i.e. age, ability, interests etc.).

BACKGROUND AND AIM OF THIS STUDY

At the Dyslexia Association of Singapore (DAS), even though all students attending classes are diagnosed with dyslexia, some of them have a comorbid diagnosis of language difficulty. A pre-research survey conducted by this author among educational therapists (EdTs) at the DAS found that EdTs have observed students who display language difficulty in expressive and receptive domains that adversely affect their

educational performance. Some examples include poor language proficiency such as improper use of words and their meanings, inability to express ideas, inappropriate grammatical patterns, reduced vocabulary and inability to follow instructions.

DAS EdTs are trained to provide a curriculum-based literacy intervention based on the Orton-Gillingham (OG) approach to children with dyslexia. The intervention programme includes phonetic instruction, reading comprehension, writing and vocabulary components, all of which taps heavily on language skills. For example, to learn a spelling rule such as “In a one syllable, one vowel, and one ending consonant word, double the ending consonant before adding a vowel suffix”, a child has to understand the words, the grammar, and the complex sentence structure used in that rule to learn and apply it effectively. This may be relatively more achievable for a child with only dyslexia and no problems with understanding language. In contrast, for a child with both dyslexia and language weaknesses, the EdT may have to use additional strategies or a completely different approach to help the child understand, learn, and apply the rule.

Hence, the impetus for this study is based solely on the observations made by DAS EdTs who face challenges teaching students with language weaknesses. Due to this, more research should be done to support their efforts so as to improve teaching and learning of both students and EdTs. The aim of this study is to offer recommendations to guide organisation-based efforts for school-going learners based on the perspectives of EdTs with the central research question:

What can the Dyslexia Association of Singapore do in the provision of support for learners with dyslexia and language difficulties based on the perspectives of educational therapists of these students?

The study is conducted to find out in greater detail the challenges that EdTs face when teaching this group of students, as well as the teaching methods that have helped them guide these students in the classroom. The objective of this study is to discover teaching methods and strategies that are useful to be shared with fellow EdTs, and for the organisation to offer recommendations that can be implemented in the classroom to support these learners.

METHODS

In order to learn about the challenges that EdTs face when teaching students who display language difficulties, a qualitative remote interview or questionnaire sent via email was conducted with 7 of them whose one particular student was identified to have scored extremely low on the verbal language component (composite score < 80) based on their educational psychological report. A similar trait among these students is that they all possess very weak language skills. In comparison, these students received scores that are average (composite score > 80) on their non-verbal language

component. These students were assessed by psychologists in 2019 and have received remediation for at least 6 months on the Main Literacy Programme (MLP) where basic literacy skills of reading and spelling according to the Orton-Gillingham principles were employed. Typically, a child who scores higher on the verbal component compared to the performance component is generally an underachiever - has normal intelligence but may not do well academically. At the DAS, students who received an extremely low score on the verbal language component are given the A1 banding based on the curriculum based banding categorisation. Students in this category are characterised by weaknesses in language skills which include vocabulary knowledge and oracy skill.

Participants

Seven EdTs with teaching experience ranging from 1.5 years to 8.5 years and whose students are actively enrolled on MLP and in the A1 band participated in the study. These students would have received more than 6 months remediation from the MLP.

Materials

A set of questionnaires (Appendix A) was created with questions that determine EdTs' teaching experience, knowledge of oral language weakness and experience teaching students with oral language weakness. The same questions set in this questionnaire were used for the remote interview.

Design

A remote interview was conducted with EdTs who were available at a specified day and time and a set of questionnaires was sent to EdTs who were unavailable for the remote interview. Both types of data collection are expected to yield consistent results as the questions asked during the interview and in the questionnaire are the same.

Procedure

EdTs who selected the remote interview were interviewed on the day and time which they had selected. Each interview session lasted approximately 30 - 45 minutes. All interview sessions were recorded and transcribed for analysis purposes. Whereas for EdTs who selected the questionnaire, they were expected to return the completed questionnaire within 5 days. All completed questionnaires were kept for analysis purposes.

RESULTS

Data collected from both interview and questionnaire provided sufficient information from the EdTs' perspective as questions that require in-depth answers had the statements please elaborate, elaborate with examples, elaborate with details or describe in them. To analyse the data collected from the interviews and questionnaires, we conducted a group case study. The results below are thus presented in two groups; Case study A and Case study B. The EdTs were divided into the two case studies base on their awareness

of oral language weakness. Case study A is made up of EdT 1, 2 and 3 who are unaware of what oral language weakness is while Case study B is made up of EdT 4, 5, 6 and 7 who are aware of oral language weakness as shown in Table 1.

Table 1. Case study classification

Case Study	Educational Therapist (EdT)	Awareness of oral language weakness
A	EdT 1	Unaware
	EdT 2	
	EdT 3	
B	EdT 4	Aware
	EdT 5	
	EdT 6	
	EdT7	

Part 1: Teaching experience

In this section, information about EdTs' general teaching experiences were compiled and represented in the four graphs (Figure 1, 2, 3 & 4). We gathered that all EdTs had varying years of teaching experience. The amount of interaction between EdTs and students was also varied.

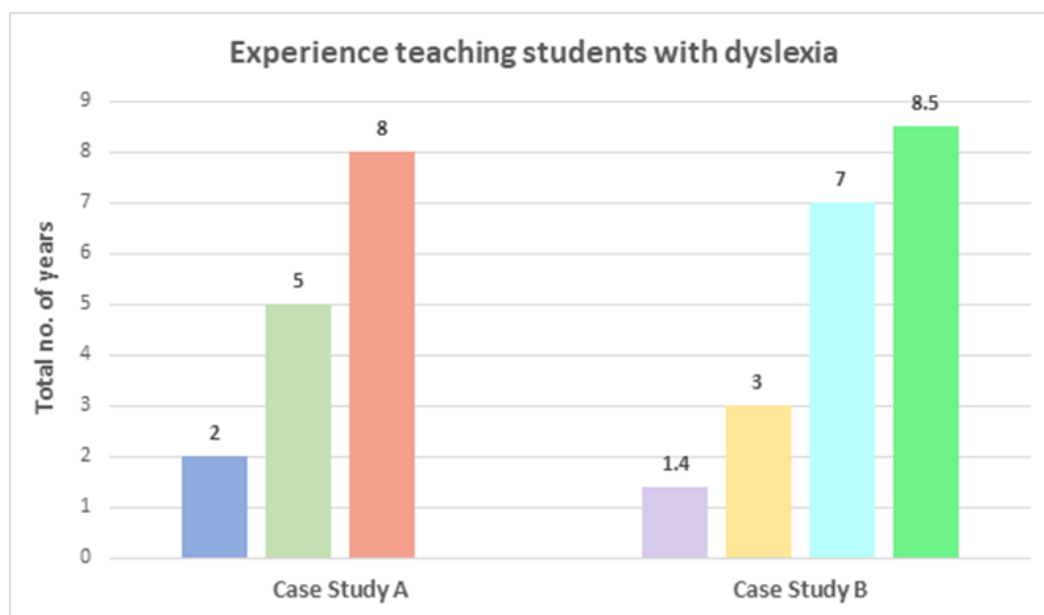


Figure 1. EdTs' total years of experience teaching students with dyslexia

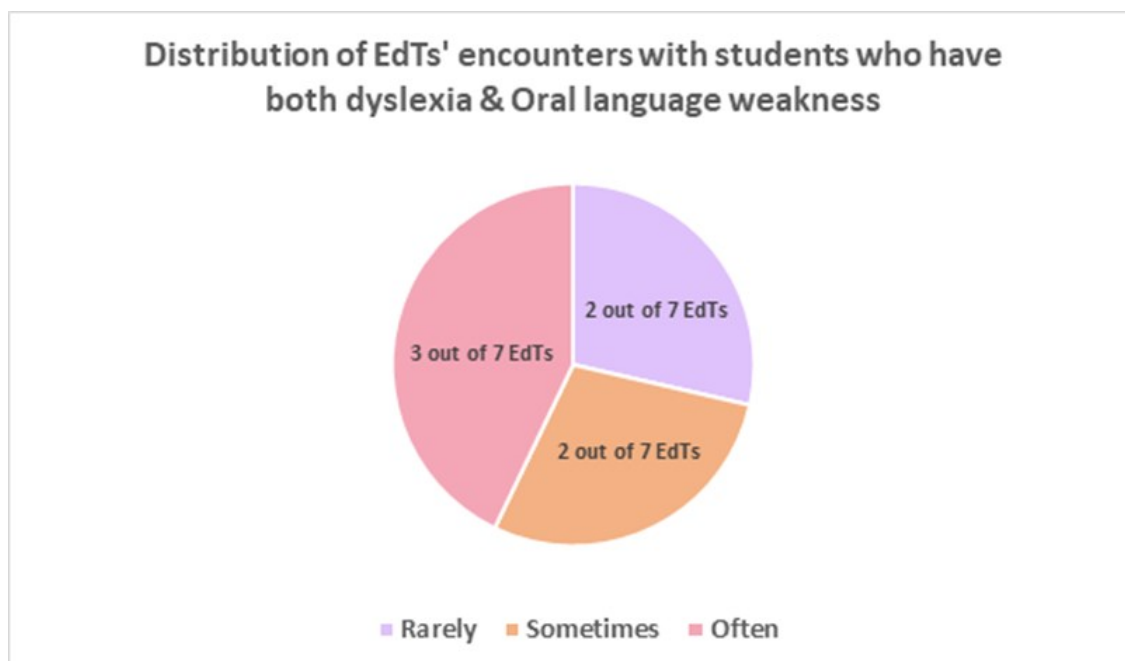
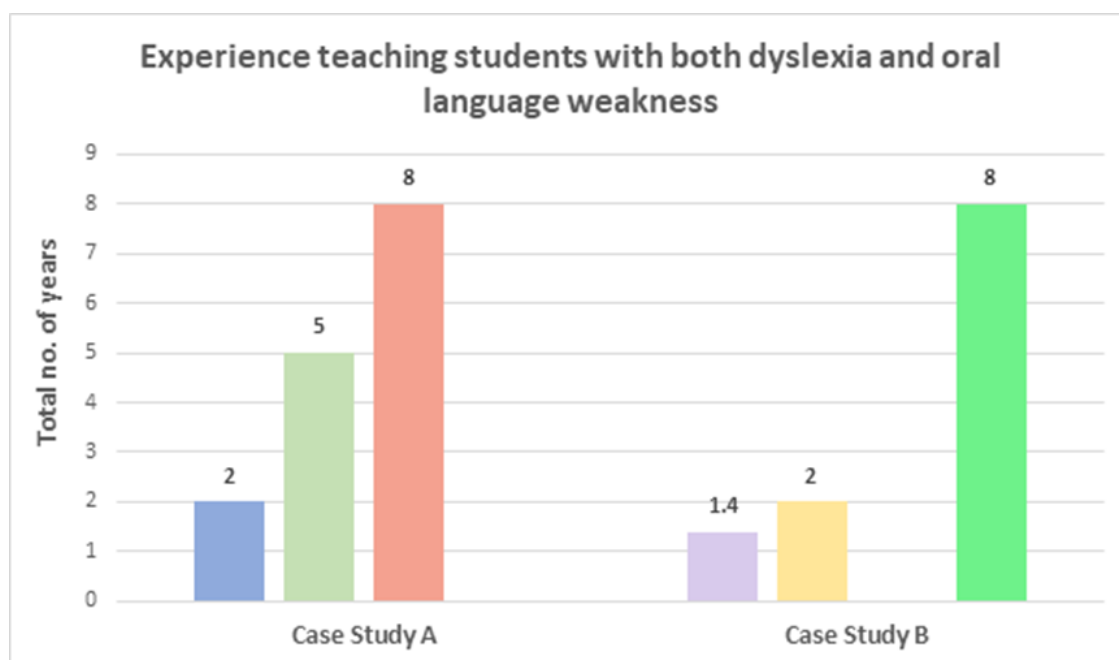
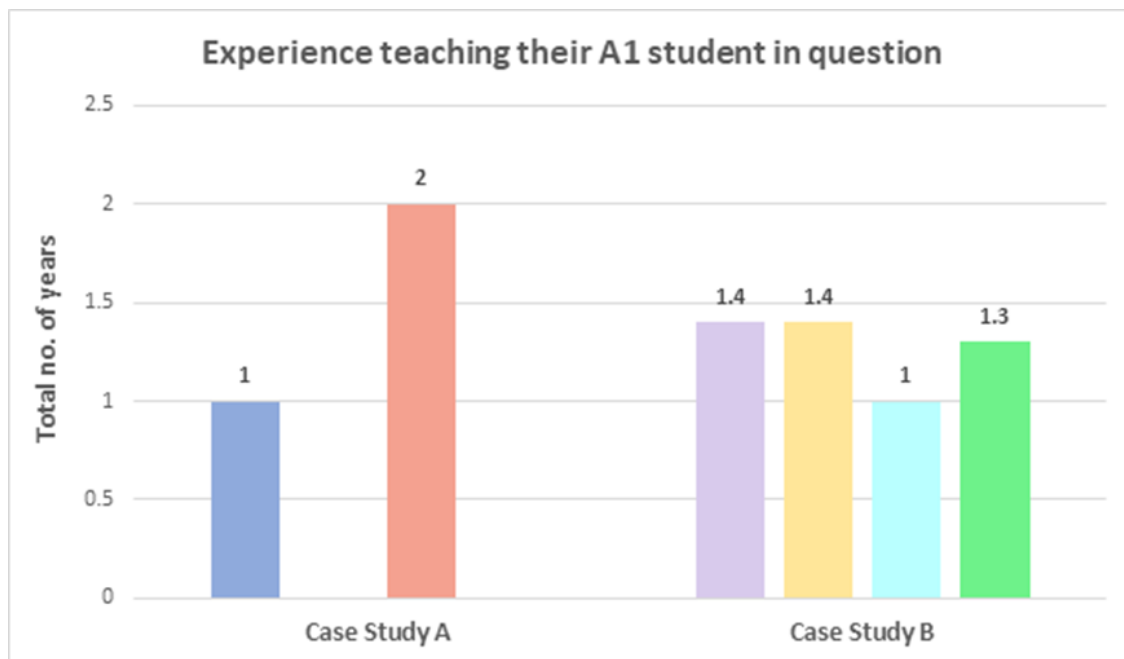


Figure 2. Distribution representing how often EdTs encounter students with dyslexia and oral language weaknesses



EdT 6 excluded as her answer was not specified

Figure 3. EdTs' total years of experience teaching students with both dyslexia and oral language weakness



EdT 2 excluded as this question was not included in her interview

Figure 4. EdTs' experience teaching their A1 student in question

Part 2: Knowledge of oral language weakness

In this section, information about the EdTs' knowledge of language (i.e. milestones and oral language weakness) was obtained. As previously determined, EdTs in case study A are unaware of oral language weakness while EdTs in case study B are aware of oral language weakness. In line with this, the EdTs in case study A were also generally unaware of language milestones, all three sharing that they only heard the term being used. When shown the language milestones table, they shared that they were not aware of the specific details outlined in the table. When asked about the importance of tracking language milestones in children, they all shared that language milestones should be seen as just a guide and that other factors should be considered before assumptions are made about a child's language development.

For EdTs in Case study B, their awareness of language milestones was varied with half of them aware of language milestones and the other half only hearing about the term language milestones but not knowing the details, despite all knowing what oral language weakness is. Regardless of this varied awareness, everyone in case study B shared the opinion that language milestones tracking is important as they help predict a child's language development and are useful to planning interventions. Two of them also added that language milestones should be used as a rough guideline as each child has

different rates of development. Thus, they believe that children should be given one to two years leeway before being taken to speech or language specialist for intervention.

Despite varied opinion and knowledge, EdTs in both case studies were able to explain their student's difficulties based on the different aspects of language as shown in Table 2 and 3.

Table 2. Case study A - Recount of student's language difficulties

Student's indicators of oral language weakness				
Case Study A				
EdTs	Phonology	Grammar	Vocabulary	Language discourse
EdT 1	Blending: Misses out certain sounds Vowel confusion	Auxiliary verbs: Only know how to use "is" & "are" Subject-Verb agreement: Plural vs. Singular Verb tenses: Uses "-ing" instead of "-ed" to indicate past tense	Limited oral & reading vocabulary	Difficulty processing info: Student takes very long to answer even simple questions and often looks confused
EdT 2	- NIL -	- NIL -	Limited vocabulary Inability to associate words to meanings: Unable to understand meaning of many words	Difficulty processing info: Forgets concepts taught very quickly. Requires many reminders & drills to help him process & understand concepts.
EdT 3	Pronunciation: Mispronounces words & makes speech errors	Sentence formation: Speaks in broken sentences & does not abide by grammar rules (e.g. only includes keywords to get meaning across)	Very limited vocabulary	Difficulty translating thoughts into coherent sentences: Unable to string his thoughts together into sentences, making it difficult for people around him to understand and communicate with him.

Table 3. Case study B - Recount of student's language difficulties

Student's indicators of oral language weakness				
Case Study B				
EdTs	Phonology	Grammar	Vocabulary	Language discourse
EdT 4	Pronunciation - mispronounces when reading & speaking	Sentence formation - sentences not grammatically accurate	Very limited vocabulary	Difficulty translating thoughts into coherent sentences - sentences often require additional substitution of words to properly understand thought process
EdT 5	- NIL -	Sentence formation - student needs guidance to form grammatically correct sentences	Inaccurate usage of words Inability to associate words to meanings - struggles to remembers words & corresponding meanings	Difficulty processing information - struggles with understanding what others say & thus struggles to carry out conversations
EdT 6	Ability varies based on aspects - able to read sounds on drill cards but unable to combine sounds to create new ones	Sentence formation - unable to construct grammatically accurate sentences in writing despite being able to in speech & conversations	Limited vocabulary Inaccurate usage of words - often uses words that are inappropriate to context/situation	Difficulty translating thoughts into coherent sentences - unable to communicate ideas & thoughts clearly despite having all of them in her head EdT believes it is due to her lack of vocabulary
EdT 7	Pronunciation - struggles to distinguish between "sh" & "ch"	- NIL -	- NIL -	Difficulty translating thoughts into coherent sentences - struggles in this area but EdT attributes it to student's lack of exposure to the English language, lack of confidence & student's less outspoken demeanour

Part 3: Experience teaching students with oral language weakness

In this section, more in-depth information about the EdTs personal experience teaching the identified A1 student was extracted. The tables (Table 4- 9) summarise information gathered on their relationship (past & present) with the student, personal struggles, current strategies employed and future plans for teaching the student.

Table 4. Case study A - EdTs' relationship with student

Teacher-student relations				
Case Study A				
EdTs	Initial observation		Current observation	
	Speech & language	Behaviour & emotional	Speech & language	Behaviour & emotional
EdT 1	Student is very weak; still needed to blend even CVC words	Initially, EdT believed the student was very quiet & reserved.	Still weak in communication skills	No behaviour or emotional issues Very participative in class (e.g. shares despite still struggling with communication
EdT 2	Student is very weak; struggles with - Blending of sounds despite having been taught explicitly - Short vowels (e vs a). - B & d reversals - Spelling: still dependent on finger spelling	NIL -	Still requires EdT to repeat & emphasise things	Very well behaved; listens to instructions well & follows lessons to the best of abilities
EdT 3	Student is very different from his peers; unable to communicate but able to read sentences smoothly whereas his peers are the opposite. Thus, he struggles to comprehend and follow instructions	NIL -	Still struggles to communicate	Although, it is still a challenge for EdT to communicate with child, in comparison to the beginning, their relationship is much better now

Table 5. Case study B - EdTs' relationship with student

Teacher-student relations				
Case Study B				
EdTs	Initial observations		Current observation	
	Speech & language	Behaviour & emotional	Speech & language	Behaviour & emotional
EdT 4	Very poor vocabulary - especially lacking vocabulary specific to emotions and feelings	Student initially did not enjoy coming to class - unable to communicate with people	- NIL -	Student is active in class - seeks out opportunities to speak and share. Overtime, the student has opened up to his teachers and allowed them to help him fill in the gaps in his oracy skills so he can be better understood.
EdT 5	Student has limited vocabulary Unable to follow instructions - had difficulty with work production and required constant prompts and guidance from EdT	- NIL -	- NIL -	Student displays no behavioural or emotional difficulties Student is eager to learn - takes the initiative to ask for help
EdT 6	EdT explained she noticed a huge disparity between student's reading and spelling abilities. Spelling: Unable to use phonetic skills taught previously to sound out words & spell (e.g. struggles to spell "black") Reading: Fairly well at 7-9 year old level	- NIL -	- NIL -	Student is polite; listens to instructions well Student seems to be interested in bettering herself
EdT 7	- NIL -	Very soft-spoken; needed a lot of prompting talk and participate in lessons	- NIL -	No issues - student is always punctual for class Student became more participative after online classes

Table 6. Case study A - EdTs' personal experience

EdTs' personal experience		
Case Study A		
EdTs	Struggles faced	Skills possessed
EdT 1	Difficulty altering lessons to fit needs of student: ♦ Had to think out of the box to find ways to simplify lessons, especially when teaching student vocabulary words/concepts that are abstract and not relatable to the student	Knowledge & experience: ♦ Years of experience teaching children with language difficulties & impairments have helped her learn the tell-tale signs of students and how she can best assist them
EdT 2	Personal struggles (EdT's response was inferred from her interview as an explicit answer was not given) ♦ Worried about not being able to help improve her student	- NIL: EdT was not asked this question-
EdT 3	Difficulty communicating with student: ♦ Hard for EdT to get even simple instructions across to her student. ♦ Feels like her student often misunderstands her intentions as in some cases she feels she might come across as angry to her student	Patience ♦ EdT explained that she relied on her patience the most as this student, out of all her other students has been the most challenging to work with because of his inability to communicate his thoughts and understand others. Genuinely wanting to help ♦ EdT explained that when it got very challenging teaching this student, she had to go back to the reason why she entered this line of work.

Table 7. Case study B - EdTs' personal experience

EdTs' personal experience		
Case Study B		
EdTs	Struggles faced	Skills possessed
EdT 4	Difficulty controlling student ♦ EdT was unable to prevent her student from throwing fits out of frustration when he could not understand others or communicate his ideas to classmates and herself	Prioritisation Skills ♦ Knowing what to prioritise when teaching a child has helped her work with this student
	Personal struggles ♦ EdT explained that while working with this student, she sometimes felt helpless, frustrated and guilty for not being able to understand & help her student more	
EdT 5	Difficulty altering lessons to fit the needs of student ♦ Found it hard to create different worksheets for this particular student and other classmates because of the varying abilities of her class.	Genuinely wanting to help ♦ Believes that the extra effort she takes to try and better understand the student's background and how he is coping in school has helped her in teaching the student
	Balancing this student with other students ♦ EdT found it hard to fully focus on this student due to presence of other students in class who are moving at a faster pace Personal struggles ♦ EdT explained that while working with this student, she sometimes felt helpless, frustrated and guilty for not being able to understand & help her student more	Knowledge & experience ♦ Her understanding of the student's difficulties & her knowledge of language & development milestones allowed her to identify the student's learning needs & better teach the student

Table 7. Case study B - EdTs' personal experience (Cont)

EdTs' personal experience		
Case Study B		
EdTs	Struggles faced	Skills possessed
EdT 6	Difficulty getting concepts across to students ♦ Unable to find a way to get her student to remember letter sounds (abstract concept) as it is not something that can be represented in a concrete manner Time management & class's schedule ♦ Feels that the 2 hour lesson once a week is not beneficial for her student and is a struggles: ♦ Student often forgets what they covered in the previous lesson by the next one. Issue is most prominent after public/school holidays/when student misses lessons Personal struggles ♦ Is unable to understand the great disparity between student's reading and spelling abilities	Open-mindedness ♦ EdT believes her open-mindedness to trying different teaching methods (aside from the OG method) has helped her to identify the student's learning needs & corresponding ways she can help her student overcome them
EdT 7	Personal struggles ♦ Biggest struggle came in the beginning when the student had just joined her class. EdT was worried she would scare off her student as she looked very timid & scared ♦ Student's lack of participation & responsiveness also made her question her teaching, she wondered if the student was actually understanding and absorbing content taught	Patience ♦ Believes she was able to help her student due to her patience and understanding. She explains that these values helped her avoid getting annoyed or irritated with the student even when student was too soft or was not participating the way she wanted

Table 8. Case study A - EdTs' employed strategies & future plans

EdTs' employed strategies & future plans			
Case Study A			
EdTs	Strategies employed	Effectiveness of current strategies and future plans	
EdT 1	Strategies employed in the classroom - Supports lesson with visual/auditory content - Includes at least 1 picture in every worksheet - For spelling practices, she googles pictures & uses them as prompters/a tool to elaborate and explain that word to student - Provides student with extra speaking opportunities - Ask for students opinions/preferences on things - E.g. For sight words, she usually times her students but for this particular student, she asks for permission before doing so - Providing a lot of encouragement & support to student where appropriate - Encourages and praises student where appropriate	Effective Now able to move on to vccv words and longer words in general Student is able to decode words on her own and remembers the steps needed to blend them Vocabulary: Student is now able to remember some of the words taught to her Believes the praises and encouragement has helped the child be happy in class	Plans to continue employing the strategies mentioned but will try to better scaffold her lessons to benefit both the student in question and her other students in the same class
	Strategies employed in the classroom - Supports lesson with visual/auditory content - Uses videos to explain things where possible - Teaching with the aid of games/ activities - Physical games - E.g. Since EdT believes her student's main weakness is his poor memory, she uses memory card games with him. She believes that without focusing on improving his memory, he will just continue to forget everything learnt, leading to no improvement - Tried using multisensory materials & activities but plans were stopped abruptly due to Covid-19	- NIL: EdT was not asked this question-	Plans to continue employing the strategies mentioned for the long run

Table 8. Case study A - EdTs' employed strategies & future plans (Cont)

EdTs' employed strategies & future plans			
Case Study A			
EdTs	Strategies employed	Effectiveness of current strategies and future plans	
EdT 3	Strategies employed in the classroom ♦ Word Families - groups of words that have a common feature or pattern - Runs through one word family at a time and then uses it to teach student vocabulary - From one word family, EdT picks 1-2 main vocabulary words & links it to themes e.g. "_et" family, she might pick the word vet and teach the student the idea of an animal doctor and then use that to introduce different types of animals & corresponding adjectives - In one lesson, she tries to introduce at least 5 words ♦ Supports lesson with visual/auditory content - Prints out pictures that represent the words she taught to students through word families ♦ Adapts to child spontaneously - Shifts focus when necessary - E.g. Since student is weak in grammar rules & strong in reading, she focuses on teaching grammar rules (i.e. punctuation & capitalisation) instead of reading techniques	Effective to a certain extent Effective because: Student is now able to communicate a little better compared to in the very beginning Ineffective because: EdT feels student is confused by the introduction of several vocabulary words every week as although he remembers the meanings, he attaches them to different words	
	Strategies to aid learning outside of the classroom ♦ Provides student with extra work - Provides student with extra worksheets to help review & recap lessons at home	EdT will continue employing such strategies while actively seeking ways to improve them to better benefit her student. However, as of now she is not sure of the changes she wants to make	

Table 9. Case study B - EdTs' employed strategies and future plans

EdTs' employed strategies & future plans			
Case Study B			
EdTs	Strategies employed	Effectiveness of current strategies	Future plans
EdT 4	Strategies employed in the classroom ♦ Word Families - groups of words that have a common feature or pattern - Specifically focuses on teaching words that have to do with emotions & feelings as her student is weak in this aspect of vocabulary ♦ Supports lesson with visual/auditory content - Uses pictures and short videos to create talking opportunities for student to help improve overall oracy skills ♦ Adapts to child spontaneously Takes the extra time & effort to - Correct student's sentences one by one - Understand student's thought process - Learn student's behaviours i.e. his triggers & distractors	Effective to a certain extent Effective because: Strategies used have been helpful in encouraging student & in motivating student to continue learning vocabulary words which will eventually lead to him improving his speech & communication abilities Ineffective because: EdT feels student's improvement has a lot to do with him attending SLT and his increase in exposure to the English language	Plans to continue using the strategies mentioned for at least the next year but with improvements Plans to change the focus of conversations to topics that are of interest to student & increase the complexity of topics in general since student will be in P3 in 2021.
EdT 5	Strategies employed in the classroom ♦ Supports lesson with visual/auditory content - Provides student with visual cues/prompts when student get stuck ♦ Teaches with the aid of games/activities - Online games - Uses online quiz game platform Kahoot in class to recap lessons	Effective Effective because: Kahoot has worked as a form of review for the student: helped him understand & apply concepts & also helped motivate and boost student's confidence *EdT only shares benefit of teaching with the aid of the game, Kahoot*	Will continue to employ these strategies and tweak lesson materials based on student's progress so he can do them independently as much as possible

Table 9. Case study B - EdTs' employed strategies and future plans (Cont)

EdTs' employed strategies & future plans			
Case Study B			
EdTs	Strategies employed	Effectiveness of current strategies	Future plans
EdT 5	♦ Alters teaching/learning resources & lessons - EdT adapts reading comprehension exercises of student by giving him MCQ questions instead of open-ended ones ♦ Adapts to child spontaneously - EdT will observe student and devote more time to areas in which student needs most help in Strategies to aid learning outside of the classroom ♦ Involves parents in student's academic life - EdT recommends websites/online games to student's parents that she feels can help the student with spelling, reading and his phonological skills		
EdT 6	Strategies employed in the classroom ♦ Supports lesson with visual/auditory content - EdT noticed that during spell activities, student would often stray, and spell things based on what she feels is right - To try to fix this, EdT prints or writes letters that the student will need to use during spell activities, "forcing" the student to only use those few letters to spell the words given	Effective Effective because: She feels that the strategy (i.e. using letter cards/writing out the letters) has worked better than previous methods of conducting sound spelling (i.e. just leaving the child to spell on her own)	EdT explains that she plans on continuing using the strategies currently employed.

Table 9. Case study B - EdTs' employed strategies and future plans (Cont)

EdTs' employed strategies & future plans			
Case Study B			
EdTs	Strategies employed	Effectiveness of current strategies	Future plans
EdT 6	♦ Alters teaching/learning resources & lessons - For close passages, EdT blanks out certain parts of the words, e.g. she removes certain vowels and gets the student to fill in the blanks based on the context of the passage and the word's spelling		For using letter cards/ writing out the letters, she specified that she will employ this strategy until at least the end of term 1, 2021. She hopes that by then, student will be able to catch on and thus, when the physical cards are removed, student will still be able to spell correctly.
EdT 7	♦ Supports lesson with visual/auditory content - Uses visuals during "words to read" - Provides students with pictures to help facilitate learning & gain student's attention/interest - Uses videos when introducing new sounds as she feels videos make the sounds more salient for the student ♦ Teaches with the aid of games/activities - Online games - Uses the iPad and online quiz platforms to help boost her student's morale & confidence, e.g. Kahoot ♦ Provides student with extra speaking opportunities - Gets all her students including the student in question to answer her questions and have conversations about non-school related topics. - Does this to help them understand sentence structure & expose them more to the English language	Effective because Student now asks questions and does not keep everything to herself anymore	Plans to continue using these strategies because her other students also benefit from these strategies Will also continue to make the effort to talk to the student in question and have informal conversations Help student build her confidence and continue building a rapport so student continues to feel comfortable in class

DISCUSSION

The study conducted allowed us to understand the experience and ways in which EdTs at DAS work with students with both dyslexia and oral language difficulties. It was found that regardless of experience in years and whether or not EdTs knew about oral language weakness, they all face challenges while working with their students. Some struggled with more personal issues like feeling helpless, frustrated and guilty for not being able to understand their students, while others struggled with more teaching related issues such as communication difficulties, time constraints, difficulty in lesson planning and structuring.

General strategies in the classroom. Results from both groups of EdTs (Case study A & B), allowed us to identify the more common classroom strategies that work for these students. The most popular strategy identified was the use of visual and auditory content in the classroom. According to all EdTs, students were able to understand and absorb lessons better when they did this through various methods like, attaching pictures to worksheets, showing videos and pictures to describe words and even using voice clips to demonstrate proper pronunciation of sounds.

A majority of the EdTs also explained that they alter the teaching resources used. Specifically, EdTs explained that they often give their students simplified work. For example, some EdTs replace open-ended questions with multiple choice questions and others blank out only certain letters in a word in spelling exercises.

EdTs also largely avoid a rigid lesson structure and emphasise the importance of adapting to the child as one teaches. Some EdTs explained that instead of just doing pen and paper exercises, they create online quizzes on software like Kahoot to help recap a lesson. Others spend more time talking to their students because they feel the student needs more help in expressive language skills in comparison to reading skills.

General strategies outside of the classroom. In addition to the general strategies used by EdTs in the classroom, our study also helped gain insights on what can be done by EdTs outside of the classroom to better support their student's learning. A few EdTs mentioned the importance of parent involvement in their child's academic life and shared the idea that EdTs can only do so much in the short hour or two they spend with their students. Thus, EdTs often share their student's progress with the parents and also provide them with resources (i.e. websites and online games) that they can use to help reiterate concepts learned in the classroom.

Other possible implications. Information gathered about awareness of oral language weakness amongst EdTs was also useful. Since three out of seven EdTs are unaware of what oral language weakness is, it suggests that EdTs are lacking in knowledge of oral language weakness and that more should be done to increase this knowledge.

LIMITATIONS AND DIRECTIONS FOR FURTHER RESEARCH

Even though this study has furnished insights into the difficulties that EdTs face when teaching their students, there are limitations which need to be considered for future research. This study was conducted with a small sample of EdTs and thus, a small sample size of students. 7 EdTs who described their experience teaching their students is hardly sufficient to provide generalisations on the population of students at DAS. As stated above in the study conducted by McArthur and colleagues, 55% of children who had dyslexia were found to also have impaired oral language abilities. Thus, a bigger sample size of students at DAS would render a stronger study on students with dyslexia who may also face language difficulties. Although the responses derived from both the interview and questionnaire are adequate to gather an understanding of the EdTs' perspectives in teaching their students, the interview accorded more in-depth responses as the EdTs could be prompted and probed even after they had elaborated on their replies. Hence, future research might consider just an interview for data collection where information given by EdTs could be rich and wholesome.

CONCLUSION

In conclusion, this study achieved its purpose and allowed for a better understanding of the challenges that EdTs face when teaching this group of students, as well as the teaching methods that have helped them guide their students in the classroom. This study was also beneficial as it acts as the stepping stone towards creating DAS very own in-class good practice guide book with suggestions for in-class support. The information gathered about EdTs lack of knowledge on oral language weakness also prompts the need for resources that educate EdTs about DLD. These resources will help to increase overall awareness on the comorbidity of dyslexia and DLD, allowing EdTs to better understand and support such students.

Hence, here are the recommendations put forth:

Training. Currently, EdTs are trained deeply on the dyslexia profile. Moving forward, EdTs have to be given information on typical versus atypical traits of language acquisition in school-going children which calls for a more in-depth training of comorbidity such as oral language weakness. This can be achieved through the courses conducted at the DAS Academy where apart from dyslexia, focus can also be given to topics on oral language weakness.

Resources. EdTs rely greatly on resources that are suitable for their students. Thus, the creation of materials to tackle and teach language and vocabulary for different levels of students is necessary. For example, low language weakness among children spans various ages; students at different age groups will require different resources that will aid

their learning of language and vocabulary. This can be achieved through periodical review of the DAS curriculum such that teaching materials are relevant to the specific groups of students. Additionally, Speech and Language Therapists (SLTs) possess great knowledge and skills as they work with this specific group of students. Hence, greater conversations and collaboration with in-house SLTs are likely to enrich EdTs with language-teaching guidelines that they can utilise in the classroom when teaching their students.

Awareness and education. It is essential that all educational therapists, educators, and parents be more aware and educated on what low language weakness is and the distinct features that separates it from dyslexia. This can be conducted through the annual DAS UNITE SpLD Conference and other small scale presentations such as the Teams Teaching Teams, Centre Sharing, and Parent Talk sessions which are organised on a yearly basis. For educational therapists and educators, this will be a form of continual professional development.

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APPENDIX A

EdT Questionnaire/Interview questions

TEACHING EXPERIENCE OF EDUCATIONAL THERAPIST (EDTS)

This questionnaire aims to explore the perception of EdTs on teaching students diagnosed with dyslexia and oral language difficulties who have been given the A1 banding upon assessment. From this questionnaire, the SpLD Committee hopes to gain a better understanding of current and future efforts of DAS for EdTs working with learners who have dyslexia and oral language difficulties. Please **read the instructions carefully** and **answer all** of the following questions as detailed as possible and to the best of your ability. There are **no right or wrong answers**.

PART 1: TEACHING EXPERIENCE

The following set of questions seek to find out more about your general experience teaching children with learning difficulties. Please answer all questions by **filling in the blanks**.

1. How long have you been teaching children with dyslexia?

2. How often do you encounter students who may have an oral language weakness?

3. How long have you been teaching students with an oral language weakness?

4. How long have you been working with your student who was given the A1 banding?

MILESTONES IN LANGUAGE DEVELOPMENT (≥ 3 YEARS)		
Age	Expressive Language	Auditory Comprehension
3 - 4	• Uses 3 - 4 word sentences and knows approximately 600 - 1000 words. • Uses pronouns, adjectives, adverbs, prepositions, past tense and plurals. • Able to answer simply what, where and when questions.	• Understands 1500 words • Recognizes gender differences, plurals, pronouns, adjectives and colours •
4 - 5	• Uses 4 - 6 word sentences that are more detailed and vocabulary grows to 1000-1600 words • Uses 4-6 syllable words and articles appear in speech • Uses more adjectives, adverbs and conjunctions • Overall fluency increases	• Understands 1500 - 2000 words • Understands if, because, why and when • Able to follow complex instructions
5 - 6	• Vocabulary at 1500 - 2100 words • Uses complete 5 - 6 word sentences • Speech is fluent • Uses many multisyllabic words	• Understands 2500 - 2800 words • Able to understand more complex sentences
6 - 7	• Wide range of vocabulary allows the child to classify objects into more specific categories (e.g. form, use, composition and colour) • Able to use language at a higher level; make jokes, sarcasm, argue their point of view, recall and explain events/memories • Starts developing written language skills and ability to write a descriptive paragraph • Grammar is mature (resembles adult grammar)	• Able to follow multi-step instructions • Able to answer 5W1H questions • Listens and understands grade level stories read to them • Listening comprehension is demonstrated
7 - 8	• No specific milestones for vocabulary • Able to express their opinion well • Able to recall both imaginary and real-life events • Uses appropriate grammar in speech and written work • Will ask questions to clarify their doubts and queries	• Able to understand for extended periods of time (e.g. listen to speakers at school)

PART 2: KNOWLEDGE OF ORAL LANGUAGE WEAKNESS

The following set of questions seek to understand your level of knowledge of oral language weakness. Please answer by **ticking** the appropriate box or **writing your response in the boxes provided**.

1. Are you aware of the language milestones of children represented in the table above?

☐ Yes ☐ No

2. Do you think language milestones are important and should be tracked or noted?

Please elaborate.

3. Do you know what an oral language weakness is?

☐ Yes ☐ No

If you responded "Yes" to question 3 please move on to question 4. If you responded "No" please skip question 4 and move on to question 5.

4. With reference to your student, could you describe what a child with oral language weakness struggles with?

6 Affected Language Components		
Phonology	Morphology	Pragmatics
Refers to the sound system of a language. Phonology includes the study of how sounds are organized and the interaction between all these different sounds.	Refers to the study of words. Specifically, it focuses on the study of the forms and formation of words in a language.	Refers to the study of the ways in which context contributes to meanings. Pragmatics studies the relationships between linguistic forms and their users.
Grammar	Vocabulary	Language Discourse
Refers to the set of rules for word formation and sentence arrangement to ensure complete and correct meaning.	Refers to the meaning of individual words. Oral vocabulary → words we use in speaking or recognizing in listening Reading vocabulary = words we recognize in print	Refers to the way in which language is used socially to convey ideas and thoughts. It looks at language beyond a single sentence.

5. Do you think your student struggles with any of the 6 components outlined in table 2?
Please elaborate.

6. Are you able to provide examples of a child's speech that could possibly indicate an oral language weakness? **Please elaborate on your answer.**

**Take note that speech, in this case, refers to sentence structure, logical flow and meaning of sentences and NOT pronunciation or articulation of words.*

☐ Yes ☐ No

PART 3: EXPERIENCES TEACHING STUDENTS WITH ORAL LANGUAGE WEAKNESS

The following set of questions seek to explore your personal experience teaching student(s) with oral language weakness. Please answer the questions as truthfully as possible. There are **no right or wrong answers**.

1. Describe your relationship with the student(s) you will be sharing about.

General teaching experience

1. What do you observe (e.g. speech, language etc.) of this particular student when you first got him/her under your charge?

2. As this student's EdT what skills do you possess that enabled you to identify his/her learning needs? **Please elaborate.** **e.g. Knowledge of language milestones*

3. What are some of the struggles you faced when teaching students with oral language weakness? **Please elaborate in detail.**

Strategies used to address oral language weakness

1. Please share some of the strategies you have used to help with this student's learning.
Do elaborate with examples.

2. Have these strategies worked?
☐ Yes ☐ No ☐ To a certain extent

Please describe how they **have and/or have not worked** in the box below.

3. For strategies that have been successful, would you continue employing them with your student? Please elaborate.

**Include your reason, how you plan to continue doing so and for how long.*

PART 4: ADDITIONAL COMMENTS/FEEDBACK

1. Is there anything else interesting you would like to add?

2. Is there anything you feel you might have missed mentioning earlier?

3. Additional feedback or comments.