



Now that I can read and write I can get a good job”: Teaching reading and writing to children with a developmental disability



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Dr Corinna Grindle

12th Special Education Day, 10th March, 2021

Autism, participation and learning focus on preschool and school

Overview of todays session

- Headsprout Early Reading
- Adapted Handwriting without Tears

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How are children with a developmental disability doing in school when it comes to learning to read?

Why are they underperforming?

- Teachers may struggle to know how best to teach reading
- Children may have **fewer opportunities** to learn
- Teachers may have **low expectations**



**“The key to solving the student achievement gap
is implementing evidence-based practice with
fidelity.”**

Stevan J. Kukic, Ph.D., Director, School
Transformation National Centre for Learning
Disabilities

A summary of reading research

Need to consider:

1. Content, knowledge and skills to be taught
2. Methods of instruction



1. Content, knowledge and skills to be taught

Five critical areas of reading:

1. Phonemic awareness
2. Phonics
3. Vocabulary
4. Fluency
5. Text comprehension

National Reading Panel, 2000

1. Content, knowledge and skills to be taught

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Systematic reviews (e.g., Browder et al, 2006)

- NRP guidelines not included
- Few evaluations of comprehensive reading programmes
- Sight reading focus



1. Content, knowledge and skills to be taught

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Why is using the sight-reading approach so popular?

- Default reading strategy for “visual learners”
- Early Success
 - alphabet
 - simple words



1. Content, knowledge and skills to be taught

What are the drawbacks with teaching sight reading?

- The method soon fails
- Simply too many words to recognise by sight
- Confidence collapses and children fall further behind

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2. Methods of effective reading instruction

Reading instruction needs to be more:

Explicit

- Sequential, comprehensive instruction
- Not leaving anything to chance

Intensive

- Many more learning opportunities
- Repeated practice important

e.g., Browder and Spooner, 2006



Overview of Headsprout Early Reading

What is Headsprout Early Reading?

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- **Commercially available**
internet-based reading
programme
- **80 episodes** (average 20
minutes)



Episodes 1-5:
Space World



Episodes 6-11:
Dino World



Episodes 12-23:
Sea World



Episodes 24-47:
Jungle World



Episodes 48-56:
Dino World



Episodes 57-66:
Sea World



Episodes 67-80:
Space World

1. Content, knowledge and skills to be taught

Component	Definition
Phonemic awareness	Recognising words are made up of different sounds, and being able to manipulate these sounds
Phonics	Learning how these sounds correspond to letters
Oral reading fluency	Fluently reading (accurately and with speed) text with expression
Vocabulary	Understanding words in text through linking with oral vocabulary
Comprehension	Directly teach strategies to comprehend text

2. Methods of effective reading instruction

Teaching strategies have extensive empirical support:

- Explicit, systematic and intensive instruction
- Adaptive instruction and error correction, responds to each individual learner



Publications

Behavioral Interventions

Behav. Intervent. (2013)

Published online in Wiley Online Library

(wileyonlinelibrary.com) DOI: 10.1002/bin.1364

TEACHING EARLY READING SKILLS TO CHILDREN WITH AUTISM USING MIMIOSPROUT EARLY READING

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A number of studies have demonstrated positive outcomes for typical learners from the internet-based reading program, MimioSprout® *Early Reading* (MER). In the present study, a preliminary evaluation of MER was conducted with four children with autism who attended an applied behavior analysis educational program in a school setting. The primary aim was to investigate whether it would be feasible to use MER with children with autism and whether any adaptations to the standard teaching procedure would be needed. A secondary aim was to investigate whether completing MER would improve early reading skills. When additional discrete-trial table top activities were designed to supplement each child's progress, every child was able to complete all 80 lessons and showed similar correct performance to that reported for typically developing learners. Results from a standardized test of reading ability showed an improvement in word recognition reading age for all children from 14 months to more than three years over the 14 weeks of teaching. A follow-up test showed that gains were maintained eight weeks after the end of the intervention. MER can be successfully used with children with autism and can improve their early reading skills. Copyright © 2013 John Wiley & Sons, Ltd.

There has been considerable interest in the use of applied behavior analysis (ABA) methods as a comprehensive early intervention model for children with autism in home and center-based or school-based settings. Recent systematic reviews and meta-analyses suggest positive outcome data, especially for cognitive, language, and adaptive skills (e.g., Eldevik et al., 2009, 2010; Reichow, 2012). In addition to a focus on social, language and other adaptive skills, ameliorating academic skill deficits is often a component of ABA programs. A total of 67% of children with an autism spectrum disorder (ASD) have been classified as learning disabled due largely to deficits in the acquisition of specific academic skills (e.g., Dickerson Mayes &

Grindle, C. F., Hughes, J. C., Saville, M., Huxley, K., & Hastings, R. P. (2013). Teaching children with autism to read using Headsprout Early Reading. *Behavioral Interventions*, 28, 203-224.

Grindle, C.F., Tyler, E., Murray, C., Hastings, R. P., & Lovell, M. (2019). Parent-mediated online reading intervention for children with Down Syndrome, *Support for Learning*, 34, 211-230.

Herring, E., Grindle, C.F., & Kovshoff, H. (2019). Teaching early reading skills to children with severe intellectual disabilities using Headsprout Early Reading, *Journal of Applied Research in Intellectual Disabilities*, 32, 1138-1148.

O Sullivan, D., Grindle, C. F., & Hughes, C. (2017). Teaching early reading skills to adult offenders with intellectual disability using computer delivered instruction. *Journal of Intellectual Disabilities and Offending Behavior*, 8, 122-131

Roberts-Tyler, E. J., Hughes, J. C. & Hastings, R. P. (2020). Evaluating a computer-based reading programme with children with intellectual disabilities: feasibility and pilot research. *Journal of Research in Special Educational Needs*, 20, 14-26

Tyler, E. J., Hughes, J. C., Wilson, M. M., Beverley, M., Hastings, R. P., & Williams, B. M. (2015). Teaching early reading skills to children with intellectual and developmental disabilities using computer-delivered instruction: a pilot study. *Journal of International Special Needs Education*, 18(1), 1-11.

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How do we know that HER is effective?

- Research programme at Bangor University and Warwick university spanning more than a decade
- Effective with young children, adolescents and adults with DD
- Parents can be trained to support children with the programme- not just school-based delivery
- Can improve reading skills for non-verbal children too
- Can improve reading for children with moderate to severe developmental disabilities
- Two RCTs show that Headsprout is more effective than “reading as usual”



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Handwriting Without Tears®

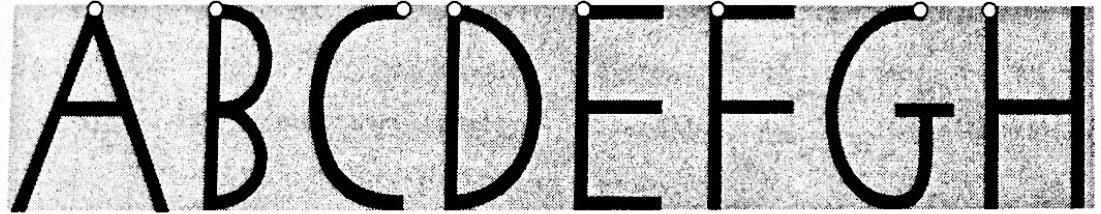
What is Handwriting without Tears?

- A comprehensive handwriting curriculum for foundation year (Pre-K) up to Year 6 (5th Grade)
- Designed by an Occupational Therapist



Capitals first

- All start at the top
- All the same size
- All the same position



A B C D E F G H

A diagram showing the first eight uppercase letters of the alphabet (A through H) in a serif font. Each letter is overlaid on a light gray rectangular background. A small white dot is placed at the top of each letter, indicating the starting point for writing. The letters are arranged in a single row, and their heights are consistent, demonstrating the 'Capitals first' principle.



a b c d e f g h

A diagram showing the first eight lowercase letters of the alphabet (a through h) in a serif font. Each letter is overlaid on a light gray rectangular background. A small white dot is placed at the top of each letter, indicating the starting point for writing. The letters are arranged in a single row, and their heights are consistent, demonstrating the 'Capitals first' principle.

Grouping Letters

- Letters are taught in groups of similar formation

Frog Jump Capitals

F E D P B R N M

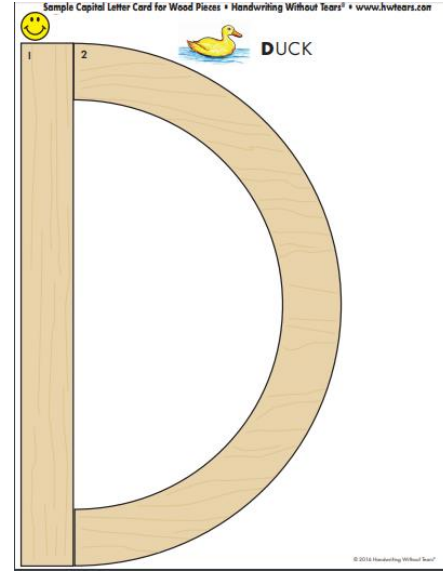


Starting Corner Capitals

H K L U V W X Y Z

Center Starting Capitals

C O Q G S A I T J



Wood Pieces

- Big line
- Little line
- Big curve
- Little curve



- Same as uppercase
- Magic c (including d)
- Transition group (rest of vowels & similar capitals)
- Diver letters (including b)
- Final group

Same as Capitals and t

c o s v w t

Magic c

a d g



Transition Group

u i e l k y j

Diver Letters

p r n m h b



Final Group

f q x z



Adaptations for children with a developmental disability – adapted HWT manual

- Condensed version of the programme
- Skills broken down further
- Suggestions for prompting and prompt fading
- Data collection suggestions
- Mastery criterion described

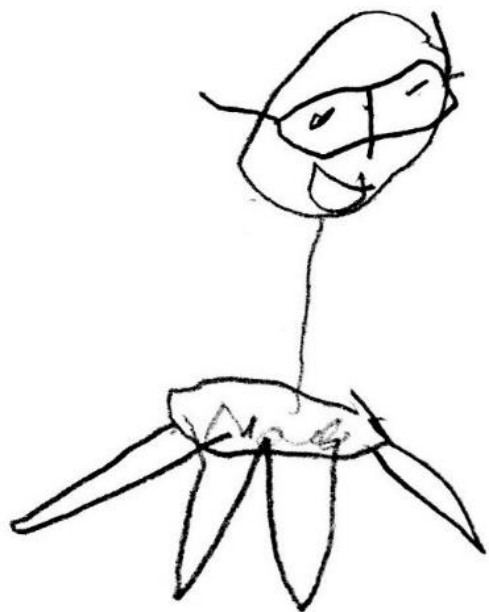
Teaching handwriting skills to
children with intellectual disabilities
using an adapted handwriting
programme

*CORINNA F. GRINDLE, RINA CIANFAGLIONE,
LIZ CORBEL, EMILY V. WORMALD,
FREDDY JACKSON BROWN,
RICHARD P. HASTINGS,
and J. CARL HUGHES*

Children with intellectual disabilities often struggle with handwriting, but there is very little research to inform intervention approaches. In this study, we developed a teaching manual based on Handwriting Without Tears®, a comprehensive handwriting programme designed for typically developing children. Three children with intellectual disabilities participated in the study and received handwriting instruction based on the manual three times a week over a 32-week period. Our aims were to explore whether Handwriting Without Tears® can be used as a comprehensive handwriting curriculum for children with intellectual disabilities and to evaluate improvement in handwriting skills. We found that the intervention was successfully incorporated into small group teaching sessions within the child's regular classroom, and that all three children made improvements. Our data show promising results and support the need for larger evaluation studies.

How do we know that adapted- HWT is effective?

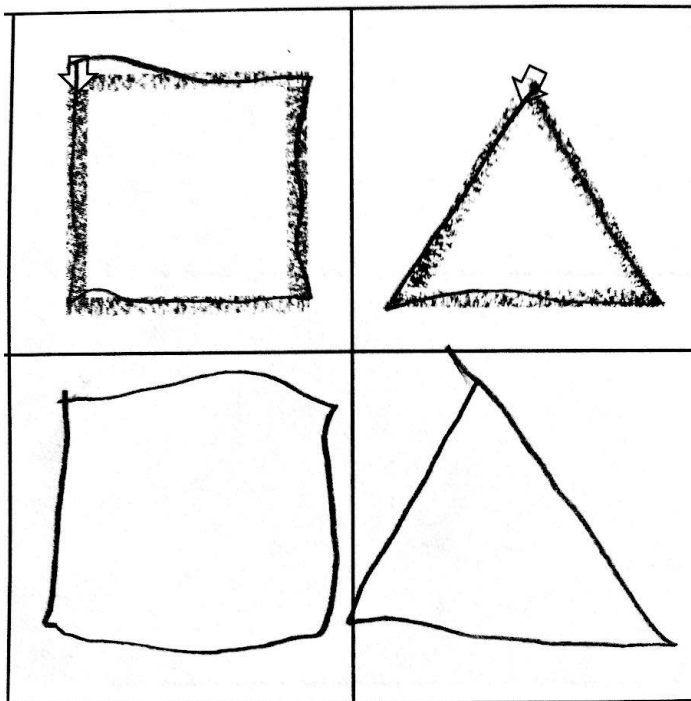
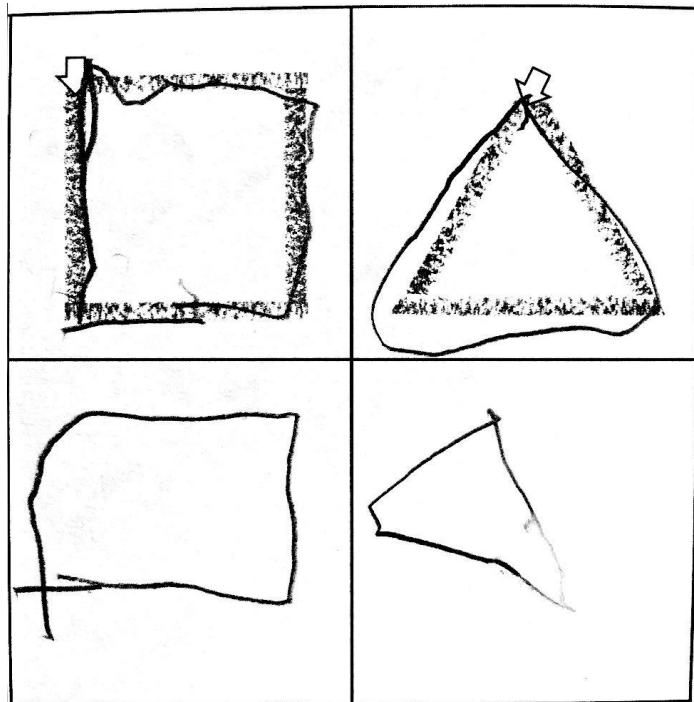
- It's early days but preliminary research suggests that adapted HWT can be effective at teaching handwriting and early drawing skills
- Teachers and Teaching Assistants can be trained to deliver
- Can be used as a “first” handwriting curriculum for young children or as a “catch up” for older children
- Can be used as an individualized handwriting programme or delivered to small groups

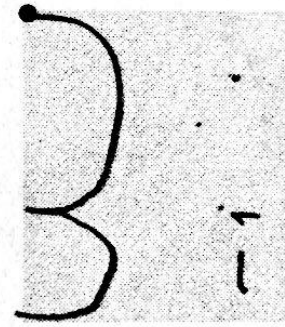
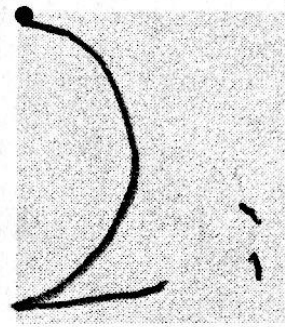
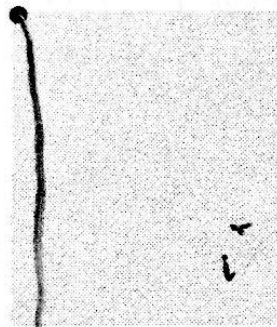
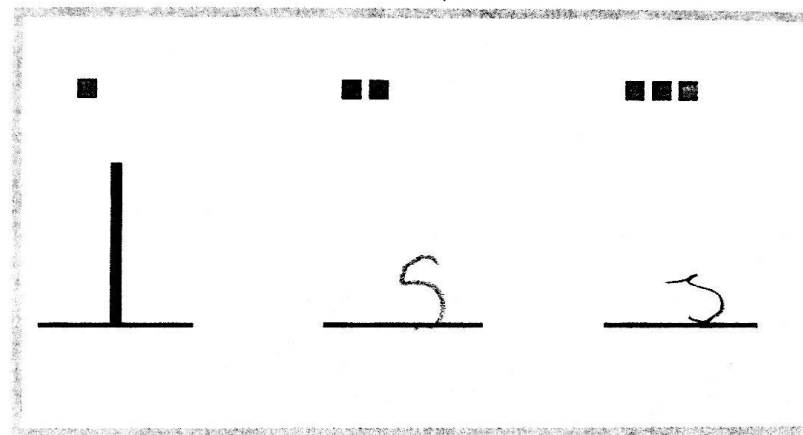


Before



After







**THANKS FOR
LISTENING!**

IT'S

**TIME FOR
QUESTIONS!**

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