**Individualized Instruction for Dual Media Learners**

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Note: All slides are at heading level 2 and can be accessed directly via the screen reader or keyboard shortcut in Word. Images with a meaning are described while images used for decoration are not described.

## Opening Picture

Image description: The left door is slightly open, and the door is labeled "PRINT." The second door is right next to it. It’s labeled "BRAILLE".

## Table of Content

Part 1: Definition, Tradition, Distinction

Part 2: Literature Review

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## Definition

"Children with low vision who acquire literacy skills in both print and braille are known as dual media learners." (Corn & Lusk 2010, p. 258)

## Tradition, Legacy, and Future

- "Thirty years ago [...], the guiding philosophy regarding the teaching of braille and print was that only one medium should be chosen for a child." (Lusk & Corn 2006, p. 606)

- Attitudes: *„dual media will overburden the child"*, *„it‘s not possible to teach two literacy media at the same time"* , *"braille is a last resort"*

- New names: Multiple Media Users, Multiple Readers, Tri-Media Students   
(Rosenblum & Herzberg, 2020; Vik & Fellenius, 2007;

- How braille and print (and other access options) fit into an overall plan for tools in the toolbox?

## Toolbox

Image description: A toolbox labled "Student’s toolbox" surrended by CCTV, refreshable braille, speech-output, smartphones, and braillers are illustrated as drawings.

## Distinction

"Parallel instruction: Teaching braille and print concurrently and with the same level of intensity." (Holbrook et al., 2017, p. 413)

"Nonparallel instruction: Teaching braille skills at some point after students have acquired basic print literacy skills." (Holbrook et al., 2017, p. 413)

## Review: Dual-Media Research

- Studies: from 1995 to 2022

- Origin: USA, Great Britain, Germany, Greece, Norway, Sweden

- Methods: Survey, Student-Tests, Case-Studies

- Samples: 4-42 Dual-Media Students

- Main Focus: Media Decision-Making, Time, Literacy Skills, Instruction

## Review: Media Decision-Making

* The most common reasons for dual-media are the progressive nature of visual impairments, reading-speed, reading stamina (Lusk & Corn 2006 and Herzberg et al. 2017)
* Attitudes about print and braille affect the media-decision and instruction (Rogers, 2007).

## Review: Time

* Finding sufficient time for print and braille is a major challenge (Rogers, 2007).
* There is often more time avaible for print than for braille (Lusk & Corn, 2006b).

**-** According to two delphi-studies with a total of 80 experts, dual-media instruction should be direct, intense (1-2 hr per day), and consistent over a long period of time (Corn & Koenig, 2002; Koenig & Holbrook, 2000).

## Review: Literacy Skills

- Many dual-media learners show difficulty in reading fluency especially in braille (Vik & Fellenius, 2007; Winter, 2022).

- Initial print readers who learn braille at later point often show difficulties in braille reading fluency.

- The later an eye disease occurs, and the later braille is introduced, the less Braille is used (Goudiras. et al., 2009).

## Review: Instruction

- Start dual-media instruction as early as possible (Lusk & Corn 2006a)

- Students and families need emotional support (Rosenblum & Herzberg, 2020).

- Motivation and acceptance are fundamental in dual-media instruction (Winter 2022).

- Case study research with dual-media learners shows that parallel instruction is a promising practice (Fellenius, 1996; Winter, 2022)

- Success factors in parallel instruction are motivation, sufficient time resources, and parental engagement (Fellenius, 1996).

## Linking Assessment and Instruction

Formal Assessments:

- Learning Media Assessment (LMA)

- Functional Vision Assessment (FVA)

- Access Technology Evaluation (ATA)

Informal Assessments:

- Track the reading rates in print and braille.

- Focus on the process not on the problem!

## Assessing Reading Fluency in Dual Media

Informal Assessment:

1. Choose an appropiate text.

2. Adapt the text in braille and print.

3. Prepare a reading protocol.

4. Conduct the assessment.

5. Evaluate and document the results.

## IndiviDUALized Instruction

Goals

- What’s your goal in braille?

- What’s your goal in print?

Time

- What are the time resources?

- Is it possible to increase them?

Relationships

- What can I do to increase social and emotional acceptance of instruction?

- What can I do to increase motivation?

Content

- What content from the Core Curriculum or the ECC should be taught?

Environment

- Where does instruction take place? How can we create a dual-media-friendly   
learning environment?

Methods and Materials

- What’s the most effective method for instruction?

- How can we adapt the method for dual-media learners? And which material is needed?

## Case Study Ismael

Age: 6 years

Grade: 1

Schooling: inclusive

Diagnosis: glaucoma

Vision | Magnification: 20/500 and 12 time magnification

Preferred Sensory Channel: vision

Observed Reading Time: 26 min in braille, 28 min in print

Educational Team: TSVI and Educational Assistant

## Materials and Methods

Dual-Media Worksheet

- analysis of braille cell

- use vision to learn braille and print letters

Dual-Media ABC Book

- enlarged print letters

- tracing practice

- connecting print and braille

Emergent Literacy Book

- story of Alex and Lilani

- discover similarities and differences between braille and print letters

## Ismael’s reading rate

Image description: On the X-axis, we see Months 1–12; on the Y-axis, we have the correct words per minute (wpm). The blue graph illustrates print, and the red one is braille. In print, Ismael started with 11 wpm and achieved 28 wpm after nine months. This outcome was his highest during the case study. In braille, he started with less experience. His reading speed increased from 5 wpm to 20 wpm after nine months.

This is a significant increase in both media.

## Ismael’s dual media plan

- Braille (main) goals: Increase his braille reading fluency up to 5 correct words per minute within the next three months using repeated readings.

- Braille Content: Core Curriculum, Reading Fluency

- Braille Methods and Materials: Repeated reading is a procedure that consists of rereading a short passage aloud for a specified amount of time or until a certain reading speed is achieved.

- Braille Environment: Provide parents with motivating reading material in braille. Add braille reading material to the learning station in the classroom.

- Print Goal: Introduce the new CCTV to Ismael and practice the magnification function, as well as controlling the X-Y table.

- Print Content: Expanded Core Curriculum, Access Technology

- Print Environment: Set up the CCTV at home and in school. Show parents and classroom teacher how to use the CCTV.

## Case Study Shehan

Age: 14 years

Grade: 8

Schooling: special school

Diagnosis: retinitis pigmentosa

Vision | Magnification: 20/300, 12 time magnification level

Preferred Sensory Chanel: auditiv

Observed Reading Time: 0 minutes braille, 40 min print and 13 min speech output

Educational Team: nine different TSVIs

## Reading Stamina

Image Description: The X-axis shows minutes from one to 15, and the Y-axis shows words per minute. Again, the blue line depicts print, and the red line represents braille. The measurements were taken on different days to ensure that Shehan had a recovery period. Shehan’s braille-reading speed was constant, and no fatigue was noticeable. However, when reading print, he suddenly stopped after 11 minutes because he felt exhausted. Before stopping, he was reading at an average rate of 45 words per minute.

## Shehan’s dual media plan

### Braille

- Braille Goals: Increase acceptance and use in daily routines. Increase braille reading fluency to a level of independent, automated reading.

- Braille Content: Core Curriculum and ECC

- Braille Material and Methods: Assisted Reading: In this method, a reader reads along with a live or taped model of the passage until the oral production is accurate and smooth.

- Braille Relationships: Connect with other dual-media learners. Add braille to situations and topics of student interest. Use positive behavior feedback for braille reading.

### Print

- Print Goals: Use smartphone to access short reading passages like a menu plan, a personal timetable and room numbers.

- Print Content: ECC, Independent Living, Orientation & Mobility, Access Technology:

- Print Material and Methods: Guided teaching in use of Smartphone to enlarge print

- Print Relationships: Include other professionals in the dual media instruction like AT experts, rehabilitation specialists and family.

### Audio

- Audio Goals: Use different settings for reading speed according to the reading task (e.g. reading for comprehension, reading for overview)

- Audio Content: Core Curriculum (in Switzerland, listening skills are included), ECC, Access Technology

- Audio Material and Methods: Use guided teaching and think aloud to show how to use the screenreader function

- Audio Relationships: Start a conversation about the pros and cons of speech output in various situation.

## Methods and Materials

Feedback Letters in Braille

- focus on the learning process

- increase motivation

- break the concept of being a non-reader

Games

- fun activities and topics of interest

- practice braille in playful manner

Gap Reading

- reading braille and print simultaneously

- use technology

## Conclusions

- Begin dual-media instruction as early as possible.

- Teach dual-media students by incorporating assessment, planning, and ongoing instruction.

- Create a dual-media instructional plan for each reading medium and with the six dimensions in mind (e.g. goals, environment, etc.).

- Share creative ideas on methods and materials in dual media.

- Research on which methods and materials work best in dual media.

- Research on the effect of parallel and non-parallel instruction.

- Develop a dual media curriculum.

## Closing Picture

Image description: The picture with the two doors "Print" and "Braille" appears again. The image changes in an animation. The doors become part of a house. Both doors lead into the house, which is made of books. The chimney looks like a pen and there is a Perkins on the roof gable. In the background are clouds and the sun, which resemble the Getting in Touch with Literacy logo.

## Literature

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