Slide 1  
Developing decoding skills and fluency in braille reading  
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Slide 2  
Reading acquisition  
- Over-learning of the character shapes leading to automaticity in the decoding  
- Long-term memory to short-term memory to working memory  
Limitation in memory span for tactual-spatial information due to  
-- sequential encoding  
-- restricted tactual field of view

Slide 3  
Reading acquisition  
- Braille patterns are small and lack salient features  
- Limited availability of braille  
- Deficient knowledge of braille and tactile reading

Slide 4  
Braille reading observations  
Graph showing mean and median values of wpm for braille reading students in grade 2, 3 and 4. Number of students in grade 2 was 84, grade 3 95 and in grade 4 102. Mean values of wpm in grade 2: 33, grade 3: 38 and in grade 4: 42. Median values of wpm in grade 2: 29, grade 3: 34 and in grade 4: 33

Slide 5  
Braille reading observations, girls - boys   
Graph showing mean and median values of wpm for braille reading girls in grade 2, 3 and 4.  
Mean values, grade 2: 35, grade 3: 41 and grade 4: 49.  
Median values, grade: 2 30, grade 3: 35 and grade 4: 40.  
Graph showing mean and median values of wpm for braille reading boys in grade 2, 3 and 4.   
Mean values, grade 2: 28, grade 3: 34 and grade 4: 33.  
Median values, grade 2: 27, grade 3: 33 and grade 4: 30.

Slide 6  
Research questions for the study

Would a training method, originally developed for sighted students with reading and writing difficulties, reinforce the braille reader's decoding skills?

In what way have the reading skills developed as shown in measured values before and after the intervention?

In what way have the reading skills developed according to students’ and teachers’ own opinions?

Slide 7  
Study group  
All nine Braille reading students in third grade a certain year in Sweden  
Boys  
Adam, blind  
Bjorn, light perception  
Dennis, blind  
Gustav, blind  
Isac, blind  
Girls  
Cecilia, blind  
Erica, blind  
Frida, light perception  
Helen, light perception

Slide 8  
Features of the training method  
- Focus on decoding  
- Simple and clear structure  
- Short sessions  
- High intensity  
- Element of competition  
- Clear documentation

Slide 9  
Training Sessions  
- Peaceful and quiet environment   
- Three sessions per week  
- Each session consisting of six elements:  
single letters, two letter combinations, highly frequent words, highly frequent words, two letter combinations, single letters

One minute oral reading from each sheet of paper

Slide 10  
Intervention periods  
- Local teachers in charge of reading sessions and continuous documentation  
- Two periods: 7 + 7 weeks   
- Standardized word recognition test before, during and after each period  
- Teachers’ responses in a questionnaire

Slide 11  
Results   
Mean monthly growth, oral reading word recognition test   
The students’ monthly word reading growth, girls  
Cecilia 5.4  
Helen 4.2  
Erica 3.0  
Frida 2.2  
Monthly reading growth, sighted girls 1.7  
The students’ monthly word reading growth, boys  
Bjorn 5.0  
Adam 4.0  
Gustav 3.3  
Isac 2.7  
Dennis 1.7  
Monthly reading growth, sighted boys 0.6  
  
Slide 12  
Reflections  
- An accumulated need for decoding training?  
- Repeated periods of tactile training  
- Training sessions spaced apart appear to promote learning  
- Long ”gaps” influence performance negatively

Slide 13  
Teachers´opinions  
- Easy to handle and to fit into the daily work  
- Well-structured design   
- Material easy to prepare   
- Documentation made reading development clear  
- Element of competition was appreciated   
- Three sessions per week

Slide 14  
Teachers’ evaluation of students reading development  
”He reads faster now and he doesn’t misread letters.”  
”His interest for what the text is about has increased and he wants to read longer and more complex texts.”  
”We believe that the training has had a great impact on her motivation and reading perseverance.”  
”His prosody when reading is so much better now. He reads fluently and he doesn’t get stuck on long words.”

Slide 15   
Implications for education  
- Motivation  
- A variety of reading interventions   
-- decoding practice  
-- oral repeated reading   
-- prose reading  
-- reading for information

*Slide 16  
”A visual impairment should not be regarded as a limitation for reading development, but it requires time and patience and is hard work even for good readers.”* (Fellenius, 1999)

Slide 17  
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