**INTRODUCTION**

- This CAT is related to treatment/intervention.
- Clinical Case: Emily Kim
  - A 3-year-old girl with Down syndrome
  - Bilingual situation (Korean and English)
  - Given early intervention from birth and currently half-day preschool
  - One-word expressions such as "mama", "na", and sounds such as "Uh", "Ooo".
  - Some manual signs such as "more" and "done"
  - Emily's parents want Emily to expand her vocabulary repertoire using any communication mode (speech or alternative or augmented ways)
- "The matrix strategy" is known as an effective training method to improve the ability of word combinations

**DATABASE SEARCHES (-2009)**

- **Key words:** matrix strategy, matrix training, intellectual disabilities
- **Database of Abstract of Reviews of Effects (DARE)**
- **Cumulative Index of Nursing and Allied Health (CINAHL)**
- **Educational Resources Information Clearinghouse (ERIC)**
- **Medical Line**
- **PsycINFO**
- Found 9 articles

**APPLICABILITY**

- Less than 9 subjects per experiment; therefore, generality may be compromised.
- One study (preponderant), eight studies (suggestive)
- Six out of nine studies with older children aged 6 to 12: Not enough external validity for young children like Emily
- Be aware of the methodological limitations (e.g., No treatment integrity or no social validity)

**RESULTS**

**CONCLUSION & IMPLICATIONS**

- **Matrix strategy**
  - Increases acquisition and generalization of new two- or three-word combinations in receptive and expressive modalities (Ezell & Goldstein, 1989; Goldstein, Angelo, & Mousset, 1987; Light, Watson, & Remington, 1990; Mineo & Goldstein, 1990; Nigam, Schlosser, & Lloyd, 2006; Remington, Watson, & Light, 1990; Strifel, Wetherby, & Karlan, 1976).
  - Increases word combinations, whether the expressive modality is speech, speech with manual signs, or pointing to graphic symbols (Light, Watson, & Remington, 1990; Nigam, Schlosser, & Lloyd, 2006; Romanski & Ruder, 1984).
- No significant differences on learning word combinations between speech and speech with manual sign combinations (Romskii & Ruder, 1984).

**Research Questions**

"What are the effects of matrix strategies on expanding word combinations of preschool children with intellectual disabilities?"
References


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