Exploring the effectiveness of the English Examination Skills Programme on struggling non-dyslexic learners

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ABSTRACT

The effectiveness of sequential, cumulative and multisensory intervention programmes on learners with dyslexia has been proven in multiple academic literature. This study serves as a follow-up on previous research which explored the classroom practices of the English Exam Skills Programme (EESP). In comparison between students with dyslexia and a control group, the previous study found significant progress in their grammar, vocabulary and comprehension components of their English examination paper after intervention. Aligning with the Universal Design for Learning (UDL) framework, the EESP is postulated to benefit all learners, including struggling learners with or without a diagnosis of SpLD or any learning difficulties, who are scoring below 65% in their school English Language examination papers. This study seeks to investigate the possible effectiveness of the EESP on a group of struggling non-dyslexic learners after a 20-week intervention. Results indicate a significant effect of intervention for this small group of non-dyslexic students.
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Keywords: English Exam Skills, structured intervention, dyslexia, struggling learners, Universal Design for Learning UDL

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INTRODUCTION

The Primary School Leaving Examination (PSLE) is a major milestone for all primary school learners in Singapore's mainstream education. It is a national exam administered by the Ministry of Education (MOE) and taken by all students at the end of their sixth year in primary school before they move on to secondary school. The PSLE tests students' proficiency in the English language, their respective mother tongue languages (typically Chinese, Malay, Tamil or other Indian languages), Mathematics and Science. The format of the examinations within the PSLE has been revised consistently throughout its history to suit the MOE's revised curricula, however, the standard examination procedure has retained many of the same elements throughout the years despite changes being made to the requirements of each question and the score allocated to each question. All graduating primary school students are required to attain at least a pass grade in both their English and Mathematics exams in order to progress to secondary school. Given the importance of passing the English Language paper as a prerequisite to secondary education, many students and parents alike are highly concerned about their children's ability to cope with the subject.

At the Dyslexia Association of Singapore (DAS), above and beyond the scope to provide children diagnosed with dyslexia with literacy intervention, the English Exam Skills Programme (EESP) was developed to help students prepare and cope with the demands of the English Language paper of the PSLE. Since the start of the programme in 2013, it has seen five batches of graduating Primary 6 students through the PSLE and based on the annual programme evaluation of students' termly pretests and posttests, students who attended the EESP showed improvements in their overall school English grades. Feedback received from students and parents demonstrated that students were more confident in answering exam-formatted questions as they had been trained to answer questions in a structured and step by step sequence. The additional help provided on top of the literacy intervention through the DAS Main Literacy Programme (MLP), is beneficial to dyslexic students who are already struggling in acquiring the broad ranging aspects of language and literacy.

The EESP, which aligns closely to the Orton-Gillingham approach, has been found to benefit Primary 5 and Primary 6 learners in components of their English Language examination. In a recent research study, when a comparison of the performance between the experimental group of Primary 5 and 6 dyslexic students who attended the EESP and a control group was conducted, there was significant progress recorded in the grammar, sentence transformation and comprehension components of the experimental group (Leong, Asjamiah & Wang, 2017). The evaluation of the programme and its practices through its previous study, therefore, informed us that the structured, cumulative and progressive nature of the EESP curriculum and teaching approach would benefit learners who struggle in aspects of language and literacy. The results of this study would provide a basis for conducting this research, which aimed to explore the possibility and potential

of extending our curriculum to undiagnosed and struggling learners. MOE schools offer additional help to struggling learners through the recruitment of Allied Educators (AED) to provide students with in-class support and pull-out sessions targeting on basic literacy and behavioural aspects. However, there seems to be a lack of support with regard to examinable components. Thus, this study aims to explore how the EESP programme can help learners who are struggling despite receiving additional support in school.

This paper will look at how the research-based Universal Design for Learning (UDL) framework (Hall, Strangman & Meyer, 2003), a curriculum design that caters to learners of different abilities, fits into the EESP to cover a wider group of students. It will then compare and draw parallels of the UDL to the Orton-Gillingham principles and direct instruction methodology.

2. LITERATURE REVIEW

Some studies have found similar difficulties between learners with Specific Language Impairment (SLI) and those with dyslexia. These were found to have potential comorbidities with overlaps in the diagnostic criteria of individual disorders (Snowling, 2001; Catts, et al., 2005; Nithart, et al., 2009; Newbury, et al., 2011; Mccarthy, Hogan & Catts, 2012; Nash, et al., 2013; Adlof, et al., 2017). Despite distinct differences of SLI and dyslexia in the areas of phonological processing, word reading and spelling accuracy revealed in previous studies, a study showed that SLI and dyslexia share similar genetic influences, providing neurobiological evidence to support the role and thus emphasising the importance of oral language ability (Catts, et al., 2005; Newbury, et al., 2011; Mccarthy, Hogan & Catts, 2012). Building on this, Snowling (2001) explained that children at risk of dyslexia stemmed from a more general delay in oral language development and that improvement in language skills could serve as a protective factor for children with dyslexia. In essence, intervention programmes aimed at supporting learners with dyslexia, a language disorder, were postulated to also benefit learners with language difficulties, with or without comorbid dyslexia.

Orton-Gillingham Approach in the EESP

The EESP programme and its curriculum has been developed in reference to the Orton-Gillingham (OG) approach; a structured, sequential, multi-sensorial and phonics based approach channelled to teach the basic concepts of reading, spelling and writing (Ritchey & Goeke, 2006; Rose & Zirkel, 2007) which was developed in the 1960s for students with severe dyslexia. Skills taught through this approach are hierarchical in nature and focus on the automaticity of specific sub skills that follows a 'bottom-up approach'. Teaching using the OG approach involves intensive repetition, which is necessary in order for students with dyslexia to retain the components of phonological awareness as well as the various rules that need to be understood in order to achieve reading fluency (Shaywitz, 2003).

The main feature of the OG approach is its simultaneously multisensory instruction, which enables students to tap on multiple learning pathways in order to enhance working memory and learning. EESP lessons integrate multi-sensory learning through the use of manipulatives, Grammar games, the use of coloured and shape symbols in the teaching of 'Synthesis & Transformation' and annotating 'Reading Comprehension' texts, as well as the use of interactive SMART board to teach students how to approach questions in 'Reading Comprehension' (Leong, Asjamiah & Wang, 2017). Another characteristic of the OG approach is the teaching of new concepts in a systematic and structured manner, beginning with the easiest and then progressing gradually to acquire increasingly complex skills. Students are also given opportunities to transfer and apply their knowledge of phonogram concepts and spelling rules when attempting the 'Editing' component of the English paper. Apart from that, they are also taught various learning strategies in a sequential, incremental and cumulative way such that increasing confidence is attained at every step of the way.

Role and effectiveness of direct instruction

Researchers have proven that direct instruction methodology has been shown to be effective in helping students who struggle with language processing, vocabulary, and memory (Lewis & Doorlag, 2005). These diverse learners have benefited from explicit instruction in skills, concepts, rules, procedures, and strategies (Mercer & Mercer, 2005; Rosenberg, O'Shea, & O'Shea, 2006). The process of direct instruction provides intensive, systematic teacher input through modelling or examples, and offers many opportunities for students to practice specific targeted skills (Gagnon & Maccini, 2005). Students work in groups to receive new content and then participate in supported practice sessions. The pace of the lesson is fast with a high degree of student engagement and response. Teacher prompts and cues are given and then faded as students are guided to mastery. Throughout the process, the teacher catches student errors and provides appropriate corrective feedback.

The importance of the role direct or explicit teaching in a student's learning; including areas of phonemic awareness, phonics, fluency, vocabulary and comprehension, has been proven in a number of studies (Van Keer, 2004; Taylor, Peterson, Pearson and Rodriguez, 2002; National Institute of Child Health and Human Development, 2000). Rupley, Blair and Nichols' (2009) discussion on effective reading instruction for struggling readers contended the significance of explicit instruction in developing each of these above mentioned processes, which are involved in a collective interplay that allows effective reading acquisition.

When the characteristic features of the OG approach and direct instruction methodology are studied closely, it appears that there are parallels between both teaching approaches. The systematic and structured teaching of new concepts in the OG aligns to the explicit instruction of skills, concepts, rules, procedures and strategies of the direct

instruction approach. Both approaches also emphasise the importance of teaching strategies to students in a sequential, incremental & cumulative manner with increasing difficulty through the provision of modelling and examples given by teachers. Lastly, both approaches outline the importance of intensive repetition and opportunities to practice the skills that students have learnt while being supported with feedback from teachers. The parallel features of the OG and direct instruction have been summarised in the table below.

Table 1: Summary of OG approach and direct instruction

ORTON-GILLINGHAM (OG)	DIRECT INSTRUCTION
Systematic and structured . Sequential, incremental & cumulative Intensive repetition	Explicit instruction in skills, concepts, rules and strategies Intensive, systematic teacher input Opportunities to practice targeted skills with supported practice and corrective feedback

Universal Design for Learning

Universal Design for Learning (UDL) is a theoretical framework developed to expand learning opportunities for all individuals (Hall, Strangman & Meyer, 2003), to guide the development of curricula that are flexible and supportive of all students by decreasing the barriers that frequently limit student access to materials and learning in classrooms (Dolan & Hall, 2001; Meyer & Rose, 1998; Pisha & Coyne, 2001; Rose, 2001; Rose & Dolan, 2000; Rose & Meyer, 2002). As a curriculum approach, the UDL is developed based on research from the neurosciences and effective teaching practices. It prescribes that the design of curriculum should take into consideration the needs of all students in mind, so that teaching methods, materials, and modes of assessment are usable by all. Based on traditional curriculum, a student who has difficulty decoding or comprehending printed text is compelled to accustom and adapt to reading in print as best as he or she can. A UDL curriculum, however, is designed to be flexible by incorporating different mediums of presenting information so that alternatives are available. A UDL curriculum creates opportunities for adaptation so that it minimizes barriers and maximizes students' access to new information and learning. The UDL framework guides the development of curriculum by means of 3 principles (Table 2) that promotes flexibility in relation to 3 fundamental learning components in the brain: recognition, strategy, and affect (Rose & Meyer, 2002).

Table 2: The three UDL principles (Rose, 2001)

PRINCIPLES OF THE UNIVERSAL DESIGN FOR LEARNING (UDL) FRAMEWORK
Principle 1: To support recognition learning, provide multiple, flexible methods of presentation
Principle 2: To support strategic learning, provide multiple, flexible methods of expression and apprenticeship.
Principle 3: To support affective learning, provide multiple, flexible options for engagement.

Recognition learning

The first UDL principle focuses on recognition learning and the importance of providing multiple and flexible methods of presentation when teaching patterns. The UDL approach believes that no single teaching methodology for pattern recognition will be sufficient for every learner so it encourages the use of several elements and materials to support instructional content by providing multiple examples for the learner. The second recommended practice in recognition learning is to provide multiple media and formats. A wide range of tools for presenting instructional content are available digitally, thus teachers may manipulate size, colour contrasts, and other features to develop examples in multiple media and formats. These can be saved for future use and flexibly accessed by different students, depending on their needs and preferences. The third UDL teaching method for recognition emphasizes highlighting critical features and essential components to better support recognition. The fourth teaching method for recognition is to support background knowledge, and in this aspect, by evaluating students' knowledge about a concept before designing instruction, teachers can better support their students' knowledge base and scaffold instructions accordingly. (Rose & Meyer, 2002)

Strategic learning

Teachers need to vary and be flexible with their teaching methodologies so that students can find the most desirable and suitable learning strategy for themselves. This flexibility will help meet the needs of diverse students as they enter the instructional stage with different approaches and knowledge for learning. The strategic learning aspect of the UDL promotes that students should be given supported practice when they are engaged in initial learning of a new concept or skill to ensure success and eventual independence. Supported practice enables them to split up a complex concept into more manageable components before they fully master how to apply them. Students are also encouraged to

be active and responsible learners and getting teachers to respect individual differences and scaffold students as they move from initial learning to practiced level and less supported skills mastery. Lastly, in order to successfully demonstrate the skills that they have learned, teachers should provide flexible opportunities for demonstrating the skills by varying their expectations, requirements, degree of question difficulty and their means of assessment and scoring. (Rose & Meyer, 2002)

Affective learning

The third principle of UDL is affective learning, which is the recognition of the importance of engaging learners in instructional tasks. In line with the theory of differentiated instruction (Tomlinson, 2001) which reinforces the need for effective classroom management, this UDL principle highlights that engagement is a vital component of good classroom management, organization and instruction. Therefore, teachers are encouraged to adjust the levels of difficulty of the materials used in the classroom, provide varying levels of scaffolding to gain and maintain learner attention during the instructional episode, give rewards and offer choices of learning tools. By providing varying levels of scaffolding when giving instructions, students have access to varied learning contexts as well as choices about their learning environment. (Rose & Meyer, 2002)

Table 3: Comparison between UDL & combination of OG and direct instruction

UDL	OG & DIRECT INSTRUCTION
Offers multiple and flexible methods of presentation and examples	-
Provide multiple media and formats to present content of lesson	-
Highlights critical features and essential components to support recognition	Systematic and structured, explicit instruction of new skills taught
Flexible teaching methodologies to provide diverse learning needs	Simultaneously multisensory
Supported practice in initial learning of a new concept or skill to ensure success and eventual independence	Opportunities to practice targeted skills with supported practice and corrective feedback
Flexible opportunities to demonstrate the skills by varying their expectations, requirements, degree of question difficulty and means of assessment and scoring	Sequential, incremental & cumulative - from easy to complex skills

Effectiveness of smaller class size

Research studies in the area of supporting struggling learners have found positive effects of smaller class size on their learning processes and achievements (Pedder, 2006; Bosworth & Caliendo, 2007; Krassel & Heinesen, 2014; Bosworth, 2014; Harfitt & Tsui, 2015). Despite that, the average class size of a mainstream primary school in Singapore with varied learners was reported as 32.9 (Education Statistics Digest, 2015). This differed substantially from an average EESP class size of 4. As revealed in recent research, a smaller class size would create more opportunities for individual teaching time for each learner (Leong, 2015). These quality sessions could maximise learning and bring about higher achievements.

Despite large class sizes in mainstream schools, the Ministry of Education (MOE) have recognised the needs of students with mild Special Educational Needs (SEN) studying in these schools and has implemented a system to provide support in various ways. This includes the deployment of an AED LBS (Allied Educator in Learning and Behavioural Support) and SST (Special Education Schools' Teachers) in every mainstream primary school to provide support in order to meet the individual learning and behavioural needs of students with SEN (Moe.gov.sg, 2018). Having undergone compulsory courses for both building of theoretical knowledge and training of practical skills in which some of the modules includes Effective Teaching & Learning in Special Education, Behavioural and Communication Difficulties and Practice and Intervention Technique, these AEDs and SSTs have the required knowledge and skills to support these students (Nie.edu.sg, 2018).

In line with the benefits of small group teaching, the MOE has introduced school-based dyslexia remediation in primary schools in 2012. With the belief in the foundational importance of reading, these remediation sessions support Primary 3 and 4 students outside school hours by focusing on letter-sound associations. Through systematic screening processes, Primary 3 students were identified and offered this programme (Moe.gov.sg, 2012). It was reported that this programme was effective in improving spelling and writing (TODAY online, 2015).

However, besides being conducted with a smaller class size, it is important to note that this remediation programme provided by mainstream schools does not support students at Primary 5 and 6 levels and that it focuses on basic literacy skills. Other than reading and writing, struggling learners would require specific strategies and skills targeted at examinable components in order to meet the demands of examinations. To fill this gap, these skills were delivered in a small class size with structured and sequential teaching at DAS through the English Exams Skills programme (Leong, 2015).

Research Aims

This research aims to determine the effectiveness of the English Examination Skills Programme (EESP) on struggling, non-dyslexic learners. The programme and its carefully designed curriculum and teaching methodology has proven to benefit children with dyslexia and literacy acquisition difficulties (Leong, 2015; Leong, Asjamiah & Wang, 2017) . Therefore, the aim of this study is to explore how the EESP can be beneficial to students who are struggling in their school English examinations despite receiving additional support from school.

METHODS

Participants

A total of 10 students participated in our study. These are students who have come to the Dyslexia Association of Singapore for academic support because of their struggles with school despite not having a diagnosis of dyslexia. The detailed profiles of these students are collected and screened prior to enrolment via a learning profile questionnaire. Some examples of difficulties mentioned in the questionnaire include struggles to pass English Language examinations, difficulties with understanding and carrying out instructions, concentration and motivational issues, forgetfulness, and dependence on guidance from teacher and parents. The learning profile questionnaire also reflected that four of the student participants were suspected to have dyslexia but were not assessed, one was diagnosed with sensory integration issues, one was suspected to have speech and language impairment (SLI) and the rest were not identified to have any learning difficulties. These students are from Primary 3 to Primary 6 in their schools, and were placed in separate classes together with learners with dyslexia according to their school level and abilities for the purpose of this study.

Research Design

Students enrolled in the programme would start off by completing a pretest during their very first lesson. They would then undergo a 20-week intervention over a period of about 6 months before ending completing a posttest on the 20th week. The teachers who conducted these lessons were tasked to complete a student progress log (Appendix A) on weeks 10 and 20 to record the progress they have observed. At the end of the 20-week intervention, teacher and student interviews were also conducted. Tabulation of the pretest and posttest scores, an analysis of the students' pretest and posttest answers, the teacher log, as well as the teacher and student interviews were all data collection procedures implemented to triangulate and evaluate the effectiveness of the designed programme for struggling learners who might not have a diagnosis of dyslexia. Figure 1 provides a representation of the research design of this study.
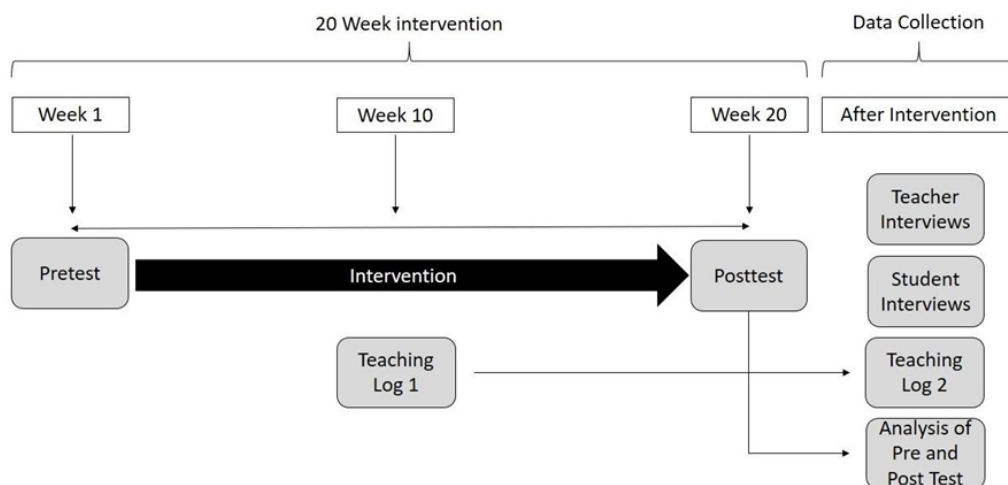
Figure 1: Data collection procedures

Instruction

Students enrolled in the intervention would have 20 hours of remediation of exam related topics over 20 weeks. Topics for Primary 3 and 4 students include grammar, editing and comprehension. Topics for Primary 5 and 6 students in both the Standard and Foundation stream include synthesis and transformation, editing and comprehension. Lessons were designed in accord with the OG principles as well as structured and conducted using the RIMAIR approach as described in Leong, Asjamiah and Wang (2017).

Data Collection Procedures

Pretest & Posttest Results
Of the 10 students who participated in the study, only 5 were present for both the pretest as well as the posttest at the start and end of the intervention programme. Four of these students were in the Primary 5 and 6 Standard stream, and one of them in the Primary 3 and 4 stream. The tabulation and analysis of the pretest and posttest data only took into account the 5 students with pretest and posttest data. All 10 students however were involved in other data collection procedures.

The completed pretest and posttest of the 5 students were individually marked and their scores were tabulated. These test papers were specific to the streams these students were placed in. Quantitative data in the form of a t-test and tests for effect sizes were recorded. Qualitative data from the pretests and posttests were also collected analysing

the errors of each student's script, and comparing the differences between each student's pretest and posttest scripts.

Student progress log

The teachers conducting the programme were tasked to complete a teaching log during the 10th and 20th session of the programme. Items in the log provided the teachers with opportunities to comment on their students' process of acquisition of skills taught in each component. Items also provided opportunities for teachers to indicate possible differences in learning observed between these students and their peers. There were also items that allowed teachers to indicate if students had benefited from the programme and how. A sample of the teaching log can be found in Appendix A.

Teacher interviews

Teacher interviews were also conducted after the programme. A total of 6 questions were asked with the objective of finding out the perceptions of teachers on the effectiveness of the lessons, as well as the transferability of the skills they taught to the students' school work. A question was also asked on the difficulties they faced in teaching these students. A sample of the teacher interview questions can be found in Appendix B.

Student interviews

Student interviews were conducted over the phone. A total of 11 questions relating to the familiarity, memory and understanding of the various topics taught were asked during the phone interview session. Answers to these interview questions were recorded for analysis. A sample of the student interview questions can be found in Appendix C.

RESULTS

Pretests & Posttests

Quantitative data

A paired samples t-test was conducted to evaluate the difference between the pretest and posttest scores of these 5 students. Results of the t-test ($p<.05$) suggest that there is a significant improvement between the pretest and posttest scores of these students.

An effect size analysis (Cohen, 1988) was also conducted as an alternative method in measuring the strengths of the improvements for the group of students. A Cohen's effect size value ($d=0.5$), a medium effect size, suggests average improvements of the 5 students. A separate analysis was also conducted looking at only the 4 students in the Primary 5 and 6 Standard stream. The Cohen's effect size value ($d=1.02$), a large effect size suggests large improvements of the 4 students in the Standard stream. Figure 2 presents a graphical illustration of the progress these 5 students made. It may be seen that only 1 student showed a small decline in raw scores from pre to post-test.
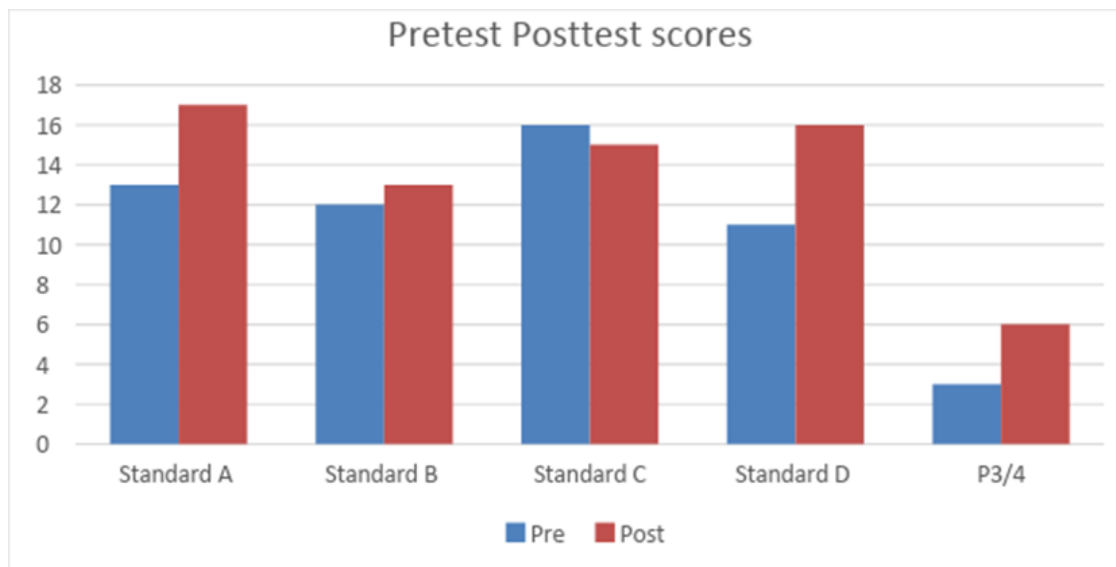
Figure 2: Comparison of pretest and posttest scores

Qualitative data

A qualitative analysis of the students' written responses in their pretest and posttests was conducted to supplement the quantitative scores. This process was necessary to look at the micro details of their ability to understand and apply the concepts, strategies and skills that they have acquired over the 20 weeks. When the written responses of the pretests were compared to those on the posttests, there was a marked difference in the quality of the students' responses. In the posttests, the majority of students attempted all the questions without leaving any blanks in the boxes or spaces provided. Students were also observed to have the awareness and ability to apply sub-skills they have learnt and acquired in specific components of the English exam paper.

Student progress log & teacher interviews

The information recorded in the student progress logs supported the teachers' responses during the interviews. The six teachers reported that students were able to comprehend the new concepts that were introduced to them during the EESP lessons but at least half of them required continued guidance and support to apply them in practice questions. These students also needed repetition and benefited from the compulsory review component at the start of every lesson as they often could not recall what was taught or introduced in the previous lesson. The students who had no diagnosis of dyslexia and were not attending the literacy remediation classes at DAS also needed more guidance in familiarising with spelling rules and strategies as they had no prior knowledge of these. Another observation made by teachers in the study was the weak reading comprehension ability of the students. The majority of them were struggling with text processing skills and understanding the content of the comprehension passages used

during the lessons, therefore time and effort had to be allocated to teach these students annotation techniques in order to help them interpret and make sense of their reading.

Student Interviews

After the twenty-week intervention period, five students were selected for phone interviews to find out their perceptions on the effectiveness of the EESP lessons, transferability of skills and concepts learnt to school work and how different EESP lessons were from school. The interview responses were analysed through coding processes.

Majority of the students interviewed generally felt that the programme helped them understand the components of the English examination paper better as they had more clarity on the required sub-skills of each component and were more confident in identifying concepts that were applicable to different question types. Two students highlighted that the difficulty level of questions at school and EESP were different as the questions formatted in school examination papers were more challenging and some concepts tested were beyond the scope that they had learnt during English lessons. According to them, at DAS, questions were formatted closely to the skills and concepts that were introduced, practiced and reviewed so these were much more manageable. On the overall, the students' responses revealed themes that will be summarised in the following sections of the Discussion.

DISCUSSION

Indicators of progress

Based on the analysis of pretests, posttests, progress logs and interviews, two types of observations were found to indicate progress in the students' abilities. These are reflected in Figure 3 (Summary of research findings) and will be explained in detail below.

i) Understanding of concepts

Our analysis of students' pretest and posttest answers showed that students showed an awareness of concepts they have been taught. In the Synthesis and Transformation component of both tests, students were able to apply changes in the aspect of time reference when they transformed a sentence from direct to indirect speech. Although their final answers were inaccurate because not all aspects that needed changes were done, the students showed awareness of the need to change specific parts of the sentences. Students were also observed to adhere to explicit instructions given by teachers during Comprehension lessons as seen in their practice of numbering paragraphs to help them in their search for answers when they attempt questions that require reference to specific paragraphs. There was also evidence of them highlighting key words and target words in Comprehension questions that would help them understand and process the requirements of the question.

ii) Application of concepts

The students' ability to apply concepts was observed in the accuracy of their pretest and posttest answers. These were evident across two components of the test which includes Synthesis and Transformation and Comprehension.

For Synthesis and Transformation questions that test on the topic of 'Direct and Indirect Speech', students were observed to be able to make appropriate and accurate changes in word classes from verbs to nouns or adjectives and changes in the aspect of pronouns. As for the Comprehension section, most of the students showed improvement in the accuracy of their answers for vocabulary-context questions as seen in the comparison of their pretest and posttest answers. For instance in the pre-test, a student quoted a whole sentence although the question required him to quote only a three-word phrase from the passage. In the post-test, he was able to quote the phrase accurately and this is evidence that he had understood the requirements of the question more clearly and had an awareness of 'phrase' in contrast to 'sentence'. There was also a general improvement across all students in answering 'True or False' question types. Some students left the True or False questions blank in the pretest but in the posttest, all the students attempted all questions although not all their responses were accurate.

Another aspect of comprehension skills that was observed across all students was the effort to annotate the passage and questions. Annotation skills and reference tracking skills are explicitly taught during EESP lessons as it builds coherence during the reading and text analysis process and helps students understand their reading content. Evidence of students applying these skills are observed in their numbering of paragraphs, application of the 'Circle, Underline, Box, Bracket' (CUBB) method for question analysis and highlighting key words from the passage and questions.

Factors that hinder progress

Based on analysis of pretests, posttests, progress logs and student-learning profiles, three types of observations were found to hinder the students' progress. These are reflected in Figure 3 (Summary of research findings) and will be explained in detail below.

i) Behaviour

An analysis of the teaching logs and learning profiles of students reported that all students in the study have some extent of difficulty with attention that made them easily distracted from tasks. These parents had indicated in the learning profiles that their children have difficulty channelling their focus and attention for a longer period of time when completing school assignments and revising their school work at home. These observations support the information recorded by EESP teachers in the learning logs. Teachers noted that some of the student participants required reminders to stay on task as they were easily distracted by their classmates.

ii) Memory retention

An analysis of teaching logs showed that students faced difficulty with retaining information that has been delivered during the lessons. The students needed a lot of repetition of concepts taught and needed guidance and constant reminders when attempting independent work. The lack of retention of concepts resulted in students having difficulty transferring the skills they have learnt into actual questions on their worksheets. Thus, a number of explicit explanations from the teachers were necessary in order to help them understand the concepts and skills again before they could attempt questions independently.

iii) Transferability

As earlier recorded in the results section, the student interviews revealed that while half of the students expressed that the EESP was beneficial to them as it helped them gain familiarity with topics and question types tested in their school English syllabus, there were students who felt that questions that they were given in their schools were more challenging and beyond the scope of what was taught in the EESP classes. This explains a difficulty in transferability of skills learned in the EESP classes to school based exam type questions. This could be due to the short period of 20 weeks these students were enrolled in the EESP. Given the wide range of topics tested for in school exams and in the PSLE, students would not have covered all heavy weighted topics within 20 weeks.

A closer look at observations made across the whole range of data sources (as illustrated and summarised in Figure 3) also revealed a relationship between the students' ability to retain concepts and strategies, transferability of these skills and their independent application into actual exam-formatted questions (as indicated by arrows). Taken together, the progress indicators and factors that hinder progress provides a clear indication of how the EESP is able to benefit a struggling learner, and how there are possible challenges that could and should be addressed.

LIMITATIONS

Although the research has reached its aims, there were some unavoidable limitations. Firstly, the sample size of struggling learners in the study was small. The results of the statistical data analysis might therefore not be able to represent a more general population of struggling learners. Secondly, the duration of the study lasted for 20 weeks and this may, to some extent, affect the students' ability to retain and transfer the skills they have acquired into actual exam-formatted questions. An hours lesson per week may lack the intensity to address the transferability issue that students have demonstrated. Therefore, a longer period of study of about 4 terms (40 weeks) might be more effective and significant in helping the students achieve more progress.
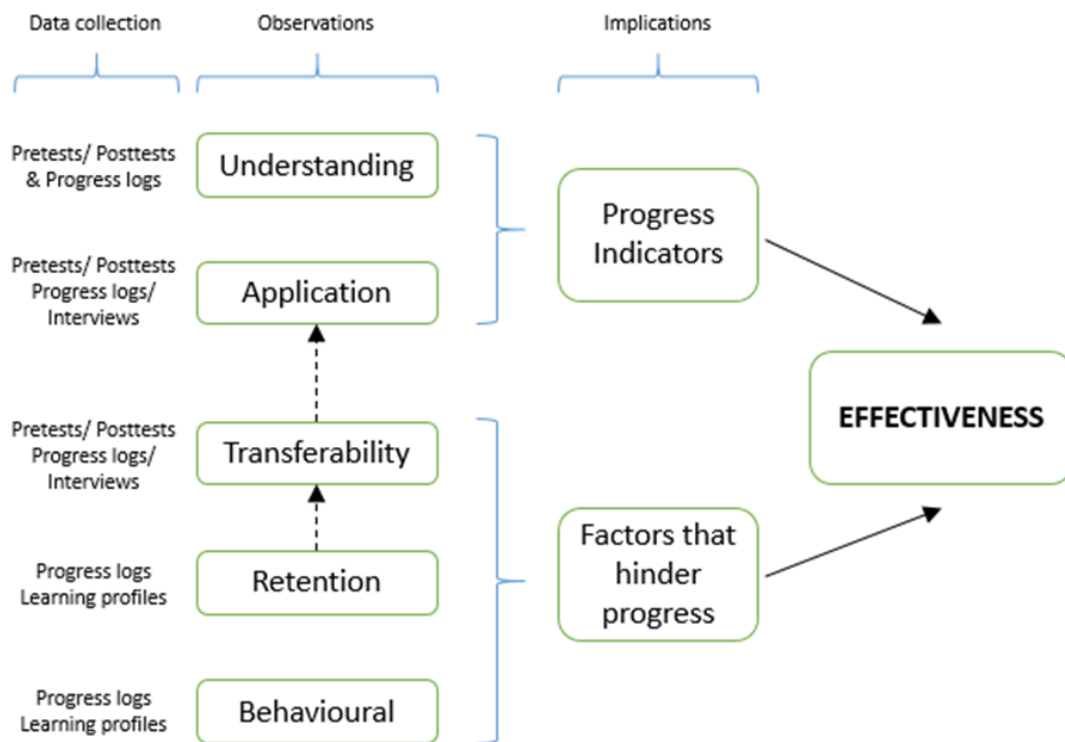
Figure 3: Summary of research findings

CONCLUSION & FUTURE CONSIDERATIONS

This study has shown that the EESP's structured teaching approach encompassing OG principles, direct instruction methodology and principles of UDL are effective for struggling learners. As discussed in the literature, the parallels between OG, direct instruction and UDL principles such as placing emphasis on essential components, flexible teaching methodologies, guided practice and opportunities to demonstrate skills, are already reflected in the programme's existing teaching methodology and classroom practices.

Our results and findings have also demonstrated that struggling learners display difficulties similar to dyslexics in some aspects of acquiring literacy and language skills such as behavioural issues, memory retention and transferability difficulties. These factors largely affect and hinder the students' ability to make progress in the EESP. The students in general have benefited from the 20 weeks of intervention through the exposure to new skills and strategies and how these are applicable to exam-formatted questions but all of them could possibly fully benefit to a greater extent if the intervention period was longer.

If the programme were to accept students beyond dyslexia in the future, it needs to take into consideration the entry criteria in terms of the range of scores attained by students in their school English examinations. Those who are severely struggling in school might not benefit from the programme intervention because of the wide gap in aspects of language and literacy skills these areas which would require another form of intervention. These severely struggling learners could either have low IQ levels or other learning difficulties that the scope of the programme cannot address. Another future consideration to study the effectiveness of the EESP would be to embark on another study that looks at offering intervention for struggling learners with increased frequency, intensity and a longer duration of the study, perhaps incorporating some of the flexible modes of presentation recommended by UDL.

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APPENDIX A

EESP NON-DYSLEXIC RESEARCH: STUDENT PROGRESS LOG
Student: **Level/Stream:**
EdT: **Centre:**
Term/Year:
EDITING
Describe the process of the student's acquisition of the skills taught? (Comment on the student's understanding, application and automaticity)
How different is the student from his/her peers in understanding Editing concepts?
GRAMMAR (LEAVE BLANK IF NOT APPLICABLE)
Describe the process of the student's acquisition of the skills taught? (Comment on the student's understanding, application and automaticity)
How different is the student from his/her peers in understanding Grammar concepts?
SYNTHESIS & TRANSFORMATION (LEAVE BLANK IF NOT APPLICABLE)
Describe the process of the student's acquisition of the skills taught? (Comment on the student's understanding, application and automaticity)
How different is the student from his/her peers in understanding Synthesis and Transformation concepts?
COMPREHENSION
Describe the process of the student's acquisition of the skills taught? (Comment on the student's understanding, application and automaticity)
How different is the student from his/her peers in understanding Comprehension concepts?
GENERAL
Has the student benefitted from the programme? How?

APPENDIX B: INTERVIEW QUESTIONS FOR TEACHERS

OBJECTIVES	QUESTIONS	PROMPTS
1. To find out the perceptions of *EdTs on the effectiveness of the **EESP lessons.	**1. Has EESP lessons helped the child in his/ her answering of Editing questions in class?**	(If yes) How does it help? (If no) Why does it not help?
	2. Has EESP lessons helped the child in his/ her answering of Synthesis and Transformation questions in class?	
	3. Has EESP lessons helped the child in his/ her answering of Comprehension questions in class?	
	4. Has EESP lessons helped the child in his/ her answering of Grammar questions in class?	
2. To find out the perceptions of *EdTs on the effectiveness of the **EESP lessons and the transferability of skills and concepts taught to school work.	**5. Has EESP helped the child's learning in school?**	Do you think he/she applies the skills and concepts learnt in school and at home?
3. To find out if there are any difficulties faced when teaching that could possibly hinder the acquisition of skills and concepts	**6. What are some difficulties faced when teaching him/her?**	What about in terms of: 1. Delivery of the lesson? 2. Students' learning? 3. Application of skills and concepts learnt?

APPENDIX C: INTERVIEW QUESTIONS FOR STUDENTS

OBJECTIVES	QUESTIONS	PROMPTS
1. To find out the perceptions of students on the effectiveness of the **EESP lessons.	1. **Has EESP lessons helped you in your answering of Editing questions in class?**	(If yes) How does it help? (If no) Why does it not help?
	2. **Has EESP lessons helped you in your answering of Synthesis and Transformation questions in class?**	
	3. **Has EESP lessons helped you in your answering of Comprehension questions in class?**	
	4. **Has EESP lessons helped you in your answering of Grammar questions in class?**	
2. To find out the perceptions of students on the effectiveness of the **EESP lessons and the transferability of skills and concepts taught to school work.	5. **Has EESP helped your learning in school?**	(If yes) How does it help? (If no) Why does it not help?
3. To find out if students are aware of what is taught in **EESP lessons and how they differ from school	6. **Are EESP lessons different from school? (If yes) How are they different?**	