Students who are d/hh – Patterns of Learning

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Empirical Information

- Marschark, M., & Hauser, P. C. (2008). Cognitive underpinnings of learning by deaf and hard-of-hearing students. In M. Marschark & P.C. Hauser (Eds.). Deaf cognition: Foundations and outcomes (pp 3-23). New York: Oxford University Press
  - One in four students who are d/hh in postsecondary settings will graduate
  - In 1966, 80% of U.S. students who were d/hh were educated in separate programs, by 2006, 80% were educated in public school programs

- Disjointed, i.e., only loosely connected, student learning of math, science and technology
- Growing, but as yet largely untested use of texting/captioning/CART vs. interpreting
- Possibility that “mediated learning,” i.e., no direct communication between students and teachers, may be negatively impacting upon student learning
- Increasing difficulty students are experiencing in attending to multimedia + interpreted content presentations, i.e., the need for students to attend to two competing sources of visual informaton.

- Barriers to students learning of science:
  - "…fewer opportunities for unstructured play in which incidental learning occurs"
  - "…tendency towards external locus of control"
  - "…less likely to engage in discovery learning." (pp 10)
- Less likely to make "…connecting inferences while reading or problem solving and less likely to automatically process relations among concepts…" (pp. 10)
- Experience difficulty in linking classroom instructional presentations with readings
- Frequent mismatch between student learning style/skills and teacher's instructional methods.

- "…no empirical evidence appears to indicate that deaf children in separate academic settings generally demonstrated any long-term advantage in academic achievement or social cognition relative to their mainstreamed peers when other factors are controlled." (pp. 14)
- "Bilingual programs – those that offer instruction in both a natural sign language (e.g., American Sign Language) and the vernacular (e.g., English)…are claimed to produce superior language, academic, and social growth in deaf children. Thus far, however, proponents have failed to provide any empirical evidence…" (pp. 14)

- Educational setting “placement…accounts for less than 5% of the difference in achievement…” (pp. 15) student characteristics account for 25%of student achievement, the factors that determine the remaining 70% of student achievement are undetermined

- Courtin, C., Melot, A., & Corroyer, D., (2008). Achieving efficient learning: Why understanding theory of mind is essential for deaf children…and their teachers. In M. Marschark & P.C. Hauser (Eds.). Deaf cognition: Foundations and outcomes (pp 102-130). New York: Oxford University Press
  - "Teachers' theory of mind…shape their pedagogical practice." (pp. 103)
  - Access to language is essential for students to develop their learning skills.

- Regardless of the child's learning setting, i.e., deaf children of deaf parents vs. deaf children of hearing parents, the developmental progression of thinking skills (vs. the timing) is the same, i.e., "…desires are understood before beliefs, and hidden motions is the most difficult task." (pp. 110)
- No differences appear in the sequence (vs. rate) of metacognative development of hearing and deaf children.

- Hauser, P., Lukomski, J., & Hillman, T. (2008). Development of deaf and hard-of-hearing students' executive function. In M. Marschark & P.C. Hauser (Eds.). Deaf cognition: Foundations and outcomes (pp 286-308). New York: Oxford University Press
  - Executive function is the overall cognitive term that describes an individual's to establish and carry out goal directed behaviors, e.g., pay attention in school, complete assignments, effectively participate in collaborative learning, etc.,

- Language skills impact executive functions, i.e., the poorer the language, the poorer the executive functions. This occur due to the difficulty an individual would experience in expressing their feelings and understanding the perspective of the individuals with whom they interact
- "Deaf children often do not receive the visual cues they need in the classroom to further the development of the EFs (executive functions) necessary to appropriately control visual attention." (pp. 295)
- This is due to a lack of visual synchrony between the student's learning style and teacher's teaching style.

- Students learn executive functions via experiences in which they interact with their peers and adults.
  - “The deaf students seldom contributed to the topic of the conversation, exercised listener control such as asking for clarification, or added to what their peers had said.” (pp. 296)
- Teachers need to assist students in the development of their executive functions by both demonstrating and describing their how they learn. Such demonstrations can best be carried out in in the context of problem based learning.

- “Deaf teachers have been found to explicitly express in their everyday narratives what it means to be deaf and demonstrate by examples how to interact effectively with hearing individuals.” (pp. 297)
- “Deaf individual’s EFs [executive functions] appears to be able to develop following the expected milestones if they receive effective access to language during the fist few years of life and are trained how to use their eyes more effectively than hearing individuals to learn from their environment.” (pp. 298)