Utilising a brain-based intervention to improve the reading of secondary students who have difficulty reading because of developmental dyslexia

John McGlashan College (TLIF 1-008)

For the Ministry of Education
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Project title:
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Summary

The question for this inquiry was: Can a school-based reading intervention be devised to increase reading levels in adolescents who have significant ongoing problems in reading? The goal was to devise an effective reading intervention for adolescents with special needs in the area of reading, by comparing the effectiveness of a reading intervention based on the Knowledge Sources theory of reading acquisition with the effectiveness of the school’s current reading intervention. The school’s current approach is based on explicit phonological recoding, in which each letter-sound is pronounced in sequence and with the deletion of unnecessary vowel sounds. The intended benefit from this project was that students’ reading was expected to improve, along with their confidence levels.

Inquiry Team

- Expert Adviser: Associate Professor Claire Fletcher-Flinn (research design, professional learning and development, specialised assessment, data analysis)
- Project Leader: Sue Porter, John McGlashan College (project management)
- Intervention Teacher: Mary Guthrie, John McGlashan College
- Control Teacher: Rebecca Rapson, John McGlashan College

Background

Some students with dyslexia lose out on learning opportunities, underperform or disengage because their reading level is below the level required for success. It was anticipated that the brain-based intervention would improve students’ reading more than the reading teacher’s usual approach.

The inquiry

Design: This project was a pre-test/ post-test design carried out during term 3, 2015. There were two groups (intervention and comparison), both consisting of students with significant reading difficulties (i.e. at least 1.5 years below their chronological age). Eight Year 9 and Year 10 students who were
already in literacy groups were combined to form one group, which was assigned to the intervention conditions. The control group was made up of five Year 7 and Year 8 students and an additional two Year 9 and one Year 10 student. The intervention group received the treatment at the beginning of the study. The comparison group received their usual instructional remediation, which was small group guided reading.

**Teaching approach used**

<table>
<thead>
<tr>
<th>Comparison group</th>
<th>Intervention group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Guided Reading</strong></td>
<td><strong>Read aloud - Word provision- Explain meaning</strong></td>
</tr>
<tr>
<td>8 students (10 weeks, term 3, 2015)</td>
<td>8 students (10 weeks, term 3, 2015)</td>
</tr>
</tbody>
</table>

**Week 1 - Baseline assessments completed**

3 x 50 minute lessons per week for 8 weeks (weeks 2-9)

Small group guided silent reading led by the teacher

Teacher selected reading material was used based around the instructional reading age of the whole group or on a topic of general interest e.g. sports training

The text was divided into chunks to read silently

Questions were posed by the teacher or other students as the students read silently then discussed their answers/ideas

Follow-up/reinforcement activities involved writing, making, drawing, answering questions

**Week 10 - Post testing completed**

Week 1 - Baseline assessments completed

3 x 50 minute lessons per week for 8 weeks (weeks 2-9)

Reading material was selected by the students, ranging from personal interest novels or magazines, to curriculum based reading material such as English speech, science texts. The material was checked by the teacher and student to see that it provided sufficient challenge for the student to learn from.

Each student was rostered to read aloud for six minutes to the teacher during each lesson while the other students worked independently on reading related tasks in another area of the classroom. When students came across an unknown word in the text, the teacher told them what it was immediately and at times discussed what the word meant if the student did not know. Each student had a notebook and any new words that were provided by the teacher were recorded by the teacher in their notebook. Once a week the boys chose one or two words from their notebooks and they did some word study activities based around these as part of the reading related tasks they did independently.

**Week 10 - Post testing completed**
Assessment

At the end of one term’s intervention (the end of Term 3), the progress of the two groups was compared by repeating the pre-tests. Tests included WRAT-4 Green and Blue Word reading tests and PAT (vocabulary, reading comprehension and listening comprehension). The understanding of teachers in the project about how students learn to read and their rationale for their current teaching approach were surveyed prior to the intervention survey via Google forms. The students completed a baseline student voice survey using Google forms. This related to their confidence, goals and any previous teaching approaches they had found successful for them. Parents of the students involved in the project were also emailed a baseline survey to complete using Google forms.

Key findings

Students

- Both intervention and comparison groups made gains on the standardised reading measures and there were no significant differences between them. Both groups believed that their reading had improved.
- Students who were supplied with more words during the intervention made the most gains on the WRAT-4 test and on PAT comprehension.
- The feedback from the students comparing pre-test and post-test ratings with regard to attitudes about reading showed statistically significant positive changes overall, while the comparison group showed negative, or no changes.
- With regard to individual questions, the experimental group showed more confidence in reading, and endorsed more helpful activities, while the comparison group showed a decrease in both.
• When asked to reflect on their experiences of the interventions, all students in the intervention group and 75% of the comparison group thought they had improved. In particular, significantly more of the experimental group thought their comprehension and ability to attempt new words had improved more than those in the comparison group.

Parents

• Parents reported that they knew very little about the reading process and teachers functioned as an important source of knowledge for them.
• They were mainly dependent on school programmes to help their sons, although they had little involvement with actual reading programmes whether they were at school, or privately run.
• All parents wanted their sons to enjoy reading, and provided a variety of reading material.
• They expressed concern and/or frustration about their son’s reading ability.

Teachers

• Most teachers considered that they were moderately effective teaching students who were dyslexic/severely struggling with reading. Two thought they had low impact.
• The majority of teachers (67%) reported that they had received very little professional development about dyslexia, and one teacher had not received any.
• All used instructional strategies learned through additional courses, including some professional development, which they thought were moderately successful. Most thought a different approach was needed.
• The barriers to successful interventions included problems with timetabling, targeting and offering remediation, engagement of students, and the current focus on compensation as opposed to remediation.

**Key implications**

• Students with reading difficulties may need a different approach, not more of the same.
• The study demonstrated that reading interventions can be effective at secondary school and the need for ‘compensatory strategies” such as providing a ‘reader-writer’ might be able to be reduced if effective reading interventions were carried out earlier in the students’ education.

**Plans for sharing the findings**

• Full staff presentation at John McGlashan College
• Presentation to Resource Teachers Learning and Behaviour (RTLBs), teaching staff and Specialist Classroom teacher from three local high schools that attended the professional development workshop at the start of the project (after school session term 1 2017)
• Parents of the students involved in the project (2-3pm on the last day of term 1, 2017)
Reference List


For further information

If you would like to learn more about this project please contact the project leader: sue.porter@mcglashan.school.nz
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