

Long-Term Effects of Early Interventions on Students with Dyslexia
Annotated Bibliography

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Alt, M., Hogan, T., Green, S., Gray, S., Cabbage, K. & Cowand, N. (2017). Word learning deficits in children with dyslexia. *Journal of Speech, Language, and Hearing Research*, 60, 1012-1028. doi: 10.1044/2016_JSLHR-L-16-0036.

- Summary: Alt et al. (2017) investigated the strengths and limitations children with dyslexia exhibit during the configuration stage of word learning when compared to their peers with typical development. The research examined 116 typical second graders and 68 second graders with dyslexia through computer-based word learning games broken into four sets that focused on phonological or visuospatial demands. Two separate analyses were conducted to examine the results. ANOVA was used to examine the results of the groups and ANCOVA used nonverbal intelligence as the covariance to examine differences between the groups. The results indicated that children with dyslexia exhibit word learning deficits, especially phonologically.
- Assessment: This study proves that spoken word learning deficits are typical in children with dyslexia and that processing is often lost between visuospatial and phonological demands. This is important because it shows that providing interventions that focus on connecting visuals to the spoken word would be most beneficial.
- Reflection: This study is very detailed and contains reliable research I can use to answer my research question which examines how early interventions affect the long term reading outcomes of children with dyslexia. It will be a good way to introduce why

phonological interventions are most beneficial for students with dyslexia. Since this study examines second graders, it also proves the need for early intervention.

Gray, E. S., (2008). Understanding dyslexia and its instructional implications: A case to support intense intervention. *Literacy Research and Instruction*, 47 (2), 116-123. doi: 10.1080/19388070701878790.

- Summary: Gray (2008) describes and defines dyslexia as a congenital disorder, meaning children are born dyslexic, and examines how dyslexia affects the brain. Gray (2008) also explores misconceptions many teachers use to detect dyslexia, such as letter reversals which she explains are common for young readers and are not an indicator of dyslexia. Dyslexia is not a visual disorder, nor is it linked to intelligence or gender and it cannot be “cured”. There are, however, early indicators such as poor spelling and difficulty blending/segmenting phonemes.
- Assessment: My research involves examining how early interventions affect long-term reading outcomes for children with dyslexia but Gray’s (2008) research proves that dyslexia cannot be cured because it is congenital. Gray’s work does, however, show the importance of intense interventions early on (before third grade) in order to have lasting effects. This research article relates to Alt et al. (2017), McArthur et al. (2015), and Lim & Oei (2015) because it focuses on phonological processing interventions and proves that intense phonics training, such as Orton Gillingham which was examined by Lim & Oei, is vital in the early stages of literacy.
- Reflection: This article provides useful information because it highlights the importance of understanding what dyslexia is and what it is not while also making a case for intense instructional interventions. I can use this information in my introduction of what dyslexia is, how it affects reading abilities, and how teachers can identify early signs of dyslexia. I also plan to use Gray’s (2008) research to explain how some researchers have started using neuroimaging methods (brain-altering interventions) with intense assessment-based, phonics interventions because “non-disabled readers use more of their

left hemisphere while reading” while “disabled readers use both hemispheres of the brain while reading” (p. 119).

Lim, L. & Oei, A. C. (2015). Reading and spelling gains following one year of Orton-Gillingham intervention in Singaporean students with dyslexia. *British Journal of Special Education*, 42 (4), 374-389. doi: 10.1111/1467-8578.12104.

- Summary: Lim & Oei (2015) replicated and extended upon the research of Chia and Houghton by studying 39 Singaporean students with dyslexia between the ages of six and fourteen years old who were enrolled in an Orton Gillingham intervention program for one year. They conducted their research using a single-subject (pre/post test) design and found that students showed significant improvement, with moderate effect sizes, in reading and writing standardised tests. They also discovered an inverse relationship between students’ initial age beginning the intervention and improvement made during the intervention. These results determined the effectiveness of the Orton Gillingham approach in improving reading difficulty in students with dyslexia.
- Assessment: This research determined the value of early, phonological interventions. This is important to my research because it shows how a specific phonological intervention affects students’ reading development over time and proves the importance of early intervention.
- Reflection: I will be able to synthesize these findings in comparison to the work of Alt et al. (2017) and Lim & Oei (2015) because both researchers determined the importance of early interventions that focus on phonological processing. It is also useful that this study used a different type of research design than Alt et al. but found similar results.

McArthur, G., Castles, A., Kohnen, S., Larsen, L., Jones, K., Thushara, A. & Banales, E. (2015). Sight word and phonics training in children with dyslexia. *Journal of Learning Disabilities*, 48 (8), 391-407. doi: 10.1177/0022219413504996.

- Summary: The purpose of the study conducted by McArthur et al. (2015) was to compare sight word and phonics interventions for children with dyslexia to determine if the order of interventions affected reading progress. This study consisted of thirty-six children receiving eight weeks of phonics training followed by eight weeks of sight word training while a second group of thirty-six students had eight weeks of sight word training followed by eight weeks of phonics training and a third group of thirty-two students had sight word and phonics training simultaneously for sixteen weeks. Each group of students tested had reading difficulties, spoke English as their primary language at home and school, were without sensory or neurological impairment, and were between the ages of seven to twelve years old. The research was conducted using a quasi-experimental randomized design and the results indicated that training phonics before sight words had a slight advantage over the reverse but both interventions were needed to enhance literacy gains.
- Assessment: Like the work of Alt et al. (2017) and Lim & Oei (2015), this study examines grapheme to phoneme interventions and provides detailed information about the reasoning behind both types. This is relevant to my research because it supports the need for phoneme interventions to improve reading difficulties for children with dyslexia.
- Reflection: This study is useful because it provides detailed, statistical information about developmental dyslexia and its effects on children's academic achievements as well as their physical and mental health. This information will be used in the introductory paragraph of my literary review.

Snowling, M. J., & Melby-Lervag, M. (2016). Oral language deficits in familial dyslexia: A meta-analysis and review. *Psychological Bulletin*, 142(5), 498-545.

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- Summary: Snowling & Melby-Lervag (2016) used meta-analysis to compare ninety-five publications examining children from families at risk for reading disorders. At the pre-school stage, the children examined displayed difficulty in phonological processing,

language skills, and decoding; phonological awareness and literacy skills continued to be difficult for school-age children at family risk. This study examines studies that explore such factors as individual differences in reading development, the role of environmental factors, and perceptual and cognitive deficits in dyslexia. The purpose of this study was to determine if dyslexia could be predetermined based on family reading difficulties and if the home and literacy environment of children at risk affected their reading abilities.

- **Assessment:** This source relates to the research done by Gray (2008) because it proves dyslexia to be congenital since children from families at risk for reading disorders exhibited delayed language development as infants and toddlers. Snowling & Melby-Lervag (2016) suggested “...a phonological processing deficit can be conceptualized as an endophenotype of dyslexia that increases the continuous risk of reading difficulties” (p. 498). The term “endophenotype” suggests dyslexia has a genetic connection, just as Gray (2008) also suggested. Unlike Gray (2008) who stated dyslexia affects 1.5-5% of the population and is not determined by gender, Snowling & Melby-Lervag (2016) stated “dyslexia is a common condition, thought to affect some 3-7% of the English-speaking population, with more boys than girls affected” (p. 498). Overall, this research is consistent with the other studies I reviewed because it describes students with dyslexia struggling with phonological processing.
- **Reflection:** The findings in this study are important because they prove the possibility of early identification and the importance of early intervention. I plan to use this study to further explore the historical and theoretical components of dyslexia. This source fits well into my research question which examines how early interventions affect students over time because this study explores long-term outcomes from primary to late secondary school.