# Repeated Reading Improves Word Accuracy and Prose Reading in Students with Auditory Processing Difficulties. 


#### Abstract

Many students with reading difficulties continue into their adolescence with these difficulties. Functional auditory processing difficulties are linked to poor word accuracy and poor prose comprehension. Auditory processing is one of the strongest predictor in the acquisition of reading skills and reading comprehension. Students with a delay in Auditory Processing development will have difficulty acquiring letter-sound links (phonemic awareness) and basic phonological knowledge. They will struggle with recognising letter clusters, matching text words with stored letter clusters, converting letter clusters to sounds, blends and segmenting words into functional units. On the sentences level the length of phases or sentences a reader can hold and process will be limited.


Research into Repeated Reading indicates improvements in both word accuracy and prose comprehension. Repeated Reading assists students with functional auditory processing difficulties as it allows the student to read connected text rapidly, smoothly, effortlessly, and automatically with little conscious attention to the mechanics of reading, such as decoding.

Four year 5 students with auditory processing difficulties were withdrawn for eight individual lessons and one group lesson lasting on average 30 minutes. A control group of four year 5 students with similar problems were chosen to compare with. Treatment sessions happened during the literacy blocks in the mornings.

In the eighth lesson an unseen text was read aloud twice before student could ask for support. The text was then read again twice. Students were given feedback regarding improvement in reading rates and errors were discussed. Students were encouraged to reflect on the positive changes noted. A group session gave students the possibility to share their insights and to encourage each other.

The results indicate that on average prose comprehension improved significantly in both the treatment group and the control group. The treatment group showed better improvements in word accuracy. Reading rates decreased for both groups.

Surprise findings were that, according to anecdotal evidence, all students in the treatment group learnt to re-read when faced with reading difficulties, and that spelling and writing improved.

## HYPOTHESIS

Repeated Reading improves word reading accuracy and prose comprehension in students with functional auditory processing difficulties.

## INTRODUCTION

Reading difficulties are often apparent in the early years of primary school and some students do continue to display literacy difficulties into their adulthood. According to Barkley, 1995, 1997; Hinshaw, 1994; Rowe \& Rowe, 2000) 9\% of children and adolescents have both literacy and behaviour problems.
Figures from Melbourne's Royal Children's Hospital indicate that a majority of students referred to them for assessment of behaviour problems and underachievement in literacy have been found to have functional difficulties with processing auditory information despite normal auditory acuity. (Rowe, Pollard \& Rowe, 2005) According to them "auditory processing (AP) is defined as the ability to hold, sequence and process accurately what is heard. This ability to process auditory information is typically indicated by the number of pieces of information that are recalled accurately (digit span) and the length and complexity of a sentence (sentence length)" (Rowe, Pollard \& Rowe, 2005, p. 2). Children with AP difficulties are disadvantaged in acquiring basic literacy skills (Rowe, Pollard \& Rowe, 2003).

The connection between reading difficulties and auditory processing is well documented. Weiler, Holmes, Bernstein, Bellinger \& Waber (2002) when examining the processing capabilities of children diagnosed with Reading Difficulties found that "children with RD made more errors than children without decoding problems on the auditory processing tasks."
These findings are supported by Bell, McCallum \& Cox (2003 p. 513) who found that "auditory rather than visual abilities are more highly implicated in reading difficulties." According to them auditory processing is one of the strongest predictor in the acquisition of reading skills and reading comprehension.
Tractenberg's (2002) research results "support the possibility that deficits in memory and phonological awareness co-occur in reading disability and that reading disability may even involve a deficit in immediate memory" (p. 421).

Functional Auditory Processing (AP) Difficulties also called Short Term Auditory Memory (STAM) Difficulties impact twofold on the information processing while reading. These difficulties impact on the word level and on the sentence/conceptual level. (Munro, 2004).
According to Rowe, Pollard \& Rowe (2005) competent readers usually have a digit span of 5 well established. They have a large repertoire of letter clusters and some feeling for segmenting words into functional units. (Munro 2004, lecture notes). Students with a delay in AP/STAM development will have difficulty acquiring letter-sound links (phonemic awareness) and basic phonological knowledge. (Bradley \& Bryant, 1983: Dodd et al., 1995; Munro, 1997,1998,1999,2000). A student with a difficulty with AP/STAM will struggle with recognising letter clusters, matching text words with stored letter clusters, converting letter clusters to sounds, blends and segmenting words into functional units.
On the sentence level AP/STAM difficulties mean that the length of phases or sentences a reader can hold and process will be limited. There is a clear relationship between the maximum digit and sentence scores: sentence length is about three times the digit score
(Rowe, Pollard \& Rowe, 2005) This means that students with a digit score of 4 will only be able to process sentences of up to 12 words, unless they have learnt to pause and consolidate while reading longer sentences.
Characteristically students with AP/STAM difficulties find it easier to recall nonverbal than verbal information and retrieve information from long-term memory more slowly. They use rehearsal, elaboration and chunking less efficiently. They are less likely to organise text data in working memory. (Munro, 2004 lecture notes)
A student with reading difficulties due to AP/STAM difficulties will often struggle with individual words in a sentence. This means that the length of phase or sentence the reader can hold and process will be very short They have to put effort into holding and blending the phonic sequence of each word and thus have a reduced capacity to retain and process the words they have deciphered.
A logical intervention for struggling readers with AP/STAM difficulties is the Repeated Reading Strategy as research indicates that it improves word accuracy, prose comprehension and reading rate (Meyer, S. 1999).
Herman (1985), Young, Bowers, and MacKinnon (1996), Flynn, Rahlbar, and Deering (1998) all reported improvement in word recognition accuracy using Repeated Reading in a range of readers, including poor or disabled readers. Repeated Reading assist students with AP/ STAM difficulties as it allows the student to read "connected text rapidly, smoothly, effortlessly, and automatically with little conscious attention to the mechanics of reading, such as decoding." (Meyer, M.S. 1999, p. 284) Repeated Reading is based on the information processing model which suggests that fluent readers are these who decode text automatically, leaving attention free for comprehension" (Dahl, 94; Samuels 79).

Research demonstrates that there is a strong correlation between reading fluency and comprehension (Tan and Nicholson [1997]; Downhower [1987]; Shinn et al. [1992]) Young, Bowers, and MacKinnon (1996) hypothesized that repeated reading practices "allowed the poor reader to become more efficient readers, which in turn, enabled them to shift their processing resources to comprehension." (p.294)
Herman (1985); Rashotte and Torgesen (1985); Stoddard, et al. (1993); Faulkner and Levy (1994); Flynn, Rahbar, and Deering (1998) found that Repeated Reading improved reading speed (as measured by number of words read per minute) in older elementary students with poor reading skills.
This Action Research aims to research the impact of Repeated Reading on word accuracy and prose comprehension in older primary students with reading and AP/STAM difficulties. A minor aspect of this Action Research Project is the impact of Repeated Reading on reading rate.
Eight grade 5 students with AP/STAM difficulties were chosen for this project. All student had participated over a number of years in reading interventions but showed little improvement and were identified by their current teachers as the most needy readers.

## Prediction

Teaching Repeated Reading will improve word accuracy and prose comprehension in students with reading difficulties and AP/STAM difficulties.

## METHOD

## DESIGN:

The study uses a case study OXO design in which the change in word reading accuracy and prose comprehension following repeated reading over a period of 9 sessions is monitored for 4 grade 5 students. All students presented with reading difficulties as well as short term auditory memory difficulties.

A group of 4 grade 5 students with similar problems not participating in this experiment was used as the control group to compare against.

## SETTING:

The school is a large primary school with 580 students in the western suburbs of Melbourne.

## PARTICIPANTS:

All students (including the students in the control group) are students with a history of reading difficulties who despite many years of interventions have made unsatisfactory progress.

## Students in the test group:

## Student E:

Student $E$ is an 11 year old girl, the youngest of three siblings.
She was identified as struggling by her prep teacher and at the end of her prep year testing revealed poor phonological awareness skills as well as poor visual perception skills. Interventions in these areas contributed to skill improvement and retesting in grade two revealed age appropriate skills in both areas. Her reading skills, however, were not age appropriate and she started Corrective Reading in grade 3 and continued with this intervention until the end of grade 4. Again she made good progress initially but lately her progress has stagnated.

Her grade 5 teacher described her as having difficulties in reading, writing and spelling and seeking teacher's attention by claiming to be sick or hurt. She lacks confidence in most areas and is a likely candidate as a victim of bullying.

## Student A:

Student A is a 10 year old boy, the youngest of two brothers with a family history of reading difficulties.

Already in prep he was identified as being at risk and testing revealed poor phonological awareness problems and visual perception difficulties. He received phonological awareness training and visual perception training in grade 1 and showed improvement in these areas. In grade 2 he participated in modeled reading and since grade 3 has participated in corrective reading. Initially he made good progress but has come to a 'standstill'. He is the
slowest reader in the intervention group, avoids reading whenever possible, never reads at home and even at school is very reluctant to read. He is identified by his class teacher as a time waster and slow worker in language related areas but has good mathematical skills. He is well liked by his peers.

## Student R:

Student R is turning 11 in June. She is very small for her age. She is the second daughter in a family with a Maltese background. Her younger brother in grade 2 has better word decoding skills than she has and her older sister in secondary school is an A student. Her mother who works with her everyday seems very frustrated with the lack of progress. Her father has reported similar learning difficulties as his daughter and as a consequence hated school but became a very successful mechanic with his own business. He has just recently started full time studies.

Student R started at her current school in grade 2. At the previous school she had been placed on the reading recovery waiting list and was receiving speech therapy for articulation difficulties. Her current school at that stage did not have a reading recovery program and she joined a phonological awareness program to improve her segmenting and blending difficulties. She participated in a one on one modeled reading intervention and continued speech therapy with her mother being the therapy agent. She participated in grade 3 and 4 in a corrective reading program.

A full language assessment in 2003 placed her in the average ability range and involvement of the speech therapy services ceased.

In 2004 an IQ assessment placed her in the average range (25th percentile). Verbal comprehension: average (37th percentile), working memory low average (18th percentile), processing speed: low average (21st percentile). Weaknesses in digit span (9th percentile) and coding (9th percentile) were pointed out. These weaknesses can affect sequencing skills, concentration, learning ability, visual perception, visual motor coordination and attention.

In 2004 a full auditory processing evaluation revealed an auditory processing deficit.
Student R's class teacher has expressed concerns regarding reading development, communication skills, class participation, listening difficulties and auditory memory sequencing ability.

Student $R$ is highly motivated and is not easily discouraged. She has daily reading sessions with her mother and claims that she can not get to sleep if she does not read beforehand.

## Student J:

Student $J$ is also turning 11 in June. He is the eldest of three children and his sister in grade 3 is also displaying reading difficulties.

Student J initially seemed to cope with work in prep but by grade 1 he was placed on a phonological awareness training program. Reading interventions were started in grade 2 and initially he made good progress. Corrective reading started in grade 3 and continued until the end of 2004 with limited success.

In 2003 a Speech Pathology assessment placed his receptive oral language and articulation just below average and his expressive language skills in the moderately below average range. CEO speech pathology programs were administered by his mother under the guidance of the CEO Speech pathologist. Retesting in 2004 revealed language processing skills and phonological awareness skills as being just below average. (Segmenting and blending skills were not age appropriate.)

An IQ assessment in 2003 placed his overall performance in the 18th percentile (low average). His verbal performance was average (25th percentile) and his non-verbal performance was low average (13th percentile). Weaknesses were noted in the subtests digit span (9th percentile) and picture arrangement (1st percentile-).

A full audiology assessment in 2003 diagnosed an auditory processing deficit.

## Students in the control group:

## Student N :

Ex-reading recovery student, who started in his current school in grade 3.
Corrective reading in grade 3 and 4

## Student G, Student L and Student W:

Phonological Awareness Difficulties diagnosed in Prep, Phonological Awareness training started in grade 1.
Reading Interventions in Grade 2 (Modeled Reading) and Corrective Reading in grade 3 and 4.

## MATERIALS

## Tests

Neale Analysis of Reading Ability was used as pre- (Form 1) and as post- (Form 2) test for treatment group and control group. Word accuracy, prose reading and reading rate were recorded.
The Wepman/ Brigance Auditory Sequential Memory Tests were administered prior to reading sessions to determine that the students in the treatment and control group were suitable for this action research project.
The intervention texts were eight chapters of a novel which none of the students had seen previously. Students were chosen so that the text they had to read fell within the range of $5-10 \%$ error rate as recommended in the 'general principles of fluency training for students with reading disabilities' by Meyer (Meyer, S. 1999, p 298.)
Running records were taken in each session and the reading rate was recorded for each repeated reading.

## PROCEDURE

A pilot study was performed on 2 grade 5 student who had been diagnosed by their special education teacher as having reading difficulties and STAM difficulties.
A prose text was chosen and running records taken for each repeated reading. Students showed improvements in word accuracy and comprehension and did not seem too stressed given that they received no support when struggling to decode words in the first two readings. Between the second and third reading students were given the choice to ask for assistance regarding difficult words (word accuracy and meaning). Reading rate was recorded and results fed back to students. This procedure was then discussed with the Reading Recovery Teacher, the CLaSS co-ordinator and the Special Education Teacher. All agreed that this would warrant a larger study.

Prior to the commencement of the main study the Neale Analysis of Reading Ability Revised (Form A) and the Wepman/Brigance Auditory Sequential Memory Test were administered to 14 students identified by their teachers as struggling readers. All 8 students chosen for the treatment group and the control group were displaying STAM difficulties and word accuracy and prose reading levels below age appropriate levels. Class teachers administered the benchmark tests and according to these a text was chosen on level 27

Implementation of the study consisted of eight teaching sessions that were taught to the students individually and one session where all students were taught together.

Teaching sessions were conducted in a withdrawal room, 3 times per week. The aim was to withdraw students during class reading sessions so that students in both groups would have the same amount of reading time.

Between the first 4 sessions and the next sessions was a break of three weeks due to term holidays.

The sessions lasted an average of 30 minutes.
In the first session students were told the structure of the lessons. It was clearly stated that the strategy they would learn would help them whenever required to read on their own. During the fist two readings they would receive no support from the teacher. (This is contrary to the Corrective Reading Sessions which they were used to, where students receive support when needed.) Between the second and third reading they could ask for assistance with decoding and meaning of words. The fourth reading would be their last reading. All repeated readings of the text would be timed. They were assured that the presence of the stop watch should not put them under any pressure to read fast.

The teacher took running records for the purpose of feedback. This was provided to students in regards to errors and reading rate. Errors were examined in regards to meaning retained or not retained. According to Meyer in the 'general principles of fluency training for students with reading disabilities' (Meyer, S. [1999], p 298.) incentives for reading practise as well as concrete measures of progress should be provided.

Discussions followed after the fourth reading in regards to what students noted about their own reading (word accuracy, comprehension, reading rate) and how this insight could support them with their general reading requirements. The aim was to encourage students to use the repeated reading strategy in their daily lives.

Each following session began with a discussion in regards to what we know about the impact of repeated reading and the observations and changes they had made when reading outside these sessions.

Students then would be asked to summarize the previous chapter and to speculate about the content of the new chapter before beginning to read. Procedure was as above.

Each session, after conclusion of the fourth reading of the text, students received feedback and then discussed and evaluated their reading and how the strategy helped them.
After eight sessions all students in the treatment group came together for a discussion session.

In between sessions anecdotal evidence was collected from class teachers and parents.
Post testing followed using the Neale Analysis of Reading Revised (Form 2) and results of their reading was fed back to students, their parents and teachers.

## RESULTS

Students' performance is described in 4 sections:

1. Digit Span (Wepman) and Sentence Length (Brigance)
2. Word Accuracy
3. Prose Comprehension
4. Reading Rate

Digit Span and Sentence Length

| Students | Digit Span | Sentence Length |  |
| :--- | :--- | :---: | :---: |
| Student | E | 4 | 12 |
| Student | A | 4 | 12 |
| Student | R | 4 | 14 |
| Student | J | 4 | 12 |
| Student | N | 4 | 14 |
| Student | G | 4 | 10 |
| Student | W | 4 | 14 |
| Student | L | 4 | 12 |

Please note control group in blue.

Word Accuracy

|  |  | Pre Test <br> Neale Analysis Form A <br> Percentile Rank (Raw <br> Score) | Post Test <br> Neale Analysis Form B <br> Percentile Rank (Raw <br> Score) |
| :--- | :--- | :---: | :---: |
| Student | E | $18(41)$ | $31 \quad(52)$ |
| Student | A | $12 \quad(39)$ | $31 \quad(53)$ |
| Student | R | $18 \quad(41)$ | $14 \quad(41)$ |
| Student | J | $9 \quad(37)$ | $14 \quad(41)$ |
| Student | N | $25 \quad(46)$ | $20 \quad(43)$ |
| Student | G | $18 \quad(41)$ | $22 \quad(50)$ |
| Student | W | $15 \quad(40)$ | $18 \quad(45)$ |
| Student | L | $15 \quad(40)$ | 27 |

## Please note control group in blue.

Students E, A and L show significant improvements, while student $J$ shows some (similar to control group students $G$ and $W$ ); Student $R$ (and student $N$ in the control group) show poorer results in the post tests.

Average percentile rank (treatment group):
pre test: 14.25
post test: 22.5
Average Percentile rank (control group):
post test: 21.75

Prose Comprehension
Please note that the control group is printed in blue

|  | Pre Test Neale Analysis <br> Form A <br> Percentile Rank (Raw Score) | Post Test Neale Analysis <br> Form B <br> Percentile Rank (Raw Score) |
| :---: | :---: | :---: |
| Student E | 33 (19) | 49 (24) |
| Student A | 28 (18) | 35 (26) |
| Student R | 24 (17) | 33 (20) |
| Student J | 5 (11) | 21 (16) |
| Student N | 33 (19) | 50 (24) |
| Student G | 46 (23) | 40 (22) |
| Student W | 33 (19) | 49 (24) |
| Student L | 8 (13) | 38 (20) |

Average percentile rank (treatment group):
pre test: 22.5
post test: $\quad 34.5$
Average percentile rank (control group):
pre test: 30
post test 44.25

## Reading Rate

|  | Pre Test <br> Neale Analysis Form A | Post Test <br> Neale Analysis Form B |
| :---: | :---: | :---: |
| Student E | 8 (39) | 4 (40) |
| Student A | 14 (44) | 1 (17) |
| Student R | 35 (62) | 16 (52) |
| Student J | 16 (48) | 2 (33) |
| Student N | 7 (38) | 9 (45) |
| Student G | 3 (28) | 1 (28) |
| Student W | 4 (29) | 4 (38) |
| Student L | 16 (48) | 4 (37) |

Please note control group in blue.

Average percentile rank (treatment group):
pre test: 18.25
post test: $\quad 5.75$
Average percentile rank (control group):
pre test: 7.5
post test: 4.5

## Anecdotal Evidence:

After the 7th session the class teachers reported marked improvement not only in reading but in spelling and writing.

Parents reported that their sons, daughters coped better with spelling homework and were keener to borrow or buy books.

Students volunteered that they had written away for information on the MS Readathon (E) and that they had joined the Premier's reading challenge. (R,). 10 weeks after the start of the intervention R. had read 12 books for the Premier's Reading Challenge.

Students initially reported that :
Session one:

- I fixed up mistakes. (J)
- It makes more sense.(R)
- It was more fun, exciting (J).
- I correct words. (E)
- From the 1st to the 4th reading it seemed a lot clearer. (E)
- It seemed like I got to know the story better. (E)
- I got faster. (A)
- I knew the words better. (A)
- Words I didn't know before I got this time. Some I did not. (A)


## Session two:

- It was easier because I read it four times. After the fourth reading I could sort of more understand it, I could pick up the words. I sort of knew what the words meant. If I had read it only once I sort would not understand it. If you read it more than once you know that you can read it and understand it. (E) Reported that her brother re-read the Harry Potter books many times because initially he could not understand them, but now he does,
- That I corrected more. (R)
- That I heard my mistakes more. (R)
- It makes more sense. (R)

Session four:

- I read a book at home and I didn't understand a line so I re-read it. (R)
- I know how to sound out the words better. (A)


## Session five:

- I reckon I have improved over the holidays. I read four books in the holidays. Normally I would not read four books over the holidays. Only one. Asked what she did when she got stuck: I sounded out. I chunked. I re-read sentences. (E)
- In class I read a story about the oceans, the coral reef. The whole page I did not understand so I re-read it. Then I understood it. (R)

Session six:

- After last reading I understood story much better. (A)
- I made less mistakes. I became faster. (A)
- Re-Reading helps me with writing and spelling. (J)
- I use repeated reading with homework. It is easier to do. (J)

Session seven:

- Re-reading helps me with spelling, writing, understanding. I make less mistakes. (J)

Session nine:
(Students were asked to say what they learnt in the repeated reading sessions)

R: I learnt to re-read when something doesn't make sense.
A: I learnt to read better and spell words.
E: I learnt to read, write and spell by reading.
J : I learnt how to spell words better and to read it over and it makes more sense.
R: I learnt to read out loud because I can hear my mistakes better.
E: I learnt more. I read better at home. Over the holidays when I read these books I got more confident. When I read I understand it better.
A: I kind of like reading more.

## DISCUSSION

A key finding of this study was the fact that the control group as well as the treatment group showed improvements in prose comprehension.

The average improvement in prose comprehension was even slightly higher in the control group, while the treatment group on average improved significantly more in the word accuracy test.

Student E and student A from the treatment group showed the best improvement of all students, both in word accuracy and prose comprehension. The hypothesis here is that repeated reading allowed readers to become more efficient and in turn enabled them to shift their processing resources to comprehension (Meyer, S. 1999).

The question is to ask why one of the other two students in the treatment group did not improve and another improved only slightly in their word accuracy? One possible reason could be the fact that student $J$ has low average IQ and may have needed a longer period of intervention. A larger study may answer the question if repeated reading is a suitable intervention to improve word accuracy in students with low average IQ and AP/STAM difficulties

Student R's reading accuracy went down in this test. She has low average working memory and low average processing speed (according to her IQ assessment). It is possible that these factors impacted on her decoding skills in the test situation.

Looking at the results for the reading rate, only one student from each group showed slight improvements. All other students performed worse than in the pre test. This is not surprising given that reading rates decline with more difficult texts. In the 8 sessions all students improved their reading rate from the first to the fourth reading. Student A showed the best improvements, often halving his times.

One of the features of this intervention was the individual sessions. I doubt that students would have improved as much in a group situation. I assume that in the one on one situation students were less inhibited than in a group situation.

Analysing students' comments it becomes obvious that change has happened on different levels: skill level, self esteem level and metacognitive level.

## Skill level:

Not only does repeated reading improve word accuracy and prose comprehension (see test results), improvements in spelling and writing were reported by class teachers and parents. Could it be that students learnt to re-read their own writing? The hypothesis is that a new skill was being transfered to other areas. Repeated reading taught students the value of re-reading.

## Self-esteem level:

Repeated reading assisted students to see themselves as readers who could manage texts which would have been seen as too difficult previously. Finishing and understanding the whole book gave them the confidence to go out and borrow other books to read and to join the Premier's reading challenge, as well as taking the initiative to write to the MS Readathon organisers. (Student A even asked where he could find books like Bad Bart in the library. He unsuccessfully begged me to let him take Bad Bart home for the holidays so that he could finish the book.)

Often poor readers are told the words they have trouble with. In this situation this was not the case. Students had to learn to cope with the frustration of not being able to read every word during the first and second reading. I believe that this actually encouraged them to look for other cues and empowered them to look for solutions within themselves.

## Metacognitive level:

Talking about what they noticed in regards to their reading at the end of the sessions may have contributed to the students to manage their thinking during the reading. With each repeated reading they improved in their self management and use of control strategies: rereading sentences, self correcting, slowing down and breaking the text into meaningful units. This was evident in the way they paused and used intonation.

This study set out to test the hypothesis that repeated reading assists students with AP/STAM difficulties to improve in word accuracy and prose comprehension. $50 \%$ of the treatment group showed significant improvement in both areas while the other 50 \% showed significant improvement in comprehension, but less in word accuracy. Of interest is the unexpected anecdotal evidence that repeated reading taught students to use rereading when writing and spelling. It would be of interest to undertake an action research project examining this hypothesis.

The importance of having a control group should not be underestimated. Without the control group I would have thought that repeated reading is a successful intervention. Given the fact that both groups improved similarly in their prose comprehension is to be kept in mind when planning to use repeated reading. It would be a worthwhile undertaking to use repeated reading over a longer test period to ascertain whether additional benefit would ensue.

## REFERENCES

Barkley, R.A. (1995) Taking charge of ADHD: The complete authoritative guide for parents. New York: Guilford in Rowe, K, Pollard,J \& Rowe, K (2005) Literacy, Behviour and Auditory Processing: Does teacher professional development make a difference ? Background paper to Rue Wright Memorial Award presented at the Royal College of Physicians Scientific Meeting Wellington, New Zealand, 8-11 May 2005

Bell, S.M.,McCallum, S. \& Coz E.A. (2003) Toward Research-Based Assessment of Dyslexia: Using Cognitive Measures to Identify Reading Disabilities. Journal of Learning Disabilities 2003,36,505 of literacy.

Bradley, L. \& Bryant, P.E. (1983). Categorising sounds and learning to read: A causal connection. Nature 301, 419-421 in Rowe, K, Pollard,J \& Rowe, K (2005) Literacy, Behviour and Auditory Processing: Does teacher professional development make a difference ? Background paper to Rue Wright Memorial Award presented at the Royal College of Physicians Scientific Meeting Wellington, New Zealand, 8-11 May 2005

Dahl, P.R. 1974. An experimental program for teaching high speed recognition and comprehension skills .(Final report project \#3-1154) Washington, DC: National Institute of Education in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency:Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Dodd, B., Gillon G., Oerlemans, M. Russell,T., Syrmis, M.,\& Wison,H. (1995). Phonological disorder and the acquisition In B.Dodd (Ed), Differential diagnosis and treatment of children with speech disorder (pp.125-146). London. Whurr Publishers. in Rowe, K, Pollard, J \& Rowe, K (2005) Literacy, Behaviour and Auditory Processing: Does teacher professional development make a difference ? Background paper to Rue Wright Memorial Award presented at the Royal College of Physicians Scientific Meeting Wellington, New Zealand, 8-11 May 2005

Downhower,S. 1994. Repeated reading revisited: Research into practise Reading and Writing Quarterly: Overcoming Learning Difficulties 10:343-58 in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency: Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Faulkner, H.J., and Levy,B.A. 1994. How text difficulty and reader skill interact to produce differential reliance on word and content overlap in reading transfer. Journal of Experimental Child Psychology 58: 1-24 in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency:Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Flynn, J. , Rahbar, M., and Deering, W. 1998 Manuscript submitted. Dysphonetic and dysorthographic readers: Responses to treatments using the initial teaching alphabet. in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency: Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Hinshaw, S.P. (1994) Attention Deficits and hyperactivity in children. Developmental Clinical Psychology and Psychiatric Series, Volume 29. London: Sage in Rowe, K, Pollard,J \& Rowe, K (2005) Literacy, Behviour and Auditory Processing: Does teacher professional development make a difference ? Background paper to Rue Wright Memorial Award pre-
sented at the Royal College of Physicians Scientific Meeting Wellington, New Zealand, 811 May 2005

Inserra, Rose. Bad Bart. Heinemann Library ISBN 174070002-3
Laing, S.P. \&Kamhi, A.G.(2002) The Use of Think-Aloud Protocols to Compare Inferencing Abilities in Average and Below Average Readers Journal of Learning Disabilities 2002,35,436

Lyon, G. R. 1998. Critical advanced in understanding reading acquisition and reading difficulty. Paper read at the North Carolina Branch of the International Dyslexia Association, November 1998, Boone, NC in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency: Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency: Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Munro,J. (1997) Assessing a child's level of phonological knowledge. Camperwell, Vic.:The Australian Council for Educational Research in Rowe, K, Pollard,J \& Rowe, K (2005) Literacy, Behviour and Auditory Processing: Does teacher professional development make a difference ? Background paper to Rue Wright Memorial Award presented at the Royal College of Physicians Scientific Meeting Wellington, New Zealand, 8-11 May 2005

Munro,J. (1998) Phonological and phonemic awareness: Their impact on learning to read prose and to spell. Australian Journal of Learning Disabilities, 3(2), 15-21 in Rowe, K, Pollard,J \& Rowe, K (2005) Literacy, Behviour and Auditory Processing: Does teacher professional development make a difference ? Background paper to Rue Wright Memorial Award presented at the Royal College of Physicians Scientific Meeting Wellington, New Zealand, 8-11 May 2005

Munro,J. (1999) The phonemic-orthographic nexus. Australian Journal of Learning Disabilities, 4 (3), 27-34 in Rowe, K, Pollard,J \& Rowe, K (2005) Literacy, Behaviour and Auditory Processing: Does teacher professional development make a difference ? Background paper to Rue Wright Memorial Award presented at the Royal College of Physicians Scientific Meeting Wellington, New Zealand, 8-11 May 2005

Munro, J. (2000) phonemic awareness span: A neglected dimension of phonemic awareness. Australian Developmental and Educational Psychologist, 17 (1), 76-89i n Rowe, K, Pollard,J \& Rowe, K (2005) Literacy, Behaviour and Auditory Processing: Does teacher professional development make a difference ? Background paper to Rue Wright Memorial Award presented at the Royal College of Physicians Scientific Meeting Wellington, New Zealand, 8-11 May 2005

Munro, J. (2004) Early Reading Intervention Course Notes, University of Melbourne, Victoria, Australia

Neale, M.D. (1998) Neale Analysis of Reading Ability: Revised. Melbourne:ACER
O'Shea, L., Sindelar,P., and O'Shea,D. ,1985. The effects of repeated reading and attentional cues on reading fluency and comprehension. Journal of Reading Behavior 17:12942 in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency: Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Rashotte,C., and Torgesen,J. 1985. Repeated reading and reading fluency in learning disabled children. Reading Research Quarterly 20:180-88 in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency: Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Rowe,K.J. \& Rowe, K.S. (2000). Literacy and Behaviour: Preventing the shift from what should be an 'educational issue' to what has become a major 'health issue'. International Journal of Behavioural Medicine, 7 (Supp.1), 81-82

Rowe, K.S., Pollard,J \& Rowe, K.J., (2003). Auditory processing: Literacy, behaviour and classroom practice. Speech Pathology Australia: Acquiring Knowledge in Speech, Language and Hearing, 5 (3), 134-137 in Rowe, K.S., Pollard,J \& Rowe, K.J., (2005) Literacy, Behviour and Auditory Processing: Does teacher professional development make a difference ? Background paper to Rue Wright Memorial Award presented at the Royal College of Physicians Scientific Meeting Wellington, New Zealand, 8-11 May 2005

Rowe, K.S., Pollard,J \& Rowe, K.J., (2005) Literacy, Behaviour and Auditory Processing: Does teacher professional development make a difference ? Background paper to Rue Wright Memorial Award presented at the Royal College of Physicians Scientific Meeting Wellington, New Zealand, 8-11 May 2005

## 'h̄ttp://www.acer.edu.au/research/programs/learningprocess/htmp

Samuels,S.J. 1979. The method of repeated readings. The Reading Teacher 32 (4): 40308 in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency: Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Shinn, M.R., Good,R.H., Knutson, N., Tilly,W.D., and Collins,V.L. 1992. Curriculum based measurement of oral reading fluency: A confirmatory analysis of its relation to reading. School Psychology Review 21: 459-79 in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency: Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Stoddard,K., Valcante,G. Sindelar,P. and Algozzine, B. 1993. Increasing reading rate and comprehension: The effect of repeated reading, sentence segmentation and intonation training. Reading research and Instruction 32:53-65 in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency: Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Tan, A., and Nicholson, T. 1997. Flashcards revisited: Training poor readers to read words faster improves their comprehension of text. Journal of Educational Psychology 59:276-88 in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency: Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

Tractenberg, M.E.(2002) Exploring Hypotheses About Phonological Awareness, Memory, and Reading Achievement. Journal of Learning Disabilities 2002,35,407

Weiler, M.D., Bernstein, J.H., Bellinger,D. \& Waber, D.P. (2002) Information Processing Deficits in Children with Attention-Deficit/ Hyperactivity Disorder, Inattentive Type, and Children with Reading Disability. Journal of Learning Disabilities 2002,35,448

Young A., Bowers,P., and MacKinnon,G. 1996. Effects of prosodic modeling and repeated reading on poor readers' fluency and comprehension. Applied Psycholinguistics 17:59-84 in Meyer, M.S. \& Felton, R.H., (1999) Repeated Reading To Enhance Fluency: Old Approaches and New Directions. Annals of Dyslexia 1999,49,283

## APPENDIX: TEACHING UNIT

## Using Repeated Reading to improve word accuracy and prose reading in students

 with reading difficulties and functional auditory processing difficulties.
## Format:

Grade level: Grade 5
Grouping: 8 session individual, 1 group session
Sessions: 9
Time (average): 30 minutes

## Materials:

Text: Bad Bart by Rose Inserra, Heinemann Library ISBN 174070002-3
Stop watch

## Session 1:

## Focus: Explanation of repeated reading strategy <br> Reflection on reading behaviour

## Procedure:

Explain to students that this is a new reading strategy that will assist them when reading on their own.

Explain that they will read a text aloud four times. During the first and second reading no support will be given. After the second reading they can ask for help with decoding and the meaning of words. They then have to read the text again a third and forth time.

All text readings will be timed.
Student read the text four times with a break between the second and third reading when they can ask questions in regards to decoding words and meaning of unknown words.

Students will then be given feedback in regards to reading rate, errors, and self corrections.
Errors will be examined in regards to context. Could the author have used the word you misread and would it still make sense ?

After the fourth readings students will reflect and express on what they noticed about their reading (decoding, comprehension, reading rate).

The session finishes with a discussion in regards to when they could use repeated reading in their daily lives.

## Sessions 2 to 8 (individual sessions):

## Focus: Empowering students to cope when they find it difficult to read an unseen text.

1. Talk about when and where they used repeated reading and how useful it was.
2. Students retell previous chapter from Bad Bart by Rose Inserra.

3 Students read following chapter twice, unaided.
4. Students are encouraged to ask for assistance with word reading and meaning of words.
5. Students repeat reading for third and forth time. Teacher times all readings and takes running records.
6. Teachers gives feedback to student (reading rate improvement, errors and self corrections, and examines errors together with students ) Teacher praises students for their efforts.
7. Students are encouraged to reflect on how their reading has changed with the repeated reading sessions (decoding, comprehension, context).

8 Students are encouraged to think where and when they can use repeated reading in their daily lives. They are also encouraged to discuss this new strategy with their fami lies.

## Session 9 (group session):

## Focus: Reflection and group support

Teacher congratulates students on having finished a chapter book.
Teacher then starts the discussion by asking all students:
"Please tell us, what you have learnt in the last eight sessions".
Brainstorming, answers put on butcher paper.
(Teacher may need to prompt students with asking them about decoding, comprehension and reading rate.)

Discuss use of strategy: "You have learnt a new strategy to assist you with your reading.
Are there other times -outside these sessions- when you have started using this repeated reading strategy? What have you found it helpful with ?

Brainstorming, again answers put on butcher paper.
Students then are encouraged to tell some of their peers in class what they have done in the withdrawal lessons. "You have learnt that repeated reading is a useful strategy when you find it difficult to understand what you have read. It might be useful for other students. too. Would you like to talk about your experience with some of your peers? What could you tell them?" Teacher gives each student the opportunity to practise what they would
like to say and facilitates students to talk to one other student or to a small group of friends.

Butcher paper displayed in classroom

This document was created with Win2PDF available at http://www.daneprairie.com. The unregistered version of Win2PDF is for evaluation or non-commercial use only.

