

Early Reading Intervention An Action Research Project

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Abstract: There is a small group of pupils who enter the primary education system without sufficient reading skills. Without intervention, these pupils' reading deficit will accumulate over the years. As reading is the key to academic success, in January 2006, a one-year reading intervention programme was designed to enhance these children's reading ability. 17 Primary 2 pupils, who were about 8 years old and 15 Primary 3 pupils, who were about 9 years old, were selected to undergo an intervention programme. Using Schonell Graded Word Reading Test, the reading ages of these pupils were determined before the commencement of the intervention programme. In order to be admitted into this programme, the pupils' reading ages must be below their chronological ages, unless their teachers strongly appeal for an exception to be made. The other determining factors were their school-based oral and written examination results and teachers' recommendations. The class sizes for the intervention programme are smaller compared to the mainstream. For Primary 2, the class size for the intervention programme is 17 compared to 30 for the mainstream. For Primary 3, there are 15 pupils who are participating in this programme, as compared to 40 per class for the mainstream. The selected pupils are taken out from their mainstream classrooms during English periods; 17 periods per week for Primary 2 and 13 periods per week for Primary 3. During these periods, the intervention programme focuses on decoding skills. This paper examines the effects of teaching phonics, building up pupils' phonological awareness and lexical store and repeated readings on the pupils' reading ages. The mid-year results of the intervention programme show that all pupils have benefited from this programme as all reading ages have increased. For Primary 2, 13 pupils registered a double-digit increase in their reading ages, while only 6 Primary 3 pupils were able to do so. The paper also shares other findings and the implications of these findings.

Keywords: reading intervention, weak readers, phonics, onsets and rimes, repeated reading.

Introduction

School Profile

Chongzheng Primary School is a neighbourhood school, situated at Tampines Street 21. It celebrated its 21st anniversary last year. As a neighbourhood school, its students come from the nearby residential public housing.

Presently, it enjoys an enrolment of 1900 pupils. There are about 330 pupils in the 11 Primary 2 classes and 342 pupils in the 9 Primary 3 classes. The strength of its teaching staff is 86.

The English Department is being assisted by two Learning Support Co-ordinators (LSC), running a Learning Support Programme (LSP). One LSC dedicates her time fully to the programme, while the other LSC dedicates only 10 periods per week to the LSP. The other periods are spent teaching the mainstream students. The LSP is aimed to assist P1 and P2 pupils who are very weak in reading. In February each year, all Primary 1 pupils must undergo a test called Singapore Word Reading Test (SWRT). The very weak readers, who are categorized under Levels 0 and 1, are shortlisted to undergo the Learning Support Programme.

On average, about 30 pupils are admitted into this programme each year. The pupils are discharged from the LSP if they meet 2 criteria – reading ages are above their chronological ages and they score 50% or more for semestral examinations, school-based examinations, which are held in May and November. The LSP is not offered beyond Primary 2.

Area of Concern

Reading is the key to academic success. Hence, the introduction of LSP to enhance the reading ability of very weak readers. However, the reality is, there are weak readers in Primary 1 and 2 but they are not in the LSP. Their needs and reading deficit are not being addressed as Primary 1 and Primary 2 teachers are not providing the necessary literacy support to enhance their reading ages. The teachers are not equipped with the necessary skills to enhance our pupils' decoding skills. Teachers are not confident in teaching phonics as they have not been trained in that area. Even if teachers have the skills, the teachers are not applying the skills as not everyone in the class needs phonics instruction. Teachers could practise differentiated teaching then. However, they are not equipped to do so and this is aggravated by their lack of confidence.

Hence, classroom teaching is pitched for teaching average students, not weak readers. Then, there is an issue of teaching other components in the English syllabus. Reading is not the only components. The situation is aggravated as reading is tested only twice per year, during the semestral examinations.

As the LSP is offered at Primary 1 and 2 levels only, Primary 3 results and teachers' feedback indicate that there are few pupils who need continued support when they enter Primary 3. These are the pupils who failed to be discharged from the LSP at the end of Primary 2 and some who have been discharged but due to no or lack of literacy support, their reading deficit starts to accumulate again. Due to this, they would be struggling in Primary 3 and Primary 4. When they reach Primary 5, they would be emplaced in a stream called EM3, a stream for academically weak pupils where they study subjects such as Foundation English (instead of English Language) and Foundation Math (instead of Math).

Profile of weak readers

Most of the weak readers do not speak English at home. Neither do they use English in their social lives when they are interacting with their friends of the same race. They speak English only when they have to communicate with teachers or friends from other races. However, during these occasions, they use Singlish, a local term for improper English. Neither do they read English books. Generally, they come from lower income families, where the parents are not proficient in English due to their low academic achievements. All these are consistent with the general profile of weak readers mentioned by Lonigan (2003) and Snow (1998).

Enhancing the reading ability of weak readers provides the key to their academic success. Therefore, in order to assist them to experience success, a reading intervention programme was introduced in January 2006.

Literature Review

In 'Principles of Best Practice: Finding the Common Ground', Mazzone & Gambrell (2003) highlight that 'best practices involve a "custom fit" – not a simple "one size fits all" – approach.' This is more so in our effort to assist weak readers. Most of our teachers conform to the standard syllabus provided by the school, failing to cater the needs of the weak readers.

The standard syllabus certainly does not address the literacy needs of weak readers as it is designed for pupils who have no reading deficit. This is further aggravated by the fact that most teachers are not equipped to handle differentiated teaching. Hence, the deficit of the weaker readers is not being addressed in the mainstream classrooms.

If the reading deficit of the weak readers is not addressed at the mainstream level, then a special programme needs to be designed for this group of pupils. Customizing the needs of weak readers is a better option in enhancing their reading ability. Such customized programme should incorporate explicit teaching of decoding skills. A study by Shippen, Houchins, Steventon & Sartor (2005) highlights the effectiveness of highly structured, explicit, teacher-directed instruction for weak readers. These highly structured instructions could include an explicit instruction on phonics and onsets and rimes. A study by Gunn, et, al. (2000) and other numerous studies have consistently shown the benefits of phonics instruction to weak readers. A study by Levy and Lysynchuk (1997) shows that both explicit teaching of phonics and onsets and rimes are reliable strategies in enhancing pupils' retention, which would have a positive impact on their reading ability.

However, in order to ensure the efficacy of the explicit instruction of phonics, weak readers must be provided with the opportunities to practise the skills through reading. August and Hakuta (1997) find that the phonological awareness of weak readers could be sharpened if they are exposed to reading and opportunities to converse about the text that they read. If this is not practised, the skills learnt will be forgotten. This could happen as the knowledge in the short-term memory is not being transferred to long-term memory. This process is further supported by Savage (1989), where it is reiterated that students have to use the "new words that they encounter so they can eventually 'own' them as part of their speaking, reading and writing." Therefore, hearing a teacher reading a book is vital but that is not sufficient. Teachers must provide ample opportunities for weak readers to speak the new words that they just learnt to read, read a text where that words appear frequently and write using the words.

The explicit instruction on phonics is supported by onsets and rimes. This strategy enables pupils to predict the pronunciation of words which they have not learnt based on their knowledge of words similar in spelling patterns (Goswami, 1991). This phonological prediction depends on the orthographic analogies. The more analogies are found in the spelling patterns, the easier the prediction would be. The argument for onsets and rimes is compelling if one agrees that there are 38 common rime patterns which enable a reader to decode 654 one-syllable words and these rimes are also useful to partially decode words that are longer, more difficult and multisyllabic (Fry, 1999).

After learning decoding techniques through explicit phonics instruction and onsets and rimes, pupils must be exposed to instructions that will enhance their fluency. A commonly used strategy to achieve this is through repeated reading (Gunn, et, al., 2000). Samuels (1999) defines repeated reading as a strategy for building fluency in which a student rereads a passage until meeting a criterion level. This strategy supports the research findings by August and Hakuta (1997) and Savage (1989). It provides a platform for weak readers to apply the decoding skills and through repeated reading they will 'own' the words. As exposure to the words is being repeated at a frequent basis, the word recognition will be transferred from short-term to long term memory. The other platform to enhance pupils' fluency is paired reading. Using constructivist approach, Meisinger, et, al. (2004) find that partner reading facilitates the development of fluent reading. This can be achieved as the amount of time students spends on reading connected text is increased.

In 'A Comparative Study of Small Group Fluency Instruction' (2005), Kuhn discovers that repeated reading is effective in enhancing pupils' automaticity. However, in the same study, Kuhn finds that pupils' word recognition was enhanced at the expense of comprehension. This is so as classroom teachers hold an unsubstantiated assumption that once readers achieved a given level of fluency, they are able to automatically shift their attention to comprehension of text. However, this is not an area that concern this action research project as the main focus of this project is to enhance the reading ages of identified weak readers.

Research Study

Based on the literature review, the school embarks on a reading intervention programme. As the mainstream teachers do not have the luxury of time to carry out explicit instructions to enhance the reading ability of their weak readers, a customized curriculum is developed to cater the needs of the weak readers. The objective of the reading intervention programme is to enhance the reading ages of participants so that the gap between their reading ages and chronological ages could be narrowed.

Selection of Pupils

An exercise to select a small group of Primary 2 and Primary 3 pupils to undergo the reading intervention programme was done in January. The first phase of identifying suitable pupils was through a referral system. All P2 and P3 English Language teachers were asked to refer weak readers who were not in the Learning Support Programme (LSP), a programme initiated by the Ministry of Education. Pupils in the LSP are excluded as they are already receiving reading intervention treatment on a daily basis. Teachers referred their pupils based on pupils' reading ability reflected during reading activities in class, pupils' performances during 2005's oral examinations and they must be in the lowest percentile for school-based end of year English Language examinations.

For the second phase of selection, the reading ages of pupils were determined. This was done by using Schonell Graded Word Reading Test. Pupils were selected to be in this programme only if their reading ages were below their chronological ages, unless their teachers strongly appealed for an exception to be made. At the end of this phase, 17 Primary 2 pupils and 15 Primary 3 pupils were selected to undergo a one year intervention programme.

Class Size

Herbert & Taylor (2000) emphasise the effectiveness of small class size for an intervention programme. In their study, it was found that '... intervention in small-group formats has been shown to help at-risk monolingual English readers ...'. This is parallel with the profile of the school's weak readers. The usage of mother tongue languages is very high due to their low socio-economic status (SES). Generally, they do not use English language at home and rich-literacy resources are not available at home, which is consistent with their parents' educational background. The infrequent use of English language is also occurs at school.

Number of Intervention Periods Per Week

The weak readers undergo the intervention reading programme during curriculum time. When the mainstream pupils are having their daily English lessons, the selected weak readers are taken away to undergo the reading intervention programme. They are taken out from their

classes during English periods; 17 and 13 periods per week for Primary 2 and Primary 3 respectively.

The Reading Intervention Programme

The absence of early reading experiences causes reading deficit. In order to counteract this, the reading intervention programme revolves around literacy rich activities and environment. The strategies adopted for the intervention programme are based on a combination of strategies highlighted in the literature review.

Phonics Instruction

Pupils are exposed only to the basic phonics instruction such as the phonemes of short and long vowels and consonants. Pupils are exposed to the basic phonics only. The 15 Primary 3 pupils had been exposed to phonics instruction when they were in the LSP in 2005. On the other hand, the 17 Primary 2 pupils had been exposed to a more limited phonics instruction when they were in Primary 1. It is also noticed that basic phonics instruction needs to be incorporated as this group of pupils have low retention of the decoding skills that had been taught to them earlier. Besides the structured phonics instruction, pupils are also exposed to ad hoc phonics instruction. As and when a pupil is having difficulty in pronouncing a word, the teacher would scaffold the pupil through phonics instruction, though the focus of the lesson might not be on phonics.

Onsets and Rimes

The other essential component of this intervention programme is onsets and rimes. This aspect of instruction focuses on similarity of word beginnings (Example: br, bl, cl and ch) and similarity of word endings (Example: _at, _it and _en). The awareness of rhymes is an important skill that assists pupils in their subsequent reading experiences. When the teacher teaches pupils the pronunciation of word 'pen', pupils are also exposed to words such as ten, den and hen. After emphasizing the ending sound of the first word, by analogy, pupils are scaffolded to pronounce the other words. This isolated teaching of analogy is followed by providing opportunities for pupils to apply this phonological awareness to actual reading. Books focusing on the targeted onsets and rimes are used to achieve this. The other platform used to showcase pupils' skill in using onset and rimes is Readers' Theatre. Pupils are exposed to scripts that embody the concept of onsets and rimes. The highlight of this skill is when they were selected to perform Readers' Theatre during a Ministerial visit in May. In order to inject some elements of fun, the onsets and rimes instruction is sometimes concluded by having a Bingo game. Each pupil is given a bingo card, consisting of a few words. The teacher will pick and read a card. If the word reads by the teacher rhymes with one of the words reflected in a pupil's bingo card, they are to cover it. The winner is the one who manages to cover four words, either straight or diagonally.

Repeated Reading

After the explicit phonics instruction and onsets and rimes, pupils need to practise what they have learnt. This opportunity is provided through repeated reading sessions. Pupils need to constantly apply the knowledge that they have gained. What is being taught in phonics and onsets and rimes must not be isolated from actual reading process. In order to provide the availability of wide range of resources for the reading activities, the school prescribes an online resource and purchase graded books and books of different genres. These resources contain high frequency words, pitched at the right level of difficulty for this group of pupils.

The first phase of repeated reading process starts when the teacher models the reading of a book. This is done after the targeted phonics and onsets and rimes instructions have completed. For the second phase, echo reading is conducted, where pupils echo after the teacher reads a sentence. The echo reading provides a non-threatening reading process, where pupils read together, hence no one would notice their mistakes. After the echo reading, choral reading takes its place. The teacher does not provide scaffolding at this stage. All pupils read together, while the teacher monitors and observes pupils' performances. Thereafter, pupils graduate to paired reading, where one reader is of higher reading age than the other. While paired reading is in process, the weakest pupils join the teacher for reading circle. These pupils are seated in a circle, together with the teacher. Each of them takes turn to read. The teacher and other pupils will provide the necessary assistance if a pupil is unable to pronounce any words. During this process, the teacher takes a back seat role, unless no one else could render the assistance.

For some pupils who need more practices, the reading process continues at home. As the online resources are photocopiable, they could bring home the reading booklets and colour their personalized booklets. At each stage of the repeated reading process, the teacher or pupils would give immediate corrective feedback to a reader.

Blending

The last stage of the reading intervention programme focuses on the blending activities. The blending activities are conducted through group work or games. The teacher might place a stack of cards. Pupils are required to blend as many words as possible from this stack of cards. In order to excite the pupils, a competition among groups or pairs is held. Another blending game that is conducted is by using a clock face. Instead of numbers, the border of the clock face is pasted with segments of words such as 'bl', 'cl', 'ock', 'd', etc. Pupils are to move the clock's two hands. When the two hands are separately pointing at 'bl' and 'ock', they have successfully formed a word and they are to write it on a card. At the end of the game, the teacher checks the accuracy of the words formed by the pupils. This activity is in line with some of the activities recommended by Rasinski (1999).

Results

The effectiveness of the reading intervention programme is measured by using the reading ages of the pupils. The objective of the programme is to increase the reading ages of the pupils so that the gap between their reading ages and their chronological ages could be narrowed. Before the intervention programme, most of their reading ages were below the chronological ages, with the exception of those who were appealed by their teachers to be included in the intervention programme even though their reading ages were above their chronological ages. The target is to increase their reading ages to their chronological ages, if not higher than their chronological ages. Therefore, the pupils' reading ages taken in the beginning of the year are used as the baseline. In May, pupils' reading ages were taken again, using the same instrument. Their final reading ages will be taken in early October, after the second semestral examinations. This will mark the end of a year long intervention programme. The table below reflects the reading ages of the pupils:

Table 1: *Reading Ages of Primary 2 Pupils*

No	Pupil' s Initial	Baseline (January)		Mid Year Post-Test (May)	
		C.Age	R. Age	C.Age	R.Age
1	CPX	7:5	6:9	7:10	8:2

2	TBY	7:3	6:6	7:8	7:6
3	TWH	8:0	7:3	8:5	8:5
4	MAA	7:5	7:1	7:10	8:7
5	NS	7:9	7:1	8:2	7:8
6	RS	7:7	8:0	8:0	8:7
7	T	7:5	6:8	7:10	7:5
8	RF	7:1	7:1	7:6	7:8
9	MN	7:7	7:1	8:0	8:5
10	N	7:2	8:7	7:7	11:0
11	FNF	7:5	7:8	7:10	8:4
12	JK	8:0	6:7	8:5	7:8
13	YK	7:6	6:9	7:11	8:7
14	KWC	7:4	7:0	7:9	7:9
15	AM	7:9	7:2	8:2	8:3
16	WYS	7:6	7:3	7:11	8:4
17	AK	7:2	6:3	7:7	7:6

C. Age – Chronological Age

R. Age – Reading Age

Based on Table 1, all pupils registered an increase in their reading ages. What is significant is that the increase in their reading ages was more than the increase in their chronological ages. This means the intervention programme has managed to close the deficit of their reading ages. From January to May, their chronological ages increased by 5 months. However, the reading ages of all pupils increased by more than 5 months, the lowest increase was 7 months while the highest increase was 29 months. The mid-year post test results also indicate that 11 pupils registered a double digit increase for their reading ages, ranging from 12 months to 29 months.

Table 2: *Reading Ages of Primary 3 Pupils*

No	Pupil's Initial	Baseline (January)		Mid Year Post-Test (May)	
		C.Age	R. Age	C.Age	R. Age
1	JT	8:0	7:6	8:5	8:0
2	MH	8:5	5:7	8:10	6:3
3	MS	8:3	6:6	8:8	7:7
4	TWS	8:2	7:9	8:7	8:6
5	NS	8:0	7:10	8:5	8:3
6	TYF	8:0	7:4	8:5	8:5

7	YM	8:9	8:0	9:2	8:8
8	SK	8:4	7:7	8:9	8:4
9	MZ	8:1	5:6	8:6	6:9
10	OJH	8:5	5:2	8:10	5:5
11	LJM	8:3	6:1	8:8	6:4
12	SCH	8:4	6:7	8:9	7:3
13	WAW	8:10	6:0	9:3	7:0
14	MN	8:7	7:6	9:0	10:7
15	NB	8:0	7:10	8:5	9:3

C. Age – Chronological Age

R. Age – Reading Age

All Primary 3 pupils registered an increase to their reading ages, ranging from 3 months to 37 months. The increase was less impressive as compared to Primary 2's. While their chronological ages increased by 5 months, 2 of them registered an increase of only 3 months to their reading ages. This means the gap between their reading ages and chronological ages widen. Only 6 of them registered a double digit increase to their reading ages, compared to 11 for Primary 2.

Besides the reading ages, the marks that the pupils obtained from semestral examinations should also be scrutinized to measure the effectiveness of the intervention programme. The component of that semestral examinations that is directly linked to reading is oral component. For the first semestral examinations, which was conducted in May, 76.5% of Primary 2 pupils passed the oral component, the same paper that was taken by the mainstream pupils. As for the Primary 3 cohort, only 66.7% passed the oral component. The higher percentage registered by the Primary 2 pupils is consistent with the data on their reading ages.

The other components of the semestral examinations are writing, grammar, vocabulary and comprehension. As the reading ability is associated with the general language ability of pupils, the study of data for these components reveals the same conclusion. Primary 2 pupils registered a better performance for the other components of the semestral examinations. 76.5% of them passed the semestral examinations for English Language. None of the Primary 3 participants passed their semestral examinations.

Discussion

The mid-year post test results show that the reading intervention programme has successfully increased the reading ages of all participants. However, it is glaring that Primary 2 results are better than Primary 3's. The improvement registered by Primary 2 pupils illustrates that the intervention programme benefited them more than Primary 3 pupils. Hence, we can conclude that the earlier the intervention, the better would be the results.

The results also indicate that early intervention is crucial if the reading deficit is to be addressed. All Primary 2 pupils managed to narrow the gap between their reading ages and their chronological ages. However, 3 pupils of Primary 3 failed to narrow this gap. For 2 of them, the gap was widen while for 1 of them, the gap remained the same.

The data on oral examination and other components of the semestral examinations reveal the same trend. The intervention has definitely benefited Primary 2 pupils more than Primary 3's.

As pupils' reading ability increases, their general language ability also improves. This is reflected by the performances of primary 2 pupils. Their much better performance for reading is translated to a better performance for semestral examinations, which comprise of other components of English Language.

A more detailed analysis will be done after the completion of post test results, which will be conducted in October.

Conclusion

As reading is the key to academic success, our weak readers need to be assisted at the earliest stage possible. The chances of reducing the reading deficit are higher if we start the intervention programme early. An early intervention programme is crucial so that the weak readers could cope with the academic demand.

The other crucial factor that determines the success of an intervention programme is a review process. Such process need not necessarily be conducted at the end of the programme. All staff who are involved in the reading intervention programme should frequently review the implementation of the intervention programme.

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