Printing Like a Pro! Workshop

A New Evidence-Based Resource for Students with Written Output Challenges

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With case studies by:
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CSD (SD#43) Professional Development Day
Friday, April 11, 2014

Outline

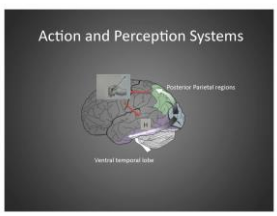
- Introduce neuroscientific evidence regarding the importance of printing, describe motor learning theory, and highlight the empirical evidence used to develop the *Printing Like a Pro!* program
- Describe how "Printing Like a Pro!" was conceived, review the "Printing Like a Pro!" program, and highlight how to access the program
- Present case studies of use of the program both in classroom and student services capacities
- Discussion and Questions

Importance of Printing

- 30-60% of school day is spent handwriting and other fine motor tasks (McHale & Cermack, 1992)
- Handwriting constitutes the primary way that elementary school students demonstrate their knowledge in all academic areas (Case-Smith 2002)
- Despite the growing use of computers and technology in the classroom, handwriting remains an essential life skill (Feder & Majnemer, 2007; Cahill, 2009; McCarney, Peters, Jackson, Thomas & Kirby, 2013)
- Handwriting has been described as "language by hand" (Berninger & Graham, 1998)

Printing may strengthen reading skills

- Action (fine motor) and perception (reading) systems in the brain are linked

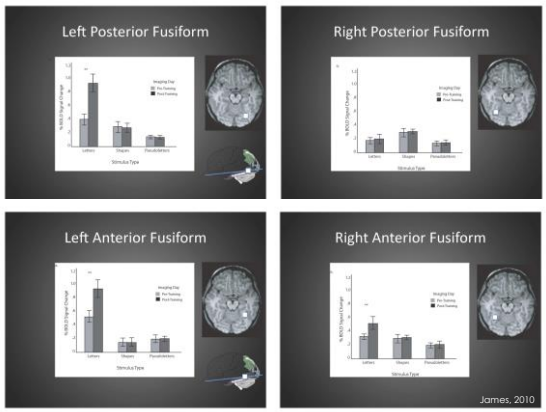


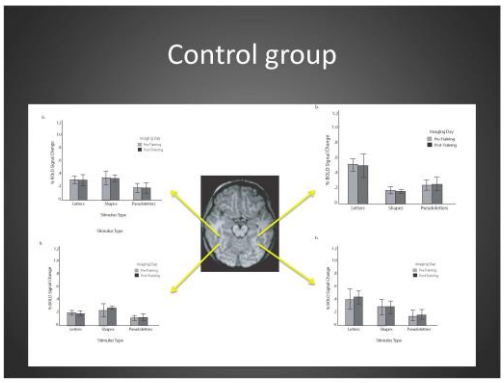
Karin Harman James, IU

fMRI study (James, 2010)

- 12 preschool children (ages 4-5 years)
  - 6 in experimental group: practiced printing
  - 6 in control group: practiced visual letter recognition
- Children in each group were scanned before and after practice to measure activation to letters, shapes, and pseudo-letters
- Children in printing group showed greater letter recognition compared to children who practiced letter recognition

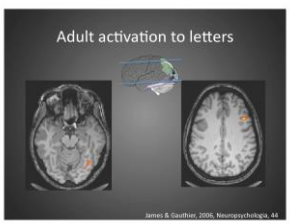
James, 2010





Printing may help struggling readers

- Only after printing (fine-motor) experience does visual activation to letters become more adult-like



Implications of handwriting difficulties

- Handwriting difficulties remain in an estimated 30% of children by the end of Grade 1, and 15% of children by the end of Grade 5 (Karlsdottir & Stefansson, 2002)
- Attentional resources are directed to letter formation, which can interfere with confidence, quality and competence as a compositional writer (Baker, Gersten, & Graham, 2003; Case-Smith, 2002; Donica, 2010; Graham, Harris, & Fink, 2000; Graham & Weintraub, 1996; Medwell & Wray, 2008)
- Without sufficient additional practice to build up their handwriting skills and attain automaticity, children may struggle to demonstrate their potential in other areas (McCarney et.al., 2013)

Implications of handwriting difficulties

- Poor legibility can can mask academic ability and interfere with teachers' perceptions and grading of students' written work (Briggs, 1970; Connelly, Campbell, McLean, & Barnes, 2006; Markham, 1976) and this effect extends to adulthood (Amundson & Weil, 2001; Connelly, Dockrell, & Barnett, 2005)
- Slow handwriting speed can contribute to incomplete assignments or increased time to finish written work (Berninger, Mizokawa, & Bragg, 1991)
- Avoidance of writing tasks, frustration, academic failure and lowered self-esteem can result from problems associated with poor handwriting (Rubin & Henderson, 1982; Tseng & Cermak, 1993; Case-Smith 2002; Feder & Majnemer, 2007; McCarney et. al., 2013)

Automaticity is important

- "Automatic legible handwriting is an essential basis for written expression" (Sheffield, 1996, p. 22) and is the single best predictor of length and quality of written expression (Graham et al., 1997)
- Thus, the focus of handwriting instruction and intervention should be on achieving automaticity so that students are no longer learning to write but writing to learn! (Reisman,1993)
- Giving children the opportunity to practise sufficiently may release working memory to be applied to the cognitive demands of the task and may potentially raise their level of attainment (McCarney, 2013)
- Motor learning theory addresses automaticity, therefore, has an important role to play in handwriting skill development

What is motor learning?

- "a set of processes associated with practice or experience leading to relatively permanent changes in the capability for movement" (Schmidt & Lee, 2005, p. 302)
- In the case of handwriting, this "permanent change" would translate into automaticity of the skill, such that little conscious effort is required for legible letter formation

Stages of Motor Learning

Three stages of motor learning (Fitts & Posner,1967)

1) Cognitive
2) Associative
3) Autonomous

1. Cognitive Stage (aka verbal motor stage)

- An individual may have a general idea of the movement required for a task, but might not be sure how to execute that movement
- Cognitive strategies are needed to guide motor behaviour, such as concerted attention to task requirements and/or verbalization of movement strategies
- Performance during this stage is likely to be highly variable with a large number of errors

2. Associative Stage

- Skills become more refined with practice, resulting in greater consistency of performance and fewer errors
- Less guidance is required during this stage to allow the individual to make errors so that he or she can learn to adjust subsequent movements independently (Poole, 1991)
- The ability to learn from errors is thought to promote generalization to similar motor tasks

3. Autonomous Stage

- Automaticity of motor learning occurs in this stage
- The motor skill has been learned and little cognitive effort is required to execute it
- Automaticity is evident when a motor skill can be performed while engaging in another task
- Evidence from neuroscience indicates that less brain activation is required when automaticity of movement has been achieved, suggesting that fewer attentional demands are required (Poldrack et al., 2005; Wu, Kansaku, & Hallett, 2004)

Practice

Essential Ingredient:

- **Task specific handwriting practice** is essential for improvements in handwriting (Hoy, Egan & Feder, 2011)
- **Intensity, frequency, and duration** of practice are key tenets of motor learning theory (Zwicker & Harris, 2009)
- Cumulative research suggests that a minimum of **20 sessions, twice per week,** are necessary to produce improvements **in handwriting legibility** (time per session varied from 20-60 minutes) (Hoy, Egan & Feder, 2011)
- Improvements in **letter quality may precede** improvements in **speed,** the latter requiring additional practice time (Hoy, Egan & Feder, 2011)

Type of Practice:

- It is unclear from the research whether handwriting practice requires a cognitive or sensorimotor component or some combination of the two
- However, in a recent systematic review (Hoy, Egan & Feder, 2011) the one study with adequate practice time that examined interventions that focused on either cognitive or sensorimotor-based activities, significant results were achieved only in the cognitively focused intervention (Weintraub et al., 2009)

Practice schedules

- *Distributed practice* involves practising a task alternating with periods of rest and is considered superior for motor learning (similar to classroom teaching) (Donovan & Radosevich, 1999)
- *Blocked practice* is thought to be most beneficial when first learning a skill (i.e., cognitive stage), with *random practice* more effective at later stages (i.e., associative and autonomous stages) (Baker, 1999)

Visual Motor Integration

- Beery (2004) defined it as the *coordination between visual perception and movement of fingers (motor)*, which is measured by a copying forms task in the *Beery-Buktenica Developmental Test of Visual-Motor Integration* (VMI; Beery, 2004)

Visual Motor Integration

- Several studies have found visual–motor integration to be:
  - one of the most important predictors of handwriting performance, with strong correlations documented between visual–motor integration and writing legibility (Case-Smith,& O'Brien, 2010; Cornhill & Case-Smith,1996); Daly, Kelley, & Krauss,2003; Maeland, 1992; Tseng & Cermack, 1993; Volman et al., 2006; Weil & Amundson, 1994)
- Visual motor integration correlates with printing readiness
  - Children should be able to copy (not imitate) 9 pre-requisite shapes before they are ready to easily learn how to print letters (Beery, Beery, & Buktenica, 2004; Case-Smith & O'Brien, 2010) Daly, Kelley& Krauss, 2003; Weil & Amundson, 1994)

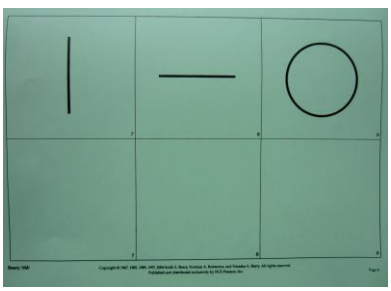
Visual Motor Integration

These 9 forms are usually developed in the order listed:

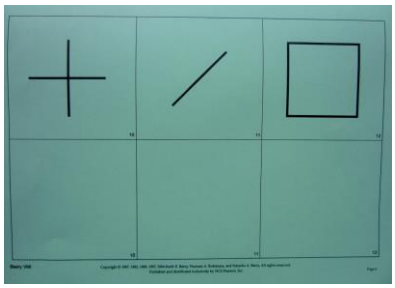
- Vertical line |
- Horizontal line —
- Circle O
- Cross +
- Down left diagonal /
- Square □
- Down right diagonal \
- Oblique cross x
- Triangle Δ

- For more info about "Printing Readiness Skills" check out our CDR website

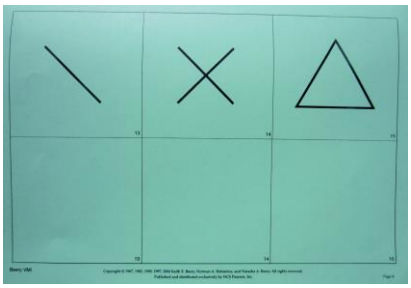
Beery Test of Visual Motor Integration



Beery Test of Visual Motor Integration



Beery Test of Visual Motor Integration



Current Evidence for Handwriting

- While a multisensory approach to handwriting used to be recommended, accumulating evidence suggests that a cognitive, task-specific approach is more effective (Zwicker & Hadwin, 2009; Denton et al., 2006; Weintraub et al., 2009; Mackay et al., 2010; Howe, 2013)

Cognitive strategies improve printing

- Effective strategies:
  - Numbered arrow cues (Berninger et al., 1997)
  - Recalling letter formation from memory (Graham et al., 2000)
  - Self-instruction/verbal mediation (Graham et al., 2000; Miller et al., 2001)
  - Self-monitoring & evaluation (Graham et al., 2000)
  - Task-specific (Hoy et. al., 2011; Jongmans et al., 2003; Miller et al., 2001)

Printing Like a Pro!

- Printing program developed in partnership between a clinician scientist and occupational therapist, both with experience in school-based practice
- Based on motor learning theory and current evidence for handwriting intervention
- Developed out of need for an evidence-based, easy to use, readily available printing program for therapists, schools, and families

Development of Printing Like a Pro!

- Search Results/Evidence Based Practice Findings (early 1990's):
  - Multisensory approach:
  - Developmental Progression:
  - Program Development:
    - Program handout
    - Letter worksheets

Development of Printing Like a Pro!

- New Knowledge:
  - Cognitive Approach to Handwriting Intervention (Zwicker & Hadwin, 2005)
  - Literature Search (see Montgomery & Zwicker, 2011 for a summary)
- Plus clinical practice and consumer feedback (i.e., School Staff) resulted development of Printing Like a Pro!

Sunny Hill Health Centre for Children
Therapy Department

Printing Like a Pro!

A Cognitive Approach to
Teaching Printing to
Primary School Aged Children

(For School Staff)

Developed by Ivonne Montgomery, Occupational Therapist,
Edited by Jill Zwicker, PhD, OT(C)

Population

- Primary years (grade 1 and 2)
- Mild motor impairments
  - High incidence or uncategorized: e.g., DCD or LD
  - Low incidence: e.g., Down Syndrome, Autism Spectrum Disorder, students with Chronic Health designations

Service Delivery

- Occupational Therapy is provided in a Consultative model to designated students
- Designed for one to one, small group work or entire classroom use
- Plus:
  - Adaptations and Modifications
  - Follow up

Applying Motor Learning Theory to Printing Like a Pro!

1. Cognitive Stage of Learning

Cognitive Strategies Used in Cognitive Stage Learning

- 3 Key features:
  - Visual cues : numbered arrows
  - Self talk: i = down • lift • dot
  - Self evaluation: "circle your best 3 letters"

Visual Cues

- Numbered arrows cues:
  - show order and direction of stroke for each letter (Berninger et al.,1997; Graham 2009; Graham, Harris & Fink, 2000; Zwicker & Hadwin, 2009)

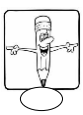
Self-Talk

i = down •lift • dot

- A learning strategy that uses verbal mediation to guide letter formation (Zwicker & Hadwin, 2009)
- Verbalization of directions of proper letter formation/direction of movement (Graham et al., 2000; Graham & Weintraub, 1996; Weintraub et al., 2009; Zwicker & Hadwin, 2009)
- Repeat the same set of directions each time using "Rote scripts" (Toglia et al., 2012)
- Later fade out use as printing becomes more automatic -" temporary crutch" (Graham & Weintraub, 1996)

Self-Evaluation

- Encourage student to circle best formed letters based on set criteria for *each* letter (Graham & Weintraub, 1996; Graham et al., 2000; Jones & Christensen, 1999; Weintraub et al., 2009; Zwicker & Hadwin, 2009)
- It is important for the student to look at their work to see how closely their letter formation matches the target letter – with adult guidance



Practice

- *Learning through repeated handwriting practice* – is essential for development and retention of motor learning of handwriting
- *Blocked practice* of the same letter is indicated to increase performance, as the student needs to practice the *same* movement many times; through trial and error and numerous attempts to complete the task, the student begins to develop successful movement patterns (Poole, 1991)

Practice

- Appropriate frequency and intensity of practice is key: short, more frequent lessons several times a week (or daily), with 75-100 minutes a week devoted to handwriting instruction (Denton et al., 2006; Graham, 2009)
- This evidence reflects neuroscience literature indicating that *specificity* (handwriting practice) and *intensity* are key elements to induce neuroplastic change (Kleim & Jones, 2008)
- Neuroplastic change is required to produce the "relatively permanent change" associated with motor learning (Schmidt & Lee, 2005)

Additional Key Features

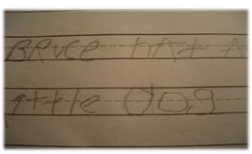
- **Modeling/Demonstration:**
  - Model how to form each letter using a chalkboard or white board (Graham et al., 2000; Graham & Weintraub, 1996; Weintraub et al., 2009; Zwicker & Hadwin, 2009)
  - Verbal Modeling: describe out loud how to form each letter (Graham & Weintraub, 1996; Graham et al., 2000; Zwicker & Hadwin, 2009)
- **Practice:** first imitation, then copying (Graham, 2009; Zwicker & Hadwin, 2009)
- **Memory retrieval:** writing the letter from memory (Berninger, 1997; Graham, 2009; Zwicker & Hadwin, 2009)

Additional Key Features

- Start each lesson with a review or warm-up (MacKay et al., 2010)
- Document which letters are tricky for the student and focus extra on those (Graham, 2009)
- Encourage students to slow down – legibility occurs before speed (Hoy et al., 2011)

Additional Key Features

- Teach lower case letters first, then uppercase (Jones & Christensen, 1999; Graham et al., 2000; Graham 2009; Zwicker & Hadwin, 2009)
- Lower case letters are used more in classroom printing (and in reading) than upper case (Berninger, et al., 2009)
- Example of "letter case confusion"

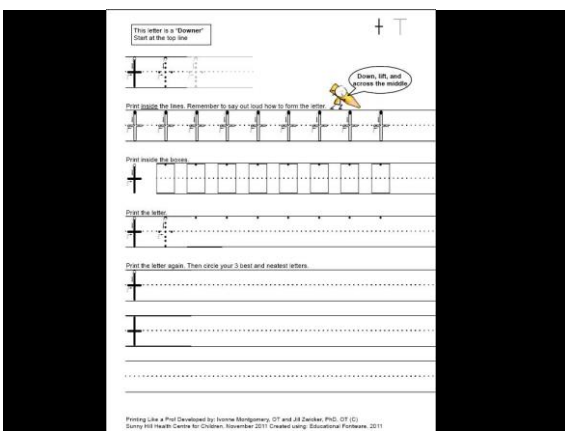


Additional Key Features – Teach lower case first!

- Lasting effects of learning upper case first (adult writing sample)

Additional Key Features

- Can use a variety of writing implements including chalk, followed by use of letter worksheets (Denton et al., 2006; Graham & Weintraub, 1996; Weintraub et al., 2009)
- Letter Worksheets:
  - Created using : Educational Fontware 2011
  - One letter per page (Graham et al.,2000, Zwicker & Hadwin, 2009)



Developmental progression

- Organized in a developmental progression of "letter groupings" (Beery & Beery, 2004)
- Each group's letters are:
  - Labeled/titled e.g., " Downers" (Weintraub et al., 2009; Mackay et al., 2010; Graham et al., 2000; Zwicker & Hadwin, 2009)
  - Formed the same way and share common formational characteristics – thought to reinforce correct motor patterns for letter formation (Graham, 2009; Zwicker & Hadwin, 2009)

Developmental progression

- Letters that are easier to form are introduced before more difficult ones (Beery & Beery, 2004; Graham, 2009)
- Recursive learning: If possible, ordered so that each letter motor pattern builds on the next
- Also grouped based on similar verbal self talk and elaboration of self talk
- Additionally - letters that could be easily confused or reversed are not in the same group:
  - e.g., u and n or d and b

Developmental Groupings - Lower case letters

- **Downers** l i t f (Group 1)
- **Rounders** c o e a d (Group 2)
- **Curvers (special)** s u (Group 3)
- **Curvers** r n m h b (Group 4)
- **Diggers** j g q p (Group 5)
- **Sliders** v w y x z k (Group 6)

easiest

most difficult

2. Associative Stage

Associative Stage

- In the *associative stage*, learners begin to refine their skills and through continuous practice and repetition, the learner's movements become more consistent, and errors begin to decrease (Poole, 1991)
- To facilitate handwriting development in the *associative stage* learning, a second set of classroom friendly worksheets was developed (*letter group review* - non random and random order - as well as *word* practice)

Review and Word Worksheets

- Practice using the *associative stage worksheets* occurs once a student is able to form individual letters using correct letter formation
- This second set is aimed at providing additional practice within letter groupings (review worksheets) to further focus on consistency in letter formation as well all components of legibility
- Continue to focus on good legibility (form, closure, quality, alignment, height and size of letters as well as spacing)

Practice - Random

- *Random* practice is felt to be most effective for students in the later stages (*associative stage*) of refining an already learned skill (Baker, 1999)
- Use of random /variable practice conditions:
  - yields better retention (Baker, 1999)
  - can facilitate generalization and transfer of motor skills to the naturalistic (classroom) environment (Poole, 1991; Baker, 1999)
- Therefore, random order of practice of individual letters was incorporated into the letter review worksheets

Practice – Word worksheets

- Additionally, after each letter group review practice, students can begin to combine all skills learned in practice of handwriting words (as per letter groupings), for best carryover (Graham et al., 2000; Graham, 2009)
- Handwriting word practice reinforces letter formation and generalization to the printed word (Graham et al., 2000; Graham, 2009; Montgomery & Zwicker, 2011)

Words used in worksheets:

- The majority words utilized in the worksheets are:
  - Sitton's High –Frequency Writing Words list
  - Dolch word list
  - Common words in the English language list

Word Worksheets

- The words were selected with extensive consultation with experienced educators
- High frequency words were chosen to reinforce early reading skills
- Initial words are short, simple, and very easy to read and write
- The words were grouped in "word families" whenever possible
- Over the course of the worksheets, the words become more challenging to read and write

Fading of explicit visual cues

- During the *associative stage, less guidance* is provided and the student is allowed to make errors so that he or she can learn to adjust subsequent movements independently (Poole, 1991)
- Therefore, on the second set of worksheets guidance and explicit visual cues are gradually faded (i.e., numbered arrows, dotted interline)
- Additionally, reliance on self-talk (speech bubble) is faded to self-thought (thought bubble) and to no instructional cuing for letter formation

Self-Correction

- Feedback should be more precise, but it should start to decrease so that the learner becomes less dependent on it in the *associative stage* (Poole, 1991)
- To decrease reliance on feedback from the therapist or teacher, students are encouraged to develop their own *error-detection mechanisms* (Weinstein, 1987 as cited in Poole, 1991)
- Learning from errors is thought to promote generalization to similar motor tasks (Zwicker & Harris, 2009)

Self-Correction

- Therefore, in the second set of worksheets, the student is requested to not only circle their best formed letters (*self-evaluation*)
- but also requested to "redo" a poorly written letter or word to match the target letter, therefore utilizing both *error-detection and self-correction*

Review and Word Practice Worksheets

- These worksheets have been designed in 3 phases of practice:
  - Phase 1 - Non-random letter review: Review practice of all letters within a group in the same order as before
  - Phase 2 – Random letter review: Random review practice of all letters within a group
  - Phase 3 – Word practice: Word printing practice using all letters within a group

Developmental Groupings - UPPER CASE letters

Downers (Group 1)	**L T I H F E**	easiest
Rounders (Group 2)	**C O Q G**	
Curvers (special) (Group 3)	**S U J**	
Curvers (Group 4)	**P B R D**	
Sliders (long) (Group 5)	**V W X A N M Z**	
Sliders (short) (Group 6)	**Y K**	most difficult

3. Autonomous Stage

Autonomous stage

- Automatic, legible handwriting allows fluent writing and enables more advanced composition (Berninger et al, 1997)
- Automaticity in handwriting is of key importance in composing (Medwell & Wray, 2008)
- Handwriting needs to be at an autonomous level so that a student is free to concentrate on spelling, and to focus on higher-level thought, written expression, and content (Sheffield, 1996)

Autonomous stage

- The skill requires little, if any, cognitive processing, so it is less susceptible to interference from other ongoing activities or distractions in the environment (Poole, 1991)
- Once letter formation and legibility components have become automatic, the student can print while either processing auditory directions or cognitively composing
- Instructions and learning in this phase focus on a particular aspect of the skill (Poole, 1991)

Autonomous stage

- Therefore, as long as some parts of the skill are automatic, the student can focus on other aspects of performance (Poole, 1991)
- The student will be able to print while composing his thoughts and functional practice should be focused on increasing speed without sacrificing accuracy

Autonomous stage

- At this stage, learning is transferred through writing practice in the classroom
- Additionally, *Printing Like a Pro!* "skill boosting" worksheets can be used (i.e., Number worksheets, Functional Words); gradually progressing to narrower width paper (all available from the website)
- These were all developed to focus on classroom friendly activities to further increase legibility and especially to increase speed

Reuse of worksheets

- Laminate or use page protectors
- Use with overhead fine tip markers (wipe clean with a wet paper towel)

Handwriting Instruction

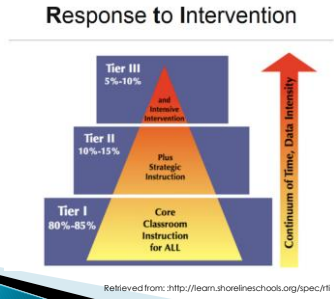
- Most primary teachers provide handwriting instruction (average of 70 minutes per week) (Graham et al., 2008)
- Only 12% of teachers report receiving adequate preparation to teach handwriting (Graham et al., 2008)
- Standards in handwriting instruction are not consistent between schools, grades or classrooms (Donica, 2010)
- Variability in type of handwriting instruction and instructional procedures (Graham et al., 2008)
- Handwriting tools and booklets are often not based on research evidence and best practice

Importance of Handwriting Instruction

- Focus of handwriting instruction and intervention should be on achieving:
  - Automatic legible handwriting, as this is an essential basis for written expression (Sheffield, 1996)
  - Research consistently supports that students, especially those who struggle with handwriting, benefit from carefully planned, explicit, and direct handwriting instruction (Case Smith et al., 2011; Donica, 2010; Graham, 2009; Graham, Harris, Mason, Fink- Chorzempa, Moran & Saddler, 2008; Hoy et al., 2011; Sheffield, 1996)

Response To Intervention (RtI)

- Pyramid of intervention /response to intervention



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Response To Intervention (RtI)

- RtI is a proactive, multi-tiered method of service delivery in which all students are provided an appropriate level of evidence-based instruction according to their academic and behavioral needs (Barnes & Harlacher, 2008).
- Printing Like a Pro! can be used at all 3 levels of intervention

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Multi-tiered Instruction

- The nature of the academic intervention changes at each tier, becoming more intensive as a student moves across the tiers
- Increasing intensity is achieved by
  - Using more teacher centred systematic and explicit (e.g., scripted) instruction
  - Conducting intervention more frequently
  - Adding to duration of intervention
  - Creating smaller and more homogenous student groupings
  - Relying on instructors with greater expertise

(Fuchs & Fuchs, 2006)

Tier 1 – All students

- In the classroom (80-90%)
  - Delivered by classroom teacher
  - Differentiated instruction
  - Research and evidence based practice
  - Integrated
  - Available to all students with a focus on maximizing support for those "not yet" and "approaching" expectations

Tier 2 - Students "Not yet meeting expectations or approaching"

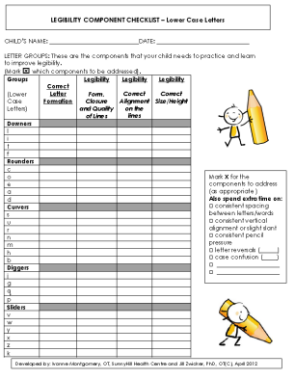
- Small group or individual work (10-15%)
- Require supplemental intervention (e.g., "Printing Club" or small Resource Room groups or individual teaching) (delivered by classroom teacher or support teacher)
- This supports what is taught in the classroom (in addition to but not instead of - allows for continuity)
- Occupational Therapy – prescribes targeted intervention use of the Printing Like a Pro! Program (for students eligible for OT) with ongoing monitoring

Tier 3 – Students "Not yet meeting expectations"

- 1-5% will require supplemental intensive intervention as they do not respond to Tier 2 intervention
- Provided in addition to classroom instruction
- Delivered by a specialist teacher in an intensive manner
- Must support what is being taught in the classroom – need continuity between environments
- Individualized instruction targeting specific learning needs
- Occupational Therapy – prescribes targeted intervention use of the Printing Like a Pro! Program (for students eligible for OT) with ongoing monitoring

Legibility Checklist and Practice Chart

Legibility Component Checklist – for Targeted Intervention (for Students eligible for OT services)


LEGIBILITY COMPONENT CHECKLIST – Lower Case Letters

CHILD'S NAME:_____ DATE:_____

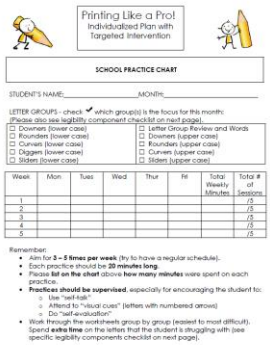
LETTER GROUPS: These are the components that your child needs to practice and learn to improve legibility.
Mark ☒ which components to be addressed.

Groups (Lower Case Letters)	Correct Letter Formation	Legibility Form, Closure and Quality of Lines	Legibility Correct Alignment on the lines	Legibility Correct Size/Height
Dawsen				
i				
t				
j				
w				
Reunden				
c				
o				
a				
d				
Curven				
s				
u				
r				
n				
m				
h				
b				
Diggers				
k				
g				
q				
p				
Sliders				
v				
w				
y				
x				
z				
k				

Mark ☒ for the components to address (as appropriate)
Also spend extra time on:
☐ consistent spacing between letters/words
☐ consistent vertical alignment or slant
☐ consistent pencil pressure
☐ letter reversals (____)
☐ case confusion (____)
☐ _____
☐ _____

Developed by: Ivonne Montgomery, OT, Sunnybrook Health Centre and Jill Zwicker, PhD, OT(C), April 2012

School Practice chart


Printing Like a Pro!
Individualized Plan with Targeted Intervention

SCHOOL PRACTICE CHART

STUDENT'S NAME:_____ MONTH:_____

LETTER GROUPS - check ✔ which group(s) is the focus for this month:
(Please also see legibility component checklist on next page).

☐ Dawsers (lower case)	☐ Letter Group Review and Words
☐ Rounders (lower case)	☐ Dawsers (upper case)
☐ Curvers (lower case)	☐ Rounders (upper case)
☐ Diggers (lower case)	☐ Curvers (upper case)
☐ Sliders (lower case)	☐ Sliders (upper case)

Week	Mon	Tues	Wed	Thur	Fri	Total Weekly Minutes	Total # of Sessions
1							/5
2							/5
3							/5
4							/5
5							/5

Remember:
- Aim for **3 – 5 times per week** (try to have a regular schedule).
- Each practice should be **20 minutes long**.
- Please **list on the chart** above **how many minutes** were spent on each practice.
- **Practices should be supervised**, especially for encouraging the student to:
  - Use "self-talk"
  - Attend to "visual cues" (letters with numbered arrows)
  - Do "self-evaluation"
- Work through the worksheets group by group (easiest to most difficult). Spend **extra time** on the letters that the student is struggling with (see specific legibility components checklist on next page).

Certificates of Achievement

Certificates of Achievement


Certificate of Achievement

_____
is now able to print:
Diggers like a Pro!

Keep up the good work!

Teacher's Name:_____
Date:_____

Level Specific


Certificate of Achievement

_____
is now able to print:
Slider
Review Letters & Words
like a Pro!

Keep up the good work!

Teacher's Name:_____
Date:_____

Level Specific

Certificates of Achievement


Certificate of Achievement

_____
is now able to print:
_____ like a Pro!

Keep up the good work!

Teacher's Name:_____
Date:_____

Customizable


Certificate of Achievement

_____
is now able to
Print Like a Pro!

Congratulations!

Teacher's Name:_____
Date:_____

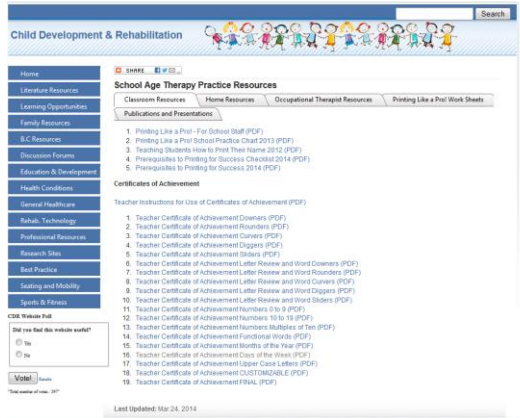
Final

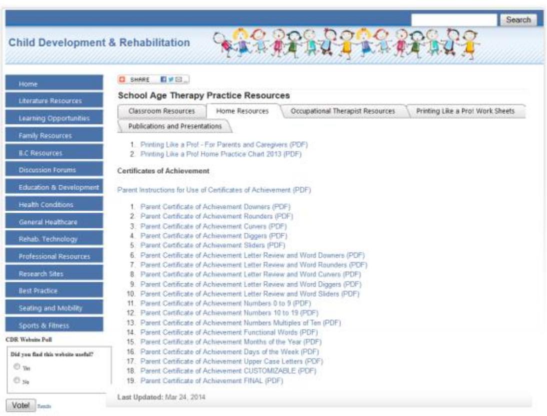
School vs. Parent Version

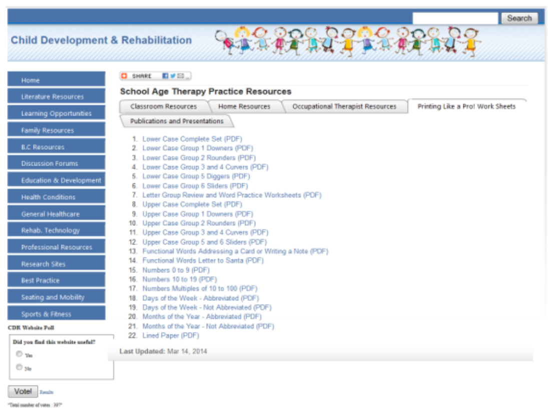
- Developed 2 versions of the Instruction Sheet for Use
  - School staff – Teachers and SEAs
  - Parent and Caregiver
- Slightly different content and writing level/implied knowledge
- Worksheets are the same
- Ideal to use both - at home and at school

CDR Website

- The school and home versions are available on the CDR website :
- http://www.childdevelopment.ca/School-Age_Therapy_Practice_Resources.aspx







Summary

- Task specific practice
- Graded approach
- Intensity very important
- Legibility before speed
- Cognitive supports that gradually fade

Other Printing Programs

- There are other programs out there
- Sunny Hill would like to add this "Evidence Based Practice" resource to the mix
- Provides for consumer choice

For questions please email imontgomery@cw.bc.ca

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