ADOLESCENT INFERENCE SKILLS CAN IMPROVE THROUGH INTERVENTIONS LED BY HUMANS, BUT NOT COMPUTERS

ARTICLE

Barnes, M. A., Clemens, N. H., Simmons, D., Hall, C., Fogarty, M., Martinez-Lincoln, A., … Roberts, G. (2024). A randomized controlled trial of tutor and computer-delivered inferential comprehension interventions for middle school students with reading difficulties. *Scientific Studies of Reading, 28*(4), 411–440. https://doi.org/10.1080/10888438.2024.2331517

WHAT DID THEY DO?

Barnes and colleagues conducted a randomized controlled trial of an inferential reading comprehension intervention for middle school students. The intervention program, Connect-IT, was created by the researchers and included 26 lessons that focused on four specific types of inferences in both narrative and expository texts: pronoun reference, text-connecting inferences, knowledge-based inferences, and inferring word meaning from context. The study aimed to compare the effects of a tutor-delivered version and a computer-delivered version of the intervention with the "business-as-usual" interventions provided by the school. They also studied the impact of pre-intervention word reading efficiency, reading comprehension level, and sex on the intervention's effects.

The trial consisted of 145 middle school students (grades 6-8) who failed their state literacy test. Students were 71% White, 24% Black, and 53.8% female, and they attended three economically-disadvantaged schools in Texas during the 2018-2019 school year.

WHAT DID THEY FIND?

Only the tutor-led intervention had a significant effect on students' ability to make the types of inferences that were instructed in the intervention, as compared to the business-as-usual and computer-led groups. Neither tutor-led nor computer-based interventions had a significant effect on students' general reading comprehension, but students who started the intervention with better word reading efficiency had greater overall reading comprehension gains from the tutor-led intervention as compared to the computer-led version. Sex also greatly impacted the effects of the interventions, as boys showed much greater gains from the tutor-led intervention and teacher-delivered "business as usual" intervention as compared to the computer-led intervention.

WHAT COULD THIS MEAN?

Inference skills are malleable in adolescent readers, and interventions that use both expository and narrative text can improve students' inference-making for new texts. However, the impact of these interventions depends on a variety of factors. Overall, students may show greater gains on inference skills when given tutor-led interventions as opposed to computer-led interventions, which may be due to greater motivation, emotional support, and background knowledge support provided from the tutor. In particular, boys may benefit more from tutor- or teacher-led rather than computer-led interventions. Also, reading comprehension interventions for middle school students may be most effective for students who have low reading comprehension but adequate word reading skills. Since many struggling adolescent readers have difficulty with both word reading and comprehension, middle school reading interventions may benefit from a supplemental component that addresses word reading alongside comprehension.

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