

Study finds program boosts cognitive engagement of students with language and attention difficulties

September 3 2024



(Left to right): Haley Tancredi, Professor Linda Graham and Dr Callula Killingly. Credit: Queensland University of Technology

A new study has found high school students with disabilities impacting language and information processing were able to better comprehend content when teachers adopted evidence-based strategies to increase the

accessibility of classroom teaching.

The study, [published](#) in *Learning Environments Research*, was led by the Queensland University of Technology Center for Inclusive Education researchers Haley Tancredi, Prof. Linda J. Graham and Dr. Callula Killingly, and Prof. Naomi Sweller of Macquarie University.

The study involved 56 year 10 students and found a statistically significant increase in cognitive engagement when their teachers participated in the Accessible Pedagogies program.

Doctoral student Haley Tancredi, who was first author of the study, said the two most common disabilities impacting language and [information processing](#) were Developmental Language Disorder (DLD) and Attention Deficit Hyperactivity Disorder (ADHD), which together account for about 14% of school students—or four students in every classroom of 30.

Tancredi said students with DLD and ADHD often "hide in plain sight" in the classroom and underachieve relative to their potential. However, many of the barriers these students face could be proactively removed using accessible teaching practices.

Tancredi and Graham, Director of the QUT Center for Inclusive Education, have spent the last seven years developing a program of learning to help teachers reach these students whether they have been identified or not.

"In prior research, we investigated the impact of the Accessible Pedagogies program on the accessibility of teachers' practice," Graham said.

Graham said the findings were extremely positive with most teachers

demonstrating improvements across a range of accessible teaching practices targeted in the program.

Tancredi said this latest research "aimed to determine whether improved accessibility was noticed by students and whether it made any difference to their engagement and classroom learning experience."

"Students participating in this study were interviewed before and after their teachers underwent the program," Tancredi said.

Graham said that when asked what their teacher did to help them pay attention and to understand, students whose teachers participated in Accessible Pedagogies explicitly described increased use of practices emphasized in the program.

"Importantly, students did not know whether their teachers were participating in the program, nor did they know its content," Graham said.

Sweller said students also completed questionnaires assessing their classroom engagement before and after their teachers participated in the Accessible Pedagogies program.

"Students whose teachers participated in the [program](#) reported a significant increase in cognitive engagement, which is a measure of the level of investment that students put into comprehending complicated ideas and mastering content. There was no such increase for students whose teachers did not participate," Sweller said.

Tancredi said that the team's findings "suggest that [teachers'](#) use of Accessible Pedagogies may help students redirect their mental effort towards learning, rather than expending that effort to overcome unnecessary instructional barriers."

"The practices in Accessible Pedagogies are essential for students with DLD and ADHD, but help all students to pay attention, understand, and learn. Future research will investigate the use of Accessible Pedagogies in primary school classrooms and in schools serving disadvantaged communities," Tancredi said.

More information: Haley Tancredi et al, Investigating the impact of Accessible Pedagogies on the experiences and engagement of students with language and/or attentional difficulties, *Learning Environments Research* (2024). [DOI: 10.1007/s10984-024-09514-z](https://doi.org/10.1007/s10984-024-09514-z)

Provided by Queensland University of Technology

Citation: Study finds program boosts cognitive engagement of students with language and attention difficulties (2024, September 3) retrieved 5 September 2024 from <https://phys.org/news/2024-09-boosts-cognitive-engagement-students-language.html>

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