

## Resources for Teaching and Assessing Handwriting

### ***Examples of Evidence-Based Instructional Resources for Handwriting***

1. The Zaner-Bloser Handwriting Program, the oldest in the US, provides instruction materials by grade, pre-K to grade 6. [www.zanerbloser.com/fresh/handwriting-overview.html](http://www.zanerbloser.com/fresh/handwriting-overview.html) (Also see for spelling programs) Can be used for classroom instructional program for all.
2. Slingerland®Institute for Literacy see [www.slingerland.org](http://www.slingerland.org) Can be used with students who struggle with handwriting.
3. Berninger (1998a) *Guides for Intervention—Reading and Writing* and (1998b) *Handwriting Lessons*.

### **Evidence-Based Linking Handwriting Instruction to Spelling and Composing and Reading Instruction**

Berninger, V., & Abbott, S. (2003). *PAL Reading and Writing Lessons and Resources including Talking Letters*.

### **Evidence-Based Spelling Instruction with Orthographic, Phonological, and Morphological Activities**

Fry, E. (1996). *Spelling book: Grades 1 to 6: Words most needed plus phonics*. Westminster, CA: Teacher Created Materials.

### ***Examples of Evidence-Based Assessment Resources for Handwriting***

1. Barnett, A., Henderson, S., Scheib, B., & Schulz, J. (2007). *Detailed Assessment of Speed of Handwriting (DASH)*. UK and US: Pearson. Grades 9 to 16 DASH 17 for older students.
2. Berninger, V. (2007a), *Process Assessment of the Learner, 2nd Edition. K to 6 Diagnostic for Reading and Writing (PAL-II RW)* for assessing handwriting and related writing and working memory skills and *Diagnostic for Math (PAL-II M)* for assessment of writing numerals and written math calculation (Berninger, 2007b), and *User's Guide for each kit* (CD format ISBN 0158661818) *Formerly*, San Antonio, TX: The Psychological Corporation. Now Pearson.

### **More Resources for Assessing and Teaching Students with Dysgraphia and Other Specific Learning Disabilities or Challenges**

- Berninger, V. W. (2015). *Interdisciplinary frameworks for schools: Best professional practices for serving the needs of all students*. Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/14437-002> Companion Websites with Readings and Resources and Advisory Panel. All royalties go to Division 16 to support these websites and develop future editions.
- Berninger, V., & Wolf, B. (2016, second printing, 2019). *Teaching students with dyslexia, dysgraphia, OWL LD, and dyscalculia: Lessons from teaching and science, Second Edition*. Baltimore: Paul H. Brookes. Also available as e-book.
- ON LINE JUST THE FACTS for INTERNATIONAL DYSLEXIA ASSOCIATION  
Understanding Dysgraphia 2008 (Berninger) Updated 2012 (Berninger & Wolf)  
Website: <http://www.interdys.org> Click on Fact Sheets What is Dysgraphia?
- Berninger, V., & Richards, T. (2015, October). Research confirms what many teachers know: Learning disabilities is a plural word. *Examiner*, International Dyslexia Association.
- Wolf, B., & Berninger, V. (2015, March 20). Specific learning disabilities: Plural, definable, diagnosable, and treatable. *Dyslexia Connections*, International Dyslexia Association Newsletter for Parents.
- Berninger, V. & Morphy, P. (2015, December). Posted article on *The SES Indicator* (<http://www.apa.org/pi/ses/resources/indicator/>). American Psychological Association.

**Cited Research in Red**  
**(in the order referenced in the presentation)**

- Duncan, G., and Murnane, R. (Eds.) (2011). *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances*. New York: Russell Sage Foundation.
- Katusic, S.K., Colligan, R.C., Weaver, A.L., & Barbaresi, W.J. (2009). The forgotten learning disability- Epidemiology of written language disorder in a population-based birth cohort (1976-1982), Rochester, Minnesota. *Pediatrics*, *123*, 1306-1313.
- Abbott, R., & Berninger, V. (1993). Structural equation modeling of relationships among developmental skills and writing skills in primary and intermediate grade writers. *Journal of Educational Psychology*, *85*(3), 478-508.
- Richards, T., Berninger, V., Stock, P., Altemeier, L., Trivedi, P., & Maravilla, K. (2009). fMRI sequential-finger movement activation differentiating good and poor writers. *Journal of Clinical and Experimental Neuropsychology*, *29*, 1-17. To link to this Article: DOI: 10.1080/13803390902780201 URL: <http://dx.doi.org/10.1080/13803390902780201>
- Lashley, K. S. (1951). The problem of serial order in behavior. In L. A. Jeffress (Ed.), *Cerebral mechanisms in behavior* (pp. 112–131). New York: Wiley.
- Richards, T., Berninger, V., Stock, P., Altemeier, L., Trivedi, P., & Maravilla, K. (2011). Differences between good and poor child writers on fMRI contrasts for writing newly taught and highly practiced letter forms. *Reading and Writing*, *24*(5), 493-516.
- Berninger, V., Richards, T., Nielsen, K., Dunn, M., Raskind, M., & Abbott, R. (2018, August 15). Behavioral and brain evidence for language by ear, by mouth, by eye, and by hand and motor skills in literacy learning. *International Journal of School and Educational Psychology*. <https://doi.org/10.1080/21683603.2018.1458357> NIHMS 985784
- Berninger, V. W. (2015). *Interdisciplinary frameworks for schools: Best professional practices for serving the needs of all students*. Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/14437-002> Companion Websites with Readings and Resources and Advisory Panel.
- Berninger, V., Vaughan, K., Abbott, R., Abbott, S., Brooks, A., Rogan, L., Reed, E., & Graham, S. (1997). Treatment of handwriting problems in beginning writing: Transfer from handwriting to composition. *Journal of Educational Psychology*, *89*, 652-666.
- Berninger, V., Rutberg, J., Abbott, R., Garcia, N., Anderson-Youngstrom, M., Brooks, A., & Fulton, C. (2006). Tier 1 and Tier 2 early intervention for handwriting and composing. *Journal of School Psychology*, *44*, 3-30.
- James, K., Jao, J. R., & Berninger, V. (2015). The development of multi-leveled writing systems of the brain: Brain lessons for writing instruction. MacArthur, C., Graham, S., & Fitzgerald, J. (Eds.), *Handbook of Writing Research* (pp. 116-129). New York: Guilford.

- Berninger, V., Dunn, A., Lin, S., & Shimada, S. (2004). School evolution: Scientist-practitioner educators creating optimal learning environments for ALL students. *Journal of Learning Disabilities*, 37, 500-508.
- Altemeier, L., Jones, J., Abbott, R., & Berninger, V. (2006) Executive factors in becoming writing-readers and reading-writers: Note-taking and report writing in third and fifth graders. *Developmental Neuropsychology*, 29, 161-173.
- Richards, T., Peverly, S., Wolf, A., Abbott, R., Tanimoto, S., Thompson, R., Nagy, W. and Berninger, V. (2016, October 1; July 22 on line). Idea units in notes and summaries for read texts by keyboard and pencil in middle childhood students with specific learning disabilities: Cognitive and brain findings. *Trends in Neuroscience and Education*., 5, 146-155. Pub ID TINE73 <http://www.journals.elsevier.com/trends-in-neuroscience-and-education/>NIHMSID 806920
- Berninger, V., & Winn, W. (2006). Implications of advancements in brain research and technology for writing development, writing instruction, and educational evolution. In C. MacArthur, S. Graham, & J. Fitzgerald (Eds.), *Handbook of writing research* (pp. 96-114). New York: Guilford.
- Wolf, B., Berninger, V., & Abbott, R (2017). Effective beginning handwriting instruction: Multimodal, consistent format for 2 years, and linked to spelling and composing. *Reading and Writing. An Interdisciplinary Journal*, 30 (2), 299–317. DOI: 10.1007/s11145-016-9674-4 2016, July 23 'Online First' <http://link.springer.com/article/10.1007/s11145-016-9674-4> Pub Med: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5300752>
- Alstad, Z., Sanders, E., Abbott, R., Barnett, A., Hendersen, S., Connelly, V., & Berninger, V. (2015). Modes of alphabet letter production during middle childhood and adolescence: Interrelationships with each other and other writing skills. *Journal of Writing Research*, 6(3), 199-231. <http://www.jowr.org/next.html> <http://dx.doi.org/10.17239/jowr-2015.06.03.1PMC4433034>
- Berninger, V., Abbott, R., Augsburger, A., & Garcia, N. (2009). Comparison of pen and keyboard transcription modes in children with and without learning disabilities affecting transcription. *Learning Disability Quarterly*, 32, 123-141.
- Hayes, J. R., & Berninger, V. (2010). Relationships between idea generation and transcription: How act of writing shapes what children write. In C. Brazerman, R. Krut, K. Lunsford, S. McLeod, S. Null, P. Rogers, & A. Stansell (Eds.), *Traditions of Writing Research* (pp 166-180). New York: Taylor and Frances/Routledge.
- Thompson, R., Tanimoto, S, Abbott, R., Nielsen, K., Geselowitz, K., Lyman, R., Habermann, K., Mickail, T., Raskind, M., Peverly, S. Nagy, W., & Berninger, V. (2016, July 19, on line). Relationships between language input and letter output modes in writing notes and summaries for students in grades 4 to 9 with persisting writing disabilities. *Assistive Technology Journal*. DOI: 10.1080/10400435.2016.1199066 Link for on line published paper:

<http://www.tandfonline.com/doi/full/10.1080/10400435.2016.1199066>public access  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5291827>

- Berninger, V. W. (2015). *Interdisciplinary frameworks for schools: Best professional practices for serving the needs of all students*. Washington, DC: American Psychological Association. <http://dx.doi.org/10.1037/14437-002> Companion Websites with Readings and Resources and Advisory Panel. All royalties go to Division 16 to support these websites and develop future editions.
- Berninger, V., & Wolf, B. (2016, second printing, 2019). *Teaching students with dyslexia, dysgraphia, OWL LD, and dyscalculia: Lessons from teaching and science, Second Edition*. Baltimore: Paul H. Brookes. Also available as e-book.
- Abbott, R., Raskind, W., Matsushita, M., Richards, T., Price, N., & Berninger, V. (2017, June 19). Patterns of biomarkers for three phenotype profiles of persisting specific learning disabilities during middle childhood and early adolescence: A preliminary study. *Biomarkers and Genes*, 1 (1), 1-10. An open access journal. doi: 10.15761/BG.1000103 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6407889>
- Richards, T., Aylward, E., Raskind, W., Abbott, R., Field, K., Parsons, A., Richards, A., Nagy, W., Eckert, M., Leonard, C., & Berninger, V. (2006). Converging evidence for triple word form theory in children with dyslexia. *Developmental Neuropsychology*, 30, 547-589.
- Venezky, R. (1999). *The American way of spelling*. New York: N.Y. Guilford Press.
- Henry, M. (1990). *Words: Integrated decoding and spelling instruction based on word origin and word structure*. Austin, TX: PRO-ED.
- Henry, M.K. (2010). *Unlocking literacy: Effective decoding and spelling instruction* (2<sup>nd</sup> ed.). Baltimore MD: Paul H. Brookes.
- Traweek, D., & Berninger, V. (1997). Comparison of beginning literacy programs: Alternative paths to the same learning outcome. *Learning Disability Quarterly*, 20, 160-168.
- Davidson, M., & Berninger, V. (2017, published January 12; posted on line, 2016, December 21). Thinking aloud during idea generating and planning before written translation: Developmental changes from ages 10 to12 in expressing and defending opinions. *Cogent Psychology*, 3(1), 1276514. Pages 1 to 16. Published by Taylor Francis <http://dx.doi.org/10.1080/23311908.2016.1276514> PubMed <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5305188>
- Niedo, J., Tanimoto, S., Thompson, R. Abbott, R., & Berninger, V. (2016). Computerized instruction in translation strategies for students in upper elementary and middle school grades with persisting learning disabilities in written language. *Learning Disabilities. A Multidisciplinary Journal*, 21, 62-78. Pub Med <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5489131>

- Niedo, J., & Berninger, V. W. (2016). Strategies typically developing writers use for translating thought into the next sentence and evolving text: Implications for assessment and instruction. *Open Journal of Modern Linguistics*, 6, 276-292.  
<http://dx.doi.org/10.4236/ojml.2016.64029>  
<http://www.scirp.org/journal/OJML/PubMed>  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5261381>
- MacArthur, C. A. (1999). Overcoming barriers to writing: Computer support for basic writing skills. *Reading and Writing Quarterly*, 15, 169-192.
- Berninger, V. (May/June 2012). Strengthening the mind's eye: The case for continued handwriting instruction in the 21<sup>st</sup> century. (pp. 28-31). *Principal*. National Association of Elementary School Principals. [www.naesp.org](http://www.naesp.org)
- Berninger, V. (2013, March). *Educating students in the computer age to be multilingual by hand*. Invited Commentary on "The Handwriting Debate" NASBE Policy Debate (2012, September) for National Association of State Boards of Education (NASBE), Arlington, VA. <http://www.nasbe.org/wp-content/uploads/Commentary-Handwriting-keyboarding-and-brain-development1.pdf>
- Richards T. L., Abbott, R.D., Yagle K., Peterson, D., Raskind, W. & Berninger, V. (2017, July 31). Self-government of brain's response to instruction informed by cingulo-opercular network for adaptive control and working memory components for language learning. *Journal of Systems and Integrative Neuroscience (JSIN)*, 3(4): 1-12. doi: 10.15761/JSIN.1000173 Open Access Text (OAT) NIHMSID 950037
-