

**Using MP3 Players to aid in the Development of Oral Fluency and Reading  
Comprehension in the Junior Classroom**

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**Overview**

What do educators do with Grade Four students who have already established perceptions of themselves as non-readers? How do we engage students in texts and reading in today's world of dazzling technology?

This was our problem.

As educators of nine- and ten-year olds in a school setting, we found ourselves looking for ways to help our students get excited about reading, and to give those students who had experienced limited reading success an opportunity to set themselves up with skills to increase reading fluency. Like Pikulski and Chard (2005), we believe that fluency “is absolutely necessary for that achievement [in high levels of reading] because it depends upon and typically reflects comprehension” (517). We similarly agree with Allington (1983), who refers to fluency as the “neglected goal of reading instruction.” It is our conviction that our students need to be taught explicitly what fluency is and how to use it self-consciously, in order that they may better comprehend and engage texts. We understand a fluent reader to be one who reads accurately at a rapid rate, recognizing

words automatically, using correct phrasing and intonation, while also attending to an author's syntax and constructing the meaning of texts.

However, at the beginning of the 2008-2009 school year, we noted that a large number of our grade four students were not fluent readers. This observation was confirmed during our September diagnostic assessment, in which we found that a significant proportion of the students entering our junior division demonstrated a marked deficiency in reading, particularly in the areas of expression, phrasing and reading rate. This observation was consistent with the views of Pinnell (1995), who found in a study for the NAEP that 44% of fourth graders lacked sufficient fluency to comprehend grade level texts. We asked ourselves if, by using mp3 technology, we could increase the fluency of our junior readers to a greater degree than they had experienced in the past, as measured by standardized tests.

## **Methodology**

The idea for our project originally began in September 2008 with eight refurbished mp3 units which were used in differentiated reading tasks by our struggling students. These tasks centered on leveled readings targeted at or just above their DRA levels. Students read for approximately fifteen minutes, during which they used the mp3 units to record, and then listen back to, their oral reading. This technique is supported by Harvey (1985), who notes that “[t]hrough reading practice, less able, non-fluent readers learn to automate decoding skills. With these skills automatic, readers are free to attend to the meaning [of

texts]”. Our feeling was that if students were freed from focusing on word attack and recognition strategies, and were to become meta-cognitively aware of fluency elements, it would allow them space to think about, analyze, and evaluate the material read. There were two unique aspects of the assignments given to our students, both of which were made possible by the mp3 players: first, students reflected multiple times on their own reading, and, secondly, they did so with complete privacy. The only people who would hear a student’s recording(s) was the child’s teacher, parents and the student.

During those early weeks in September, we realized we were onto something. We vividly recall the sight of these students – who were formerly such reticent and unconfident readers – reading without interruption or pause for twenty, thirty, even forty minutes at a time. The children we are speaking of are students who came to us with a wide range of academic and emotional difficulties. Many of them have backgrounds of violence and neglect; all of them see (or saw) themselves as intellectually different from their peers.

After receiving the grant from MISA, we were able both to broaden and deepen the integration of mp3 technology to include all of the students in grade four. We designed activities that, on the one hand, systematically addressed central aspects of reading fluency, and, on the other, were highly differentiated because each student was applying these lessons to her/his own learning. As we formally began our active research project, students started each week with our school’s Literacy Improvement Project Teacher, who modeled specific aspects of reading fluency (such as intonation, rate, phrasing, and the

signals of punctuation), as well as the role of dialogue, typographical signals, and rhyming influences. These aspects became the focus of the week's reading fluency activities. This instructional approach is supported by Rasinki (2003), who outlines four strategies for effectively building students' reading fluency – modeling, providing oral support, repetition and phrasing – which were integrated into the instructional sequence of this study. The central reading activity was an extension of the one we first used in September with our struggling readers, in which students read and re-read (usually to a total of three attempts) texts targeted to their instructional reading level, each time listening to themselves and making notes on difficulties and areas for self improvement. Our rationale for this iterative approach was that, as Willingham (2009) observes, “You practice not just to get faster. What’s important is getting so good at recognizing letters that retrieving the sound becomes automatic. If it’s automatic, you have freed working-memory space that used to be devoted to retrieving the sounds from long-term memory – space that can now be devoted to thinking about meaning” (p. 87).<sup>1</sup> As teachers we want students to think about and reflect on their reading not only so they develop strategies for improvement, but also because in consolidating their reading fluency, decoding skills are transferred from working memory to long-term memory, thereby making fluent reading a reflexive response to written text and relieving students’ minds to attend to comprehension and then analysis. This theory/approach is supported by an established body of research, most notably Dowhower (1987), who posits that improvements in

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<sup>1</sup> The idea of repetitive readings is not a new one; for instance, Harvey (1985) cites two earlier studies (Dahl [1974] and Samuels [1979]) where it was seen as “a method by which some readers can achieve automaticity and thus free their attention for comprehension” (554). Similarly, in a study looking at fluency training among grade two students, Reutzel & Hollingsworth (1993) concludes there is “a causal link between improving students’ reading fluency and simultaneously improving their reading fluency” (330).

students' oral reading fluency has a positive effect on a range of reading skills; similarly, Pikulski & Chard (2005) demonstrate that students cannot focus on both the process of word recognition and comprehension simultaneously and operate successfully as readers.

We believe it is important to stress the independence with which students assessed their oral reading using the mp3 units. As teachers, we monitored their progress by listening to their recordings and working with individuals in guided reading groups. But the daily practice of reading-listening-reflecting-re-reading was done by the majority of our students without the need of regular or frequent interventions from the teacher. Each step of this process was modeled at length for students, but once the program was put in place, students managed the day-to-day process with remarkable independence. The point we want to stress here is that one of the unlooked for observations of this study was that students in general, and most of our reticent students in particular, enjoyed the self-directed nature of their own learning. We do not know what more we can make of the observation at this time, but we believe it to be significant and full of potential implication for our approach to helping reticent, or delayed, readers.

### **The Data: Collection, Observations and Conclusions**

We collected a wide range of data as part of this study. Along with DRA data gathered at the beginning and end of the school year, we administered five subtests (Word Attack, Reading Vocabulary, Reading Fluency, Letter-Word Identification, and Passage Comprehension) of the Woodcock-Johnson III as part of our pre and post testing.

Ongoing data was collected by two McMaster University students who administered the Dibels reading fluency test every two weeks to each grade four student. These students worked with us as part of their field work done at EBEST, the research division of the Hamilton-Wentworth District School Board. While the test results showed varying degrees of success, overall the collected data suggests that the use of mp3 players made a significant improvement in our students' reading fluency.

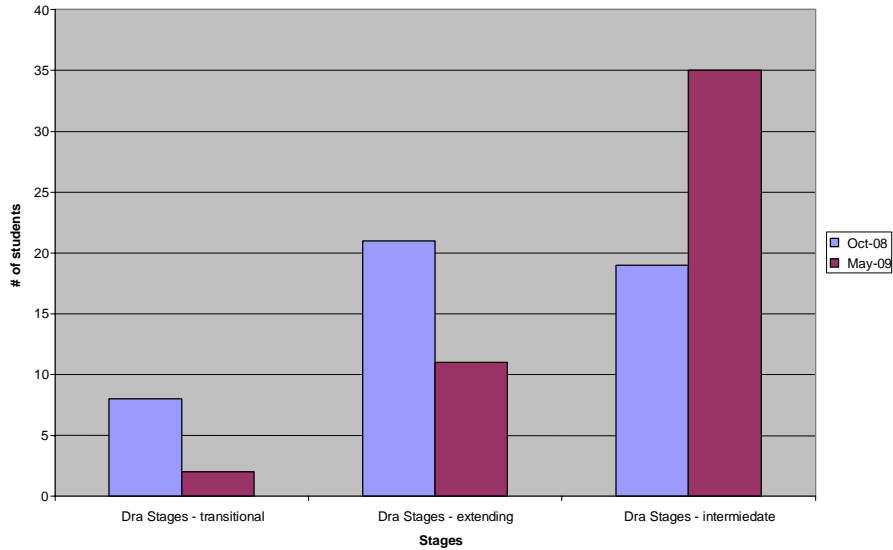
**Figure 1: DRA Results, Hamilton-Wentworth District School Board**

<b>Grade</b>	<b>Benchmark</b>	<b>Spring 2007</b>	<b>Spring 2008</b>
<b>JK</b>	<b>A-1</b>	60.9%	66.1%
<b>SK</b>	<b>4</b>	27.5%	28.7%
<b>1</b>	<b>16</b>	42.3%	45.2%
<b>2</b>	<b>28</b>	51.4%	52.5%
<b>3</b>	<b>38</b>	51.9%	53.5%

The above chart shows that prior to entering grade four, 53.5% of the grade three students at the HWDSB met the DRA benchmark of level 38. In comparison, 30 of 45 students in the test group met the benchmark at the end of grade three, which (at 66%) is well above the Board average.

It is interesting to note that the classes as one group do seem to be an anomaly because they are scoring well above the Board average, but when viewed as separate units, the two classes are very different from each other. The 4.1 class had only 3 of the 20 subjects not meeting the benchmarks at the end of grade three, while 17 (or 85%) of the students were at or above the benchmark. Class 4.2 looked much more like the Board's 'norm'. Of these students, 12 of the 25 fell below the benchmark at the end of grade three, while 13 (or 52%) were at or above the benchmark. This directly correlates with the Board numbers.

**Figure 2: DRA Stages - Oct to May**



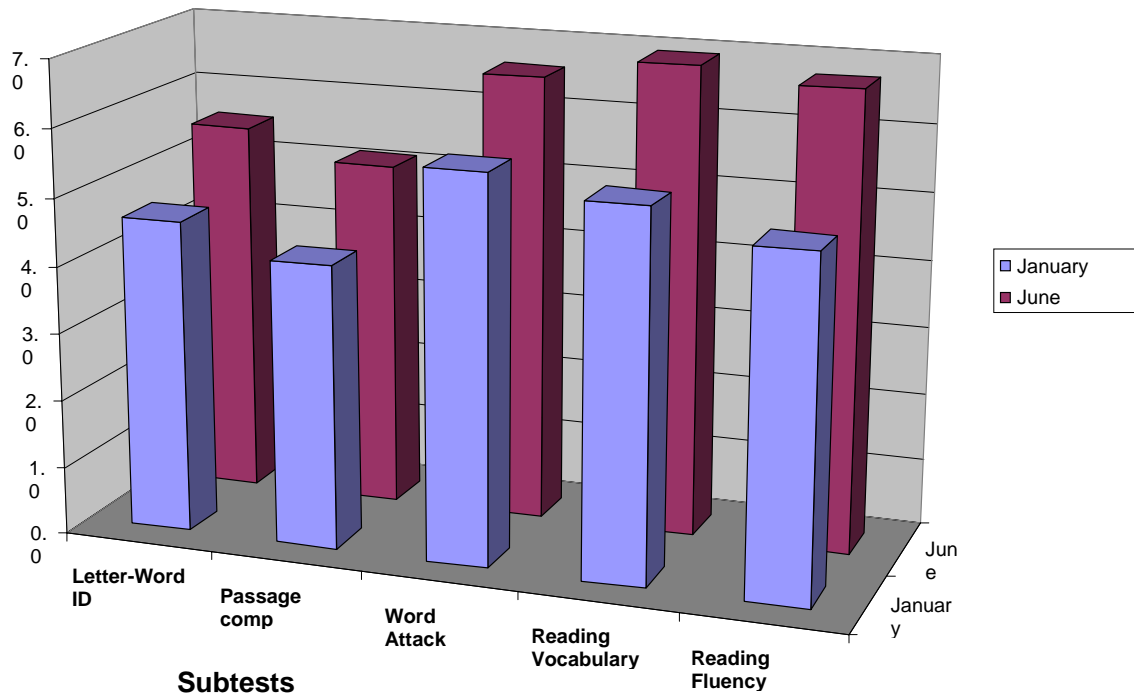
In Figure Two, we can note the improvement of those students that were classed by the DRA as “Transitional” (Grade Two Level) versus those that were “Extending” (Grade Three Level) and “Intermediate” (Grade Four Level) demonstrating a dramatic transition of lower level readers becoming grade level or higher readers.<sup>2</sup>

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<sup>2</sup> However, the DRA has a limitation that limits these comparisons. In grade four, all of the students are tested using the same tool and marking scheme, which when graded, creates a ceiling that no student can surpass. However, the students not meeting the grade four expectations at the beginning of the year are given lower level tests and this allows them to make much greater gains over the year before they hit that ceiling.



**Figure 3: Fluency rates according to the WJ-III**



Some of the most striking improvements were seen in the Woodcock-Johnson subtest for Fluency. As we can see in Figure Three, above, there was a significant increase in fluency overall. In comparison with the other subtests administered from the WJ-III, the Reading Fluency subtest showed the greatest improvement. This is a strong indication that mp3 technology is having a positive effect on reading fluency in particular. The greatest gains were made in Reading Fluency for both boys and girls, with the boys making greater gains than the girls. The difference is likely due to the fact that on average, the boys began at a much lower level of reading fluency. This gives some indication that the mp3 technology is beneficial for both low and high levels readers.

## **Concluding Remarks**

Assistive technology can affect real change in the lives of children. In the case of the mp3 units we are using, it is not that there is anything magical about the technology itself, but rather that mp3 players provide students with self-directed and private reflection on their own learning. What does my voice sound like when I read? How does my reading sound? What can I do to make my reading better? These are the kinds of questions that students face when working in an individualized setting. Notice, too, the pronouns in those sentences: *I* and *my*. Nowhere is the teacher mentioned.

Though it is not possible to document, we are convinced that a key reason for the success of this program is the unaccustomed feeling of safety which mp3 players bring to oral reading for these children. This observation drives home the realization that our level one students' oral reading must be confounded and affected by a self-consciousness of their delay – what Fountas and Pinnell (2006) refer to as the “attendant embarrassment” of traditional oral reading practice which, in the past, has fostered in many children a “lifelong fear of reading aloud” (p. 80). When reading into their mp3 players, our students' body language was relaxed, their expressions engaged with what they were reading. We are not certain that we have yet made these children confident readers, but we do believe that the mp3 units allowed them to read confidently.

## References

- Allington, R.L. (1983). Fluency: The neglected reading goal. *The Reading Teacher*, 36, 556-561.
- Daane, M. C., Campbell, J. R., Grigg, W. S., Goodman, M. J., and Oranje, A. (2005). *Fourth-Grade Students Reading Aloud : NAEP 2002 Special Study of Oral Reading (NCES 2006-469)*. U.S. Department of Education. Institute of Education Sciences, National Centre for Education Statistics. Washington D. C.: Government Printing Office.
- Dowhower, S. L. (1987). Effects of Repeated Readings on Selected Second Grade Transitional Readers' Fluency and Comprehension. *Reading Research Quarterly*, xxii, 389-406.
- Fountas and Pinnell (2006), *Teaching for Comprehension and Fluency*. Portsmouth: Heineman.
- Herman, Patricia A. (1985). The Effect of Repeated Readings on Reading Rate, Speech Pauses, and Word Recognition Accuracy. *Reading Research Quarterly*, xx, 553-565.
- Nathan R. G. & Stanovich K.E. (1991). The causes and consequences of differences in reading fluency. *Theory into Practice*, 30,176-184.
- National Reading Panel. "Report on NRP teaching Children to Read." Report of the Subgroups. Washington: U.S. Department of Health & Human Services, National Institute of Health, 2000.
- Pikulski, J.J. & Chard, D.J. (2005). Fluency: Bridge between decoding and reading comprehension. *The Reading Teacher*. 58, 6, 510-519.
- Rasinski, T. V. (1989) Adult reader's sensitivity to phrase boundaries in texts. *Journal of Experimental Education*, 58.
- Rasinski, T. V. (2003). *The Fluent Reader*. New York: Scholastic Professional Books.
- Reutzel, D. Ray & Hollingsworth, Paul M. (1993). Effects of Fluency Training on Second Graders' Reading Comprehension. *Journal of Educational Research*, 86, 325-331.
- Willingham, Daniel T. (2009). *Why Don't Students Like School? A Cognitive Scientist Answers Questions About How the Mind Works and What It Means for Your Classroom*. San Francisco: Jossey-Bass.