

Handwriting And Reading Fluency Is There A Connection?

A Teacher Survey Study

Many decades ago, Maria Montessori wrote¹ that children who were “expert” at handwriting the alphabet had no trouble learning to read. More recently, Marilyn Jager Adams wrote, ““It has been shown that the act of writing newly learned words results in a significant strengthening of their perceptual integrity in recognition. This is surely a factor underlying the documented advantages of programs that emphasize writing and spelling activities.”² A few years ago Robert Rose, MD (retired) and a number of volunteer teachers investigated the “connection theory” by collecting objective data on handwriting fluency and comparing individual student scores with a subjective assessment of student progress in reading skill development. The results indicated a strong connection.

Children who were able to write the alphabet fluently, were all rated as reading above grade level expectations. The work was repeated with new volunteer teachers and showed the same results. “THE WRITING/READING CONNECTION”³ can be downloaded from the Peterson Handwriting web site. While some children were reading before becoming fluent writers, all non-readers were dysfluent writers. Find a link on the references page.

Two studies published in 2012 provide powerful evidence for consideration. Young et. al.⁵ demonstrated for the first time, a perceptual condition called Reverse Positioning Sensation (RPS). The fifteen-year study included literally hundreds of LD/ADHD/WLD identified subjects and showed that successful remediation of poor handwriting approach skills greatly reduced the impact of learning difficulties. James, et. al.⁴ used fMRI with pre-literate children to show that the act of handwriting stimulated the “Reading Circuit” while tracing and typing did not have the same effect.

Time for instruction of handwriting skills has been shrinking for decades, in part because of the persistence of illiteracy and learning disabilities. The federal “core standards,” push the schools farther away from teaching handwriting skills and have created a lot of controversy. A relatively simple survey study could shed light on the situation for teachers if they would invest some time to gather data and submit it for compilation.

Our theory is simple. At primary levels, scores for RAN/Letters will correlate with Handwriting LPM scores. We want to find out if the very simple Handwriting LPM test can offer a sensible approach for tracking the degree of reading improvement as the early years of learning progress, as well as demonstrate the value of handwriting skill instruction aimed at fluency. Correlation of the two assessments would offer objective evidence that will help countless teachers decide how to deal with the controversy in their classroom.

Goal 1 - An Objective Reading Fluency Score

The Random Automatic Naming test (RAN/Letters) has become widely accepted as a good predictor of future success with reading skill development. It is relatively easy to conduct this assessment so we will collect this data as objective evidence of reading skill progress. Should the initial data support the theory, a second phase could provide an answer to a question that has been discussed and unresolved for at least 20 years. Does handwriting expertise (fluency/automaticity) have any effect on developing literacy?

The RAN/Letters will be a bit challenging due to the one-on-one evaluation process, but the individual evaluations do not take long and the data can be gathered over several weeks. Relative to other measures of reading, this is a quick evaluation. The teacher/monitor uses a prepared page showing the lowercase alphabet in random order. That page is provided in this document so that all teachers and students can use the same page. The child

is asked to name the letters in a timed-reading activity. The monitor records the score as 26/80 (the number of letters recognized over the number of seconds required for naming). Some schools focus on automating the sounds represented by letters rather than the names of the letters. For this reason, responses naming with the sound or the letter name will be counted correct.

It is expected that a range of scores will be recorded as some children might not be able to sound or name all of the letters. For that reason, the monitor needs to prompt the child to skip a letter that is not automatically recognized by naming the symbol for the child. The 'skip' prompt should be given at the first sign of hesitation because we do not want to inflate scores when obvious hesitations would add many seconds. That symbol should be marked for elimination from the count on a copy of the sheet used by the monitor. Hopefully it will also be used for coaching.

We want to establish a letters-per-time score. The monitor will record the number of letters identified correctly and the amount of time required to complete the task.

Goal 2 - An Objective Handwriting Fluency Score

The handwriting fluency test can be done with a whole class in a couple of minutes including management time. The teacher asks the children to write their name or initials on the page for identification, and explains the writing task. Students are asked to write the *lowercase* alphabet in a-z order, beginning when the "start" command is given. When stop is called, pupils will finish a letter being written and put the pencil down. A stop watch will be needed to control the writing time. Twenty seconds will be allowed for writing.

The papers will be collected and saved. The monitor will count and record the number of legible letters written by each child (x/20 seconds). The report can be submitted via e-mail or via FAX. A form suitable for reporting is provided in this document. It is not necessary to use this example form if reporting with e-mail. Student names should not be used in an e-mail report. Initials, all three please, or a number can be assigned for each child to blind the data. Please arrange your report as a vertical list, one pupil per line.

Student ID RAN/time #LP/20 Reading

Goal 3 - A Subjective Reading Progress Statement

The RAN/Letters Score is primarily an indicator of readiness for reading. It is expected that naming scores will correlate with and usually be higher than writing LPM scores. In the event this correlation does prove to be significant, it will also be helpful to know how the teacher feels about the subjects' reading progress in a subjective way. Please use the following simple convention to indicate how each subject is progressing.

A = Subject is reading: ABOVE Grade Level

O = Subject is reading: On Grade Level

N = Subject is lagging and NEEDS help.

Report On Findings

Teacher data will be combined with the same submitted by the other teachers. Once the compilation is complete, a paper will be prepared and shared with all via e-mail. It will also be made available for download from the Peterson Handwriting web site. The report will recognize participating teachers.

If this initial data supports the theory by illuminating a correlation, a second round of assessments, conducted after a month or two of regular handwriting practice, could prove the connection and the value of handwriting instruction aimed at fluency.

It is surprising, but the timed-writing exercise, in and of itself, will often stimulate a dramatic increase in production rate. It may be that some children suddenly become aware of the production-rate idea by participating. The activity may also stimulate a connection to motor patterns that has not been tapped previously due to the fact that the production challenge had not been presented before.

Many teachers have reported that improved handwriting fluency stimulates dramatic improvement in reading and spelling, at all grade levels, and in a relatively short time period. This study can lead to a paper that will support many teachers and curriculum directors who would like to re-establish a priority for handwriting skill instruction.

Thank you in advance for participating. Please don't hesitate to contact the author directly if you have questions.

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RAN/Letters Assessment Form

Student ID _____ Date _____

m g h j n u d v c b i x e
s y k a p f w o t r l q z

Time Needed: _____ minutes + _____ seconds

Total time in seconds _____

Number of Letters Identified _____

Instructions:

Show the form and explain the task. The student will begin to identify the letters when the monitor gives the command to start. Explain that the “skip” command will be given when the pupil hesitates to name a letter. The pupil can identify the letters using the letter name or by saying the sound represented depending upon the focus of instruction in your school.

The monitor will use a stop watch to measure the time needed to identify the symbols. A copy of this form will be used by the monitor during the activity, to mark letters that are not recognized automatically. Skipped letters will not be counted for the report.

Please report student data for your group via e-mail to: Rand Nelson <mrpencil@peterson-handwriting.com> along with the handwriting fluency score. Use initials or numbers for student ID. Please do not submit student names with the data.

Handwriting Expertise (Fluency) Evaluation Form

Student ID _____ Date _____

Instructions:

Explain the task to the class. Students are asked to write the lowercase letters of the alphabet, in order from a to z, beginning at the start command. When the stop command is given the pupils should finish a “letter in progress” and put the pencil down.

The monitor will use a stopwatch to carefully control writing time. Allow twenty seconds for writing. Collect the papers for compilation. Count the number of legible letters written by each child for the report. Write the score on each paper and save for future use. Your pupils will enjoy the timed-writing exercise and an opportunity to compare scores another day.

Please report the number of legible letters written by each child in 20 seconds along with the RAN/Letters score. Please use initials or numbers for student ID. Mail To: Rand Nelson <mrpencil@peterson-handwriting.com>

References

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2. Adams, Marilyn Jager. *Beginning to Read: Thinking and Learning About Print*, MIT Press, 1990, pp.230-231
http://en.wikipedia.org/wiki/Marilyn_Jager_Adams
3. Rose, Robert V. *The Writing/Reading Connection*, 2004.
Download the paper at this URL:

http://www.peterson-handwriting.com/teacher_support/Research-teachersupport.html
4. James KH, Engelhardt L. The effects of handwriting experience on functional brain development in pre-literate children. *Trends in Neuroscience and Education* (2012), <http://dx.doi.org/10.1016/j.tine.2012.08.001>
5. Rowe A. Young, Benson E. Ginsburg, Dawn Bradway (2012). Physical and Behavioral Markers Help Identify Written Language Disability (WLD) Related to Attention Deficit Hyperactivity. Disorder (ADHD). *Psychology*, 3, 36-44.