





EVALUATION OF DAS PROGRAMMES








MAP ADMISSIONS

Where the learner's profile is drawn up and placement into programme is recommended.


- Assessments
- Profiling of students
- Recommendations for intervention



MAP QUALITY ASSURANCE

Where the learner's progress is monitored and abilities furthered through support.

- Progress monitoring
- Placement support
- Quality standards in teaching




MAP INTEGRATED CURRICULUM

Where the learner participates in collaborative learning through the integrated curriculum.

- Group-based individualised intervention
- Use of Technology
- Phonics, vocabulary, reading fluency / comprehension and writing







"We brought our daughter to DAS for a psychological assessment for dyslexia in late 2014. We were referred to Ms Tan Lyn Lee Jae. Ms Tan was not only highly intuitive in her assessment, she was very approachable and affable and went out of her way to address all of our concerns and queries. We are very grateful to Ms Tan for the support she has offered to us as parents who were learning something relatively new about our daughter's learning profile. All in all, we found the level of service offered by DAS beyond satisfactory." - Parent of a primary school student




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MOE-aided DAS Literacy Programme (MAP)

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Dyslexia Association of Singapore

The MOE-aided DAS Literacy Programme (MAP) is the main literacy programme offered at the Dyslexia Association of Singapore (DAS) and was started in 1993. In 2013, DAS underwent an organisational restructure, and the main literacy programme was renamed to reflect the support it received from Singapore's Ministry of Education.

MAP comprises three main departments: Admissions, Curriculum Development and Enhancement and Quality Assurance. The main roles of the various departments are summarised below:

Admissions

A team of psychologists participate in screening of learners to enable identification of at-risk students. Upon receipt of assessment applications from parents, schools and other professionals supporting learners, specialist and educational psychologists conduct assessments to formally diagnose the needs of the learners, and subsequently, make placement referrals for intervention. A team of administrative staff support the referral process as well as bursary needs of students who may require financial assistance.

Curriculum Development and Enhancement

A team of experienced senior and lead Educational Therapists (EdTs) regularly evaluate the current curriculum and its relevance based on profiles of students and

recommended intervention by the Admissions team. Further development, implementation and enhancement of the curriculum are based on these evaluations and proposals for additional programmes within the curriculum are also considered so that all students equally benefit from MAP.

Quality Assurance

A team of educational advisors conduct needs analysis, and assist with the development and support of educators through broad based support as well as intensive remediation guidance. The evaluation of educator performance and formulation of further training to groom educators further ensures that the educators are able to effectively translate the curriculum to meet the needs of their learners. Additionally, through progress monitoring of students and their graduation, this department keeps its view on the quality of the programme through the learners.

INCREASED STUDENT NUMBERS

As shown in figure 1, Admissions conducted 1110 assessments in 2014. This was a marked increase from 2013, when 905 assessments were conducted.

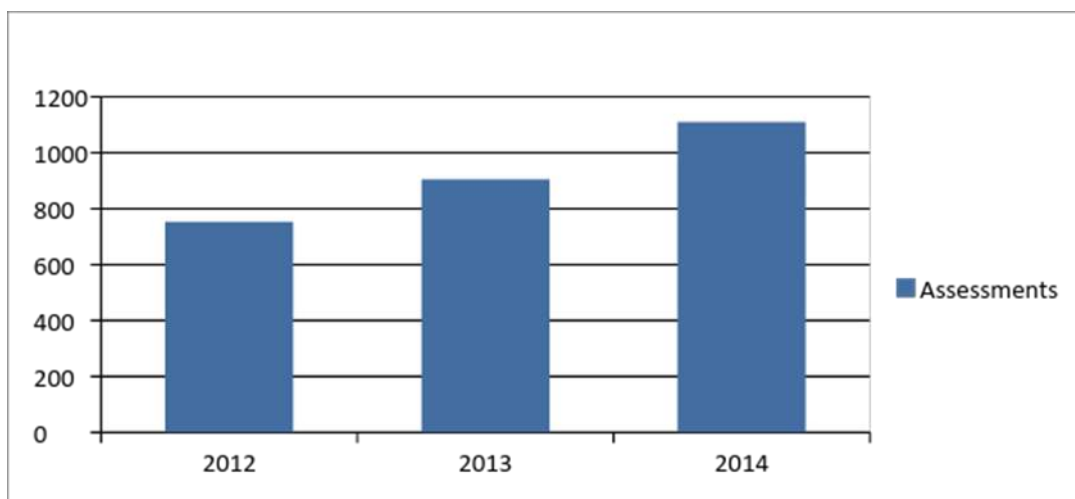


Figure 1: Assessment numbers over 3 years

Similarly, as shown in figure 2, MAP student enrolment too saw an increase. While in 2013, 2602 students attended the programme, in 2014 it rose to 2787.

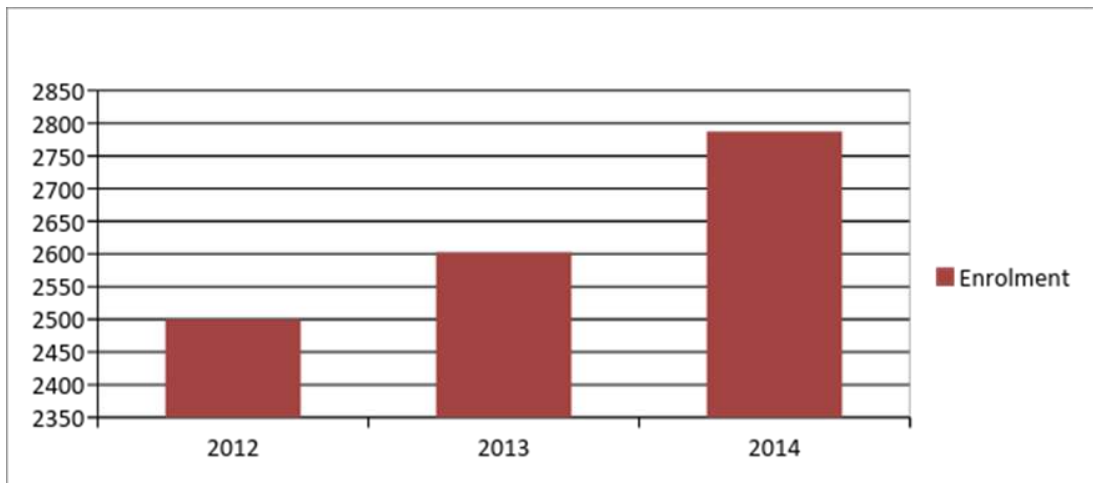


Figure 2: Student enrolment over 3 years

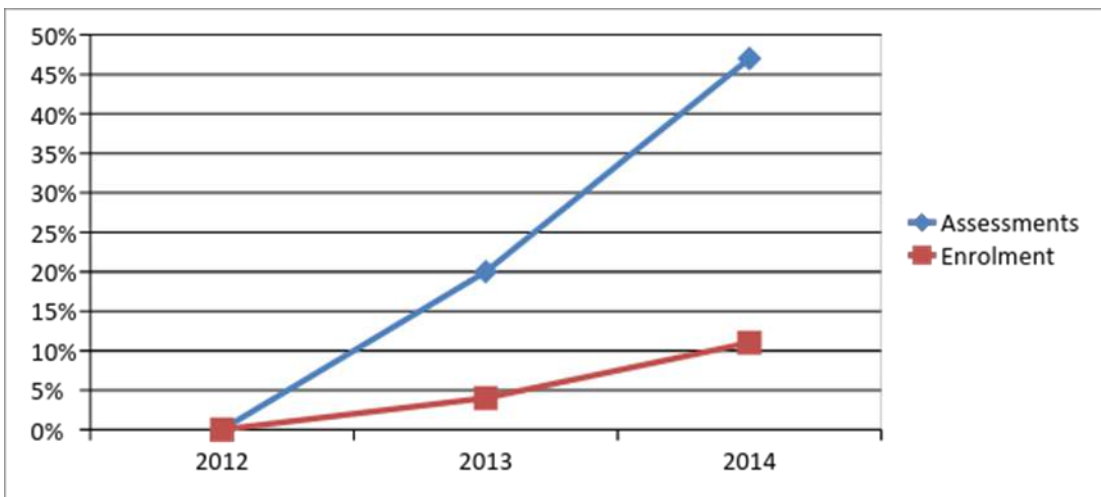


Figure 3: % increase in student numbers since 2012

Overall, in the last 2 years, MAP made significant progress in increasing the number of learners who accessed our assessment and remediation services. This is demonstrated in figure 3.

COMMENTARY ON STUDENT TRENDS

Learning profiles and student banding

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

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

Consequently, a mass banding exercise commenced with the intention of profiling existing MAP students. In grouping existing students, psychologists utilised available information from the students' psychological reports to position them as Band A, B or C students. Within each band, there are three levels of literacy learning, making it nine levels in total.

The reports used in this banding exercise were either original psychological reports submitted when the learner first entered the programme, the oldest of which was completed in 2006 or review assessment reports. This mass banding exercise of 2632 current students allowed us to analyse the learning profiles of our students and revealed that the majority of current MAP students were at the A3 level (figure 4).

In order to establish the majority profile of students entering the programme in 2014, new students were banded from entry and this was separately analysed. Interestingly, a review of the 841 new students entering the programme also had a majority profile of Band A3 (figure 4). This revealed that there has been no significant shift over the years in the student learning profiles.

Interestingly, there appears to be a shift towards an increase in Band A type learners, as opposed to Band B type learners, which reflects what may be described as the typical dyslexic profile. Band A covers emergent literacy skills and students who are assigned to be in this band typically have language or cognitive weaknesses that co-occur with their dyslexia. They often show emergent literacy skills, such as having some awareness of the alphabet, how letters are formed, how

text goes across the page from left to right and being able to read and spell basic words. These students need support in boosting their listening and speaking skills while improving on their literacy foundations. Band B, on the other hand, covers functional literacy skills and students who are placed in this band would likely have fairly developed language skills (e.g., verbal scores above 80) but significant basic literacy difficulties (reading and spelling scores less than 80). They may have some reading and spelling skills of familiar words but struggle with understanding and applying letter-sound correspondence rules in reading and spelling new words (pseudoword decoding skills less than 80). They also have reading fluency, reading comprehension and paragraph writing difficulties (scores on various measures less than 80).

2013 (Mass) Banding & 2014 Banding Comparison

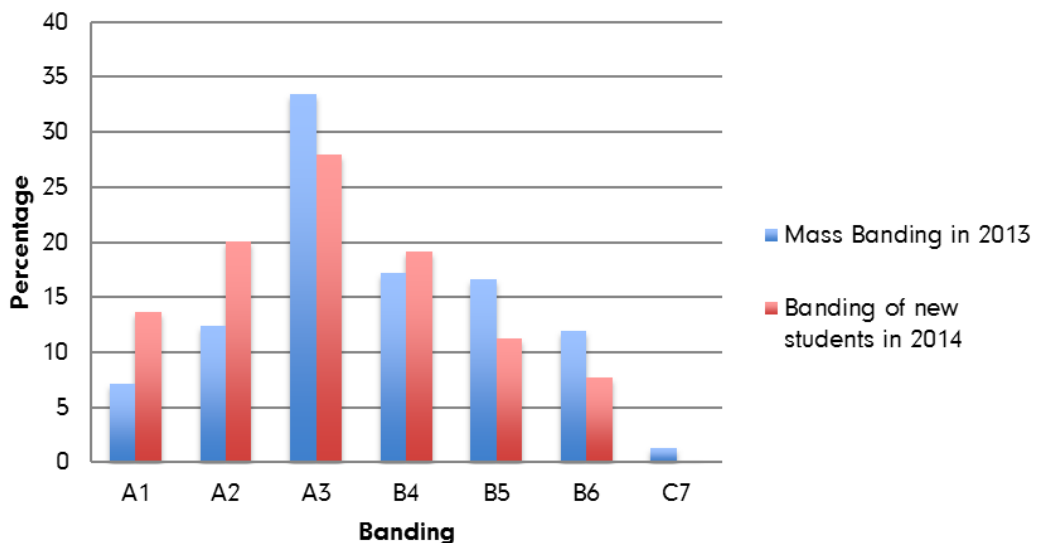


Figure 4: Student profiles through banding

Since the mass banding was based on reports that were potentially older and didn't capture the progress that the students had made, the datedness of some reports was an area of concern in accurately reflecting the current profiles of students. We aim to investigate this further through the bi-annual progress monitoring exercise.

GENDER

There has been a lot of interest on gender implications with dyslexia. For instance, in DAS, the ratio of boys to girls currently stands at around 2.5 to 1. Sally Shaywitz put forward that this was a result of behaviour or more specifically, a selection bias based on behaviour, which caused boys to stand out more prominently as a reflection of their learning difficulties. With that, the statement on dyslexia was that there was no significant difference in its pervasiveness.

Since then, there have been other interesting suggestions. A 2004 study by Dr. Michael Rutter and colleagues claimed that there is indeed a prevalence of dyslexia in boys (18-22% in boys compared to 8-13% in girls), and while not conclusive, a range of reasons have been offered including differences in brain structures between the genders and a higher genetic and environmental sensitivity to dyslexia in boys than in girls.

Translating Dr Rutter's percentage into a ratio shows a range of 2.25-1.7 boys to 1 girl and at a glance, this shows that MAP is moving closer to a more accurate reflection of the gender profile of dyslexics found in the larger population. In 2003, the ratio was 4 boys to 1 girl and a 2008 report revealed that there was no change in that ratio. However, in 2011, a ratio of 3 boys to 1 girl was reported and now, the ratio stands at 2.5:1. One can argue that previously, MAP was not effectively reaching out to and supporting girls with dyslexia, but the current ratio shows that although the boys still outnumber the girls, the difference is closer to the actual prominence of dyslexia between the sexes.

GRADUATION

In 2014, 167 students graduated from MAP. EdTs recommend students for graduation and these recommendations are reviewed by the graduation panel which compares their performance in MAP against their performance in schools before approving their status.

MAP graduates consist of two groups:

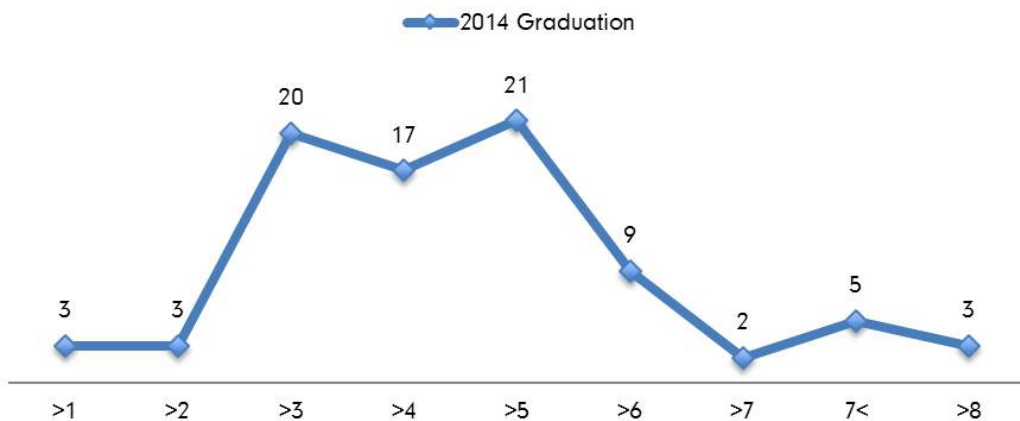
- ◆ Auto-graduates, who exit the programme because they are about to exit secondary school education and,
- ◆ Graduates, who meet the graduation criteria

The 167 graduates consisted of recommended graduates as well auto-grads – 84 students were auto-graduates. A total of 96 students were recommended for graduation and approximately 86.5% of them were approved for graduation, while

13.5% were advised to continue their intervention with DAS as they had not met the requirements for graduation, this works out to 83 students who were given approval for graduation. A further analysis of the graduates revealed (please refer to figure 5):

- ◆ Highest number of graduates who stayed on the programme between four to five years equals to 21 (approx. 25.3% of the cohort of 83 students)
- ◆ Highest percentage of graduates belonged to the Secondary two school level (21.69%) with Secondary three students closely following at 20.48%

2014 Graduation



2014 Graduation

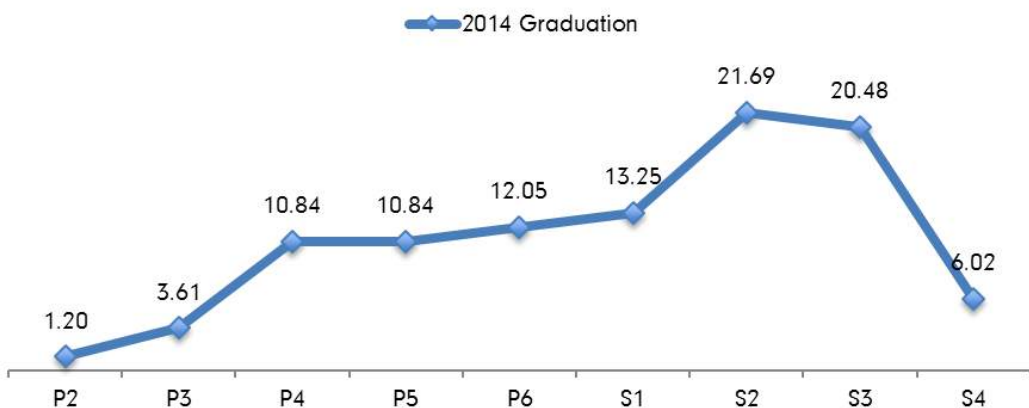


Figure 5: Graduation by duration & school level

For future evaluations, it would be important to continue to monitor the age at which learners start their remediation with MAP and study the trend of whether students are graduating sooner and within a shorter duration, which is the aim of the programme. Given the above-mentioned figures, with Secondary two students and a duration of four to five years being the majority, it suggests that most students enrolled when they were in primary three or four. There is clear evidence that early intervention produces greater benefits to the learners and with a younger starting age, does this correspond to shorter duration of intervention and sooner graduation from MAP?

Additionally, a review of the profiles of students who graduated from the programme in less than a year and those that graduated after more than 7 years may enable a further refinement of the admissions process with reference to suitability of the taught programme. With both group profiles in mind, what in the programme enabled some students to graduate much sooner and others to take twice as long as the average student? In last year's review of the programme we looked into a minority group we called intervention non-responders – is there a similarity in profiles between these non-responders and those who graduate later. Subsequent evaluations will aim to understand and comment on this.

MOE-aided DAS Literacy Programme (MAP): Admissions

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REPORT ON THE FINDINGS FROM MAP'S REVIEW PSYCHOLOGICAL ASSESSMENT DATA

MAP Admissions took a sampling of data from review assessments conducted in 2014 and ran some analyses to see if these students have made significant progress in any of the language and literacy measures.

The outcome measures covered the areas of language (verbal) and literacy (i.e. reading, spelling, reading comprehension, pseudoword decoding). In these analyses, it is assumed that the students are attending MAP between their first and last (review) assessments.

This is the summary of the analyses, based on the information from 174 students.

- ◆ Mean age of first assessment done: 97.78 months (or 8 years 1 month), SD 20.3 months.
- ◆ Mean duration of time between first and last (review) assessments: 50.40 (or 4 years 2 months), SD 22.02 months.
- ◆ At first assessment, students' profiles are as follows: Verbal (N=170, M=90.52, SD=13.62), Reading (N=168, M=90.29, SD=11.45), Spelling (N=163, M=88.30, SD=12.17), Reading Comprehension (N=157, M=89.41, SD=12.95) and Pseudoword Decoding (N=84, M=84.78, SD=11.04). Paired samples t-test analyses were run to compare the mean performance of students from first to last (review) assessments to see if they made progress in language and literacy measures*.

All literacy measures were found to be not significant. However, it was found that the students made significant improvement in their verbal abilities (i.e. improving from a mean standard score of 90.37 to 92.33 over time).

- ◆ The group was further split up into young (less than 8 years old) and old (8 years old or older) based on when they came for their first assessment.
- ◆ Independent t-tests were run on the difference in scores (from first and last assessments) to see if it made a difference when they received intervention*.

No significant differences were found between young and old groups on the language measure or any of the literacy measures except reading. In reading, younger students were found to make better progress (mean difference 2.37) compared to the older students (mean difference -3.60). Although no significant improvement was seen over the four year period overall, learners generally maintained their progress, which can be difficult for learners with dyslexia. Hence, the programme has benefitted the learners.

EXTENDING OUR SUPPORT: A REVIEW OF THE NON-DYSLEXIC ENTRY INTO MAP

Upon feedback from several parents over a few years, MAP reviewed the profiles of the students who applied to enter the programme and through that, a consistent group of students emerged who may benefit from the programme but were unable to access it due to the lack of a dyslexia diagnosis. These students are non-dyslexic, in that they were not diagnosed with dyslexia. However, their literacy difficulties often resembled those of dyslexic learners and/or they had other diagnosed difficulties.

Consequently, MAP trialled a controlled, non-dyslexic entry into the programme. The trial for Non - dyslexic students in MAP was opened from September 2014 to December 2014. An extension was made to current DAS preschool students who were placed in holding classes, because assessments had not been conducted yet.

Although there were a significantly larger number of students that were not diagnosed to be dyslexic but continued to have literacy concerns, many were not offered non-dyslexic entry into classes by Admissions psychologists. Some of the reasons raised by the psychologist include:

- ◆ Financial constraints of the family.
- ◆ Very low cognitive/verbal abilities
- ◆ child has other co-morbidity that has not been addressed (ie, attention, hearing, visual issues)

A total of 15 students were offered Non-Dyslexic access. However, only 5 students took up the classes, a 33% take-up rate. This suggests that perhaps the demand for the classes by parents were not as high as previously believed. It also urged a consideration to better understand why some clients decided not to take on the offered classes.

Table 1 summarises the reasons provided by the 10 cases that did not take up classes after being offered and also suggests reasons why some decided to take up the non-dyslexic entry:

Table 1: Reasons why Non-dyslexic entry to classes were accepted or not

Didn't take on classes	Possible reasons to take on classes
don't feel that their child would require specialist intervention as they are not dyslexic	from middle to higher income families
distance to travel to the centre is inconvenient location	generally weak cognitive abilities but may have adequate literacy attainments after receiving support from our preschool programme
fees is comparable to commercial classes	may have weak cognitive abilities and also continue to have weak literacy attainments
cost too expensive	may have significant language difficulties/ ESL concerns
declined after waiting some time for the classes (for preschool cases)	centre of choice is likely one that offer non dyslexic classes.
found a tutor to help the child	already a student in our Preschool classes

As the placements of non-dyslexic students in MAP classes have financial implications, concerns were raised regarding the tracking of such students in MAP

classes. Currently, Centre Managers (CMs) are required to tag case files that are sent to them to highlight the student's non-dyslexic status. Further, the following recommendations are suggested:

- ◆ CMs would be required to inform Educational Therapists (EdTs) of student's non-dyslexic status upon placement in classes. EdTs should also indicate the status on the student's working file (red) so that new EdTs who might take over the case are aware of the child's status.
- ◆ Placement agreement form should also be placed in student's working file as a reminder of the status.
- ◆ EdTs are to advise parents of child's progress after six months and one year of being on the programme.
- ◆ Depending on the progress of the child, EdTs can advise parents to:
 - ◇ Continue with the programme at current rate if the child is showing some improvements
 - ◇ Graduate from the programme if the child has shown marked improvements
 - ◇ Request for a review assessment (lit only) if the child shows greater signs of being dyslexic (especially for children who have entered at a younger age).

Considering that the numbers are likely to be self limiting given the profile of the students that are likely to be offered and would sign up for non dyslexic cases, the placement of non - dyslexic students in MAP classes is recommended to continue. However, the following needs to be considered:

- ◆ As the majority of non-dyslexic students are likely to come from our preschool classes and are familiar with a particular teacher/centre, opening the classes to all Learning Centres would help support these full fee paying students.
- ◆ Clear and accurate briefing needs to be provided to the parents and an agreement signed to ensure that they are aware that their child is not dyslexic and hence, not subsidised.
- ◆ Close adherence to the recommended placement procedure needs to be exercised to ensure that non-dyslexic students are monitored, EdTs are aware of their slight variance in profile and correct payment is taken.

MOE-aided DAS Literacy Programme (MAP): Curriculum Development and Enhancement

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CONTEXTUALISING RESOURCES

The Integrated MAP Curriculum (IMC) aims to cater to the varied profiles of students and to ensure that they progress smoothly in a cumulative and sequential manner, building up on their strengths as well as working on their weaknesses. Hence, the curriculum was enhanced to include the following key essential learning components- Language and Vocabulary, Phonemic Awareness, Phonics, Reading Fluency, Reading Comprehension Writing (Grammar for Writing, Advanced Writing) and Morphology.

IMC was also designed to motivate and engage students while at the same time develop and equip them with the essential literacy skills. Thus, the IMC resource packs developed emphasise the use of relevant and localised content and context with teaching principles that spur the development of students into independent learners with the ability to apply a wide range of skills to a diversity of contexts. At certain levels, the IMC also hopes to enable students to cope with the curriculum demands they experience in school.

WHAT THE END USERS THINK: TEACHER FEEDBACK ON CURRICULUM ENHANCEMENTS

Following the launch of the IMC, several platforms were created to collate feedback informally from the EdTs and to enable the Curriculum Team to take a more proactive approach in evaluating the development and implementation of the IMC. A summary of the efforts to collect feedback is as follows:

- ◆ At the initial phase, most of the queries were communicated directly to the MAP Assistant Director (Curriculum Development and Implementation) for clarification and support.
- ◆ Subsequently, a designated Curriculum Google Site, a one stop information hub, was initiated to include any updates or information related to the curriculum, to better inform and respond to the EdTs in a timely and more efficient manner. These were monitored closely by the Curriculum Team.
- ◆ Opportunities for direct (face-to-face) feedback and discussion arose during the focus group sessions as well as the web chat conferences that were initiated to further support the EdTs.
- ◆ Further, a small sample of EdTs based at the different learning centres and ranging in terms of gender, age and teaching experience were invited to share their views and feedback on the IMC, the resource packs as well as the lesson plan templates towards the end of Term 4, 2014.

The feedback received, which drew on a diverse sample and different sources of information and suggestions, allowed the Curriculum Team to discuss, consolidate, identify and act on making the curriculum more accessible to the EdTs.

MAP TEACHING MATERIALS

There were many compliments on the quality and the comprehensive range of teaching resources and materials catering to the different profiles of students, making the planning for differentiated lessons more manageable.

Table 2: Feedback on the MAP Teaching Materials

EdT (Miss Sue-Lynn): The Curriculum Team has done a brilliant job in developing teaching materials. I think it has really been helpful for the EdTs to use the teaching materials to plan and differentiate the lessons according to the learning needs of the students.

EdT (Miss Yiyao): I really, really like the controlled texts in the worksheets as it saves me time to look for relevant reading materials for my students. I also like the differentiated worksheets that are able to cater to the different needs of my students.

MAP LESSON PLAN TEMPLATES

Most of the EdTs were delighted with the lesson plan templates created to assist them in planning their lessons more effectively.

Table 3: Feedback on MAP lesson plan templates

EdT (Miss Halimah): I find the lesson plan templates very user-friendly and comprehensive as compared to the past. I used to have a rough sheet of paper whereby I will strike off the sounds I've used. Now that the scope and sequence is included in the lesson plan templates, lesson planning has become so much easier.

EdT (Miss Xin Ying): The lesson plan templates create a very structured and user-friendly way of recording what we are planning to teach our students.

EdTs (Miss Nur Farahin and Miss Nur Ashikin): It is very efficient to have the scope and sequence and the sounds included for multiple spellings for us to refer to especially since we are new.

IMC MATRIX

The IMC is more comprehensive and holistic as it now encompasses the essential learning components that enable the students to cope with the literacy challenges they face in school.

Table 4: Feedback on IMC matrix

EdT (Miss Xin Ying): The IMC reminds us, EdTs that the lessons should not emphasise on phonics alone. We also have to bear in mind that these students of ours need so much more than just the ability to blend, encode and decode. More importantly, they need a more holistic curriculum that encompasses writing as well as reading comprehension.

EdT (Miss Sharyfah): The IMC provides more opportunities to teach more skills. It includes components such as Grammar for Writing and the deconstruction of reading passages for the students.

IMC PACKS (GUIDES)

The IMC packs developed serve as teaching guides for EdTs to refer to when they plan their lessons.

Table 5: Feedback on IMC Packs

EdT (Miss Farahin): I like the Grammar for Writing pack because it is so structured and I know exactly how to teach it.

EdT (Miss Ashikin): As a trainee EdT, the clear instructions included in the curriculum packs are very beneficial for me.

EdT (Miss Yiyao): The Writing pack serves as a guide for the EdTs to plan their lessons to include relevant skills needed to work with our students.

MAP LOCALISATION OF CURRICULUM

For instance, some phonograms and concepts were either removed or shifted from their original positions in the Integrated scope and sequence.

Table 6: Feedback on the localisation of the Curriculum

EdT (Mr Shaun): The IMC provides a better and more fluid sense of progression, moving up the scope and sequence as there are now more relevant spelling patterns, affixes grouped together to teach the students

Based on the feedback gathered, further enhancements to the curriculum and materials include the following:

- ◆ curriculum resource packs to include longer controlled texts and additional activities, worksheets that they can tap on
- ◆ Lesson plan template revision to enable them to plan and complete their lessons within a stipulated lesson period of 1hr, twice weekly.
- ◆ Videos on how and what to teach

In conclusion, IMC has met with resounding success and educators using it have seen this as a positive enhancement. With the continued feedback and enhancement, MAP endeavours to continue to develop the IMC.

MOE-aided DAS Literacy Programme (MAP) Quality Assurance

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TEACHER EFFICACY: WHAT THE 2014 QUALITY ASSURANCE AUDIT REVEALED

The quality assurance audits are put in place to serve as a supportive as well as an evaluative tool for Educational Therapists (Edts).

The lesson observation audit consists of an evaluation of the following process:

1. Lesson planning and execution
2. Communication and class management
3. Professionalism

If Edts do not receive a “competent” status for lesson planning and execution, a re-observation is required (Evaluative tool). If Edts do not receive a “competent” status in Point 2 and 3 – an Educational Advisor (EA) will advise the Educational Therapist on how to improve in these areas (Supportive).

After the lesson observation, Educational Advisors meet up with the Edts and discuss with them on the gaps in planning and execution of the lesson and action plans are discussed. Educational Advisors give educative suggestions so that the Edt can adjust their teaching accordingly.

For the documentation audit, EAs peruse through the lesson plans of 1 adhoc class for the previous term and verify it against the students’ worksheets and also compare it against the programme plan created by the Edt for that particular class. It is imperative that all Edts prepare a Programme plan for all students under their charge.

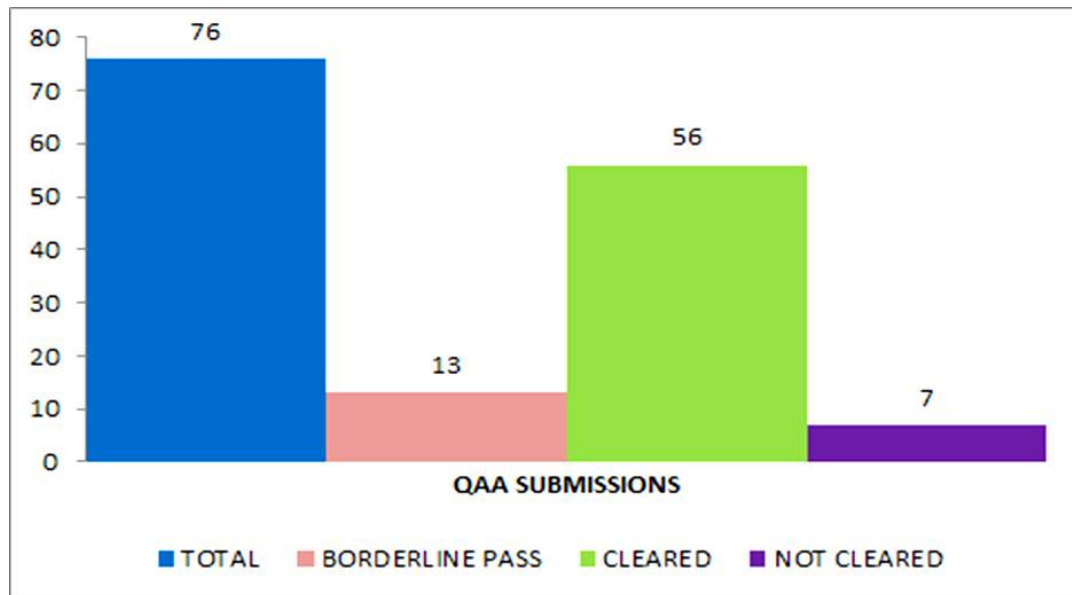


Figure 6: Statistics of QAA 2014

Programme plans are in place so that Edts can observe and plan for the needs of the student for the term and adjust their teaching, if needed. However in FY 2014-2015, the Documentation audit was not taken into consideration in the evaluation of an EdTs performance.

In 2014, a total of 76 Educational Therapists were audited and 7 Edts did not clear the audit. This translates to a 91% pass rate, an excellent outcome for the first year of audits. Another 13 Edts had borderline passes only. Edts who did not clear their audit and those who have received only borderline passes stood at about 26% of the total number of Edts who were audited. This situation will be monitored over the next few years and MAP's aim is two-fold:

- ◆ Reduction of the failure rate
- ◆ Overall enhancement of the quality of the instruction by EdTs, including those who passed

DAS has always set high standards for delivery of lessons. Since the 2014 audits were our very first organisation wide educational audit exercise, any Edt who did not conform to the standards was given advice on how to improve their teaching and no consequences of non-conformity were stipulated. However, for 2015 audits - receiving a competent status for audit is part of each Edt's KPI.

Also, a more structured support system will be implemented in 2015 to ensure that audit requirements are met by all Edts.

Another important process of the quality assurance audits is to identify training needs for Edts. This will enable better planning for the subsequent years and allows the organisation to plan for professional development in a more meaningful manner.

OPTIMISING COLLABORATIVE LEARNING: COMMENTARY ON STUDENT PLACEMENT INTO GROUPS

Upon receiving information about student profiles from Admissions, CMs place students into suitable groups in order to optimise the collaborative learning experience. Students' placements are monitored by the Quality Assurance division to ensure quality placements are in place across the 13 learning centres.

Edts' timetables are reviewed to ensure that students are placed in accordance to set placement guidelines, which are stated below:

1. Not more than 3 levels in learners' abilities within a class
2. Only primary or secondary students in a class
3. 1 hour twice a week lessons for those in lower primary levels
4. Two 1 hour classes to be separated by at least a day in between
5. Students in a class to have less than 2 years difference in school levels

Placements that do not meet with the criteria are flagged out and a report is generated for Centre Managers to make the necessary adjustments. Points 1, 2 and 5 of the placement criteria have been under particular scrutiny, as they most directly impact the quality of instruction. An evaluation of a random sample of timetables shows that point 1 of the placement criteria requires greater adherence as 44% of the classes didn't abide by that criteria. In contrast, only 4% and 1% of classes were in breach of points 2 and 5.

The less than ideal showing in point 1 may be due to the recent enhancements made in profiling and it is necessary to continue to provide feedback to the CMs to improve consistency in adherence to this placement criteria.

SPOTLIGHT ON CHALLENGING NEEDS: INTENSIVE REMEDIATION THROUGH MAP

Students who enter the programme are not homogenous in nature and some students need more support. The Intensive Remediation (IR) team, which consists of a multidisciplinary panel of professionals, helps both Edts and their students by observing classes and offering suggestions to manage behaviour and learning. The

endgame of IR is to reintegrate these students into the main literacy programme.

For the year 2014, the IR team started off with 25 cases. In the course of the year, 3 students were integrated into the main literacy programme. 22 cases are still under review and the students are being monitored periodically to see how they can be integrated back into the programme.

Table 7: IR Statistics 2014

Total number on IR	22
Total new cases	-
Cases reintegrated	3
Total review cases	7
Sit in observations completed	10
Video recording	2
EdT to monitor	3

STUDENT PROGRESS MONITORING: CURRICULUM BASED ASSESSMENTS (CBAS)

For progress monitoring purposes a total of 1595 students' progression from one band to the next was analysed.

These students were assigned the initial bands by MAP Admissions division. The Edts were given the banding for their students so that they can continue intervention with them using the newly developed band appropriate IMC, i.e. a more targeted intervention programme.

Whilst the psychologists took due care and diligence in banding the students, there was the element of historical data being used to determine bands. To explain further, students might have been in the programme receiving intervention for a few years however, their reports may have been dated a few years before. Owing to the above, Edts felt that the banding given was not reflective of the ability of their students whilst others felt that it was. Edts were then given an option to propose a band for their students.

ANALYSIS OF PROPOSED BAND AGAINST ORIGINAL BAND

After subtracting the number of withdrawn students a balance of 1560 students' bandings were analysed.

Original Banding Analysis	Total number	Percentage
Agreeable with the original band	717	45.96%
Proposed a lower band	620	7.76%
Proposed a higher band	121	39.74%
Did not propose any band	102	6.54%
TOTAL	1560	100.00%

45.96% of the students' bandings were accepted by the Edts. This is slightly less than half of the total number of students. The Edts who felt that the band suggested by Admissions division did not match their students' abilities were asked to propose a new band. About 47.5 % proposed a new band for their students and this works out to 741 students. A small proportion of Edts neither agreed nor proposed an alternative band for their students.

The proposed new bands were mostly in the higher banding category instead of a downgrade of band.

Analysis of post-CBA bandings compared to original banding	Total	Percentage
Post-CBA same as original band	359	31.94%
Post-CBA band is LOWER than orig band	130	11.57%
Post-CBA band is HIGHER than orig band	635	56.49%
TOTAL	1124	100.00%

Notwithstanding the above, a small group of Edts did not propose any band for their students. It can be assumed that since the IMC and bandings are a new initiative by

DAS, Edts were still trying to grasp it and hence did not propose any new bands for their students.

Analysis of post-CBA bandings compared to proposed banding	Total	Percentage
Post-CBA same as proposed band	536	47.10%
Post-CBA band is LOWER than proposed band	105	9.23%
Post-CBA band is HIGHER than proposed band	497	43.67%
TOTAL	1138	100.00%

The post-CBA results indicate that 31.94% of the cohort's banding is on par with the original banding – this works out to 359 students.

Which was more predictive – proposed or original banding?	Total
Post-CBA same as proposed band	536
Post-CBA same as original band	359

About 11.57% student scores became lower than the original banding, i.e. 130 students. Whereas 56.49% of the students showed an upward movement – i.e. they moved to a higher band than their original banding.

The post-CBA scorings of 536 students or 47.10% of the cohort is on par with the banding proposed by the Edts.

Only 105 (9.23%) students' banding is lower than the proposed band and about 497 students (43.67%) moved further up in the banding.

The data analysis suggests that the proposed band is more reflective of the students' current banding rather than the original band. The following could be some of the reasons why the trend is such:

- ◆ The original reports used by psychologists to determine the banding might not be the most up to date available documentary evidence of the ability of the students.
- ◆ The Edts are more familiar with their students and their abilities and hence their proposed band is more aligned to the CBAs.

RETAINING APPROPRIATE CLIENTS: A REVIEW OF STUDENT WITHDRAWAL AND ITS IMPACT ON THE PROGRAMME

Ideally we would like to see students leave our programme as graduates. Inevitably, some students leave us without graduating. In the interest of finding out how we can help these students and also to obtain feedback, calls are made to students' parents to find out the reason for their withdrawal. It is our intention to provide the best possible remediation for our students and give them support till they qualify for graduation from DAS. A committee was set up to contact parents to find out why they have left the programme.

In 2014, in a bid to better understand the reasons for withdrawals, a total of 52 calls were made and the following is the summary:

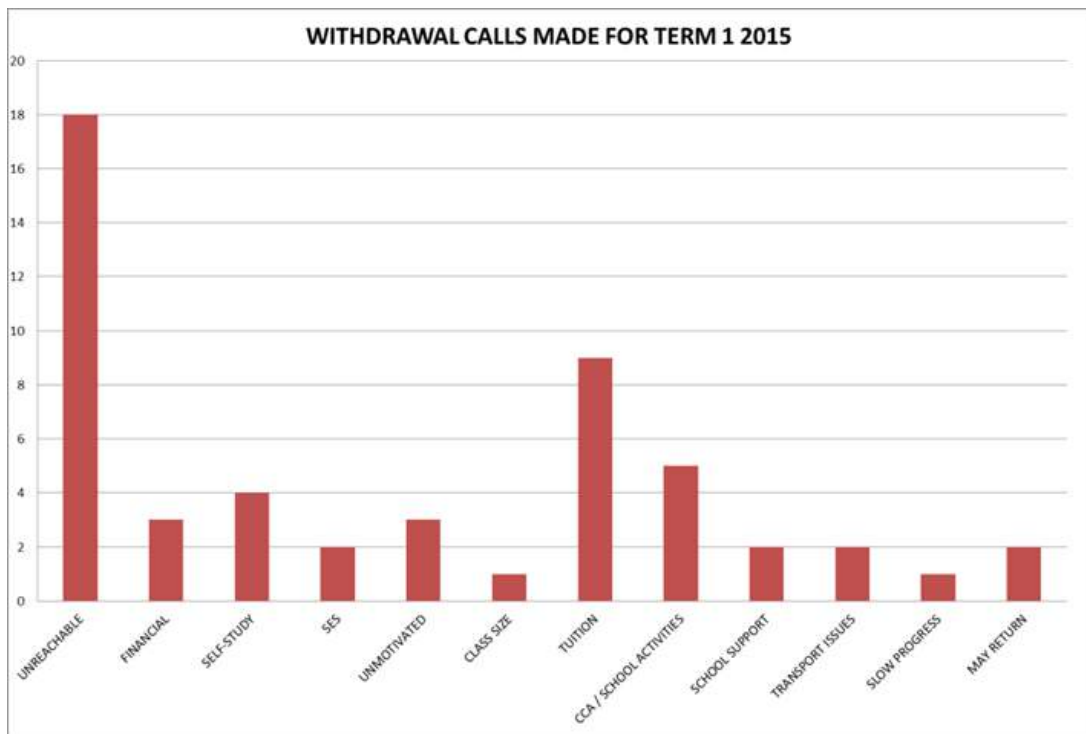


Figure 7: Student withdrawal analysis

Unfortunately, a significant number of parents were unreachable. 17% of the students' parents cited tuition classes as the reason for leaving. Moving forward, this needs to be further monitored – is there a prevalence of parents withdrawing their

children with a preference for private tuition? If so, a further investigation into their reasons will be necessary. And although withdrawals are unavoidable, MAP statistics reveal that the majority of students have stayed and therefore benefited from the programme.

MOE-aided DAS Literacy Programme (MAP): A preview of the Joint Project with Temasek Polytechnic, School of Humanities & Social Sciences School

Temasek Polytechnic Project Team

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In this year-long joint project, Temasek Polytechnic will assist DAS in evaluating the effectiveness of MAP. One issue with assessing the effectiveness of the intervention programme is that usually it is difficult to come up with a standard control group, where the performance on MAP is compared between a group of students who do not go through the intervention with another comparable group of students who underwent MAP intervention. However, because of ethical, operational and logistical constraints, it is difficult to carry out such a study with a standard control group.

Therefore, this project proposes an alternate study in which we categorise participants into different age groups and use each age group as an age-control for comparison with other groups. For instance, one group may start their intervention programme at 7 years of age, while another group may start their intervention programme at 8 years of age. The literacy proficiency of each group is measured at the start and end of the intervention period (1 year). By comparing the performance of the 7 years old group at the end of the intervention (they will be 8 years old at that point) to the performance of the 8 years old group before they start their intervention, some conclusions may be drawn about the effectiveness of the intervention. Should there be any difference in literacy performance, one can conclude that it is not due to maturation effects, but can be attributed to the intervention programme¹.

¹ MAP responds: We are also aware that there are cohort effects and groups may start at a different level from others. Hence, this study will also contain a within child comparison across the year, to monitor the progress individuals are making.

Currently, the literacy proficiency for the students undergoing the intervention is assessed by looking at five major areas of literacy skills covered in the curriculum: Reading, Spelling, Reading Fluency, Reading comprehension and Writing. For the purpose of the joint study, MAP's CBAs will be adopted, revised and expanded upon in order to ensure adequate and comparable measurement items across the study. A pilot study was therefore conducted to test the effectiveness of the grouping of and sequenced progression in the MAP word list. As the CBA word list is based on the scope and sequence of phonograms and taught concepts, the evaluation of the effectiveness of the MAP word list indirectly comments on the effectiveness of the CBA word list. This also produces alternative sets of tests, which can be used alongside the CBA word list.

The MAP word list is grouped based on theoretical rules and theories and is therefore referred to as theoretical banding. Even though the theoretical banding is well supported by theories, and had face validity, there are still uncertainties on the actual validity of the grouping. This pilot study aimed to provide empirical and theoretical support of the word groupings.

A total of 45 participants without dyslexia, were recruited through convenience sampling and consisted of 19 primary Ones, 19 primary Twos and 7 primary Threes (ranging from 7 to 10 years old).

Stimuli. Based on the MAP word list provided by the DAS team, 120 words were selected and grouped into 3 different levels of difficulty as proposed by MAP. Words were sorted into groups, which were further divided into 3 subcategories that is representative of the difficulty level of the words. However for convenience sake, instead of taking into account the subcategories, we combined all the subcategories into their main grouping to help sort the words.

In this case, words that fall under the Band A category consists of the easiest words, while words that fall under the Band B category were considered to be of moderate difficulty and Band C consists of the difficult words. These words were picked from the MAP word list that was provided, to get a total of 40 Band A words, 41 Band B words and 39 Band C words. Due to an error on our part, we were not able to get an equal number of words for each of the bands and as a result had an extra Band B word and one less Band C word.

The 120 words were then randomly split into 4 word lists, consisting of 30 words per list. Within each word list, there was an equal number of Band A, B and C words. The order of the words were randomised with the exception of the first three words, which were all from Band A, this is to slowly accustom the children to the spelling task and not scare them by having to spell a difficult word right from the start.

Percentage Match Between Theoretical and Empirical Bandings. In order to check the accuracy of the theoretical banding for the difficulty of words, the theoretical banding was used to compare with the empirical banding for the 120 words. Empirical banding in this case was being referred to as the classification of words based on the frequency that the words were spelled correctly across all the participants. For the empirical banding, the first 40 words that were constantly being spelled correctly were being classified into band A and the next 41 words in the list were being classified into band B and lastly the next 39 words that were constantly being misspelled were being classified into band C. After obtaining the empirical banding, the theoretical banding was being compared to empirical data to check if the words were being banded accurately.

If the words are theoretically Band A, B or C but was shown otherwise empirically, there is a mismatch between theoretical and empirical bandings. While if the words that are theoretically Band A, B or C and, those words also falls under the same banding empirically, there is a match between theoretical and empirical bandings. For words that do not match after the comparison were coded as "0" and for words that matched between the theoretical and empirical banding were coded as "1". After which, the scores were averaged and it was found that only 50.8% of the words matched the theoretical banding.

Relationship between theoretical banding and empirical banding. A chi-square test of independence was performed to examine the relation between the mismatch of the MAP theoretical banding and empirical banding. This is to see if the mismatch was due to measurement error or flaws in the theoretical banding. When comparing the difference between the empirical and theoretical banding, it was found that for 59 words there was a difference between the bands, there was a shift in 1 banding or even 2 bandings. We identified words that had a shift in 1 band as having a change from either band A to B, B to A, B to C and C to B. For words that had a shift in 2 bandings, it was either a change from band A to C or from C to A. As long as there was a change in the direction of band, it is either grouped into the "jump 1" or "jump 2" category. If there is a match between the empirical and theoretical banding, it is grouped into "no jump".

AMENDMENTS

Based on the results of our pilot study, we came to the conclusion that the theoretical banding provided by the DAS team was a suitable tool to use to determine the difficulty of words. The correlation for the word average scores and the theoretical banding was the highest as compared to other psycholinguistic variables used in the literature. This indicates that even though there was a low match between the empirical and theoretical banding, it might still be a better tool for us to use to

determine word difficulty. The theoretical banding was also developed with the local context in mind and is easily available for all the words being tested.

To ensure that the word stimuli used in our actual study is as accurate as possible. Thus, the words that were shown to jump across 2 bands (i.e. Band A → Band C, Band C → Band A) were removed. It is also evident that there was a significant difference between the difficulty level of the 3 bands, with Band C being the most difficult, followed by Band B and Band A. However, the word average for the Band C words was the lowest, showing a floor effect in our data. Thus, we decided to reduce the number of Band C words used in the word lists. As such, the word lists used in the actual task will have a total number of 18 words, with 8 words from Band A, 6 from Band B and 4 from Band C, instead of having an equal number of Band A, B and C words throughout. This would then reduce the likelihood of a floor effect from happening. We also created parallel forms, in the sense that the level of difficulty across the 5 word lists that we created for the Literacy Proficiency Assessment were similar and consistent.

DISCUSSION

The purpose of this project was to develop a literacy proficiency assessment tool to assess children's literacy skills and to evaluate the effectiveness of MAP intervention programme used by DAS. A main requirement of this assessment tool is to have it be able to be administered every 3 months to comprehensively evaluate the intervention programme. This is because current assessment tools used by the Dyslexia Association of Singapore (DAS) requires a 6 month interval before the assessment can be used again to assess the children (to avoid test-retest effect). Thus, the creation of parallel forms in our developed assessment tool allows the materials tested during each testing session to be different while being on the same level of difficulty. As such, this helps to overcome the test-retest effect and allows it to be tested on a more regular basis (3 months) as opposed to other assessment tools.

The new assessment tool developed is also quick and easy to administer. The results of this study found that participants completed the assessment in a range of approximately 20 minutes to 35 minutes. Essentially, the current assessment tool takes up to an average of 30 minutes to be administered and minimises any fatigue effect, as opposed to the current tools used by DAS that may take up to 3 to 4 hours to complete.

In addition, a protocol for the administration of the literacy proficiency assessment tool was also developed. Administration of current tools used by the DAS has not been standardised and ways of assessment varies across the different practitioners, thus affecting the reliability of the assessment scores. Therefore, a standardised

protocol has been developed for the assessment tool developed to ensure that every assessment is carried out in the same way and that the resulting individual differences in literacy scores are not due to extraneous factors (i.e. practitioner's varying methods of assessment).

Through this study, it has also been ascertained that the words provided by the MAP word list are valid and should be retained. Even though it was initially found that only half the words have a match between their theoretical banding and empirical banding, it was later found that the theoretical banding still had the highest correlation with the word average as compared to other psycholinguistic characteristics. As such, it has been proposed that if the theoretical banding and empirical banding are too different (2 jumps; A to C, or C to A), it will be removed from the final ELA word list used for future assessments. In addition, it has also been proposed that the ratio of Band A to Band B to Band C words be revised so that there is more Band A words than Band B words than Band C words (A>B>C). This is so as to minimise any floor effect.

Additional positive features of this assessment tool developed through this project is that it is based on words that local students use, unlike the current assessment tools that are based on overseas context. This will provide a more accurate representation of the student's literacy proficiency as they are tested on words that is used in the everyday context of the local population.

Generally, this assessment tool that was created can be a possible screening tool to identify students at risk of learning disability (specifically for dyslexia) in an easier, simpler and shorter way. Students who show signs of dyslexia can be easily identified and be provided with the necessary interventions depending on their areas of weaknesses that will be revealed through their performance in the various tasks in the assessment tool. However, since this tool does not take into account age, further considerations need to be made as not all older students failing at higher level words are necessarily at risk.

Finally, the findings in the test creation phase of the year long programme evaluation project is encouraging as it provides support that the theoretical progression of difficulty level of words on the CBAs is suitable for use in the local context. Therefore, the value of this study towards the continued refinement of the CBAs cannot be underestimated.

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