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A K20 Center Research Brief

Is Exposure to Dialogic Instruction Associated with Improvements in Middle School Students' Argumentative Writing and Knowledge of Argument Concepts? Evidence from Propensity Score Analyses

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Introduction

Students often hold opinions and can participate in arguments, yet many struggle to justify their claims clearly in writing. This challenge is especially consequential in middle school when students transition from stating opinions to supporting claims with evidence, reasoning, and consideration of multiple perspectives. Prior research shows that while discussion-based instruction can support argumentation, students do not always transfer what they learn in oral discussions into effective written arguments—particularly when instruction emphasizes talk without explicitly addressing how arguments work as a system.

The authors designed this study to examine whether a dialogic instruction intervention, one that was grounded in collaborative discussion and explicit teaching of argumentative concepts, was associated with improvements in middle school students' argumentative writing and their understanding of key argument elements such as reasons, evidence, and counterarguments. Addressing this gap is critical. Argumentative reading and writing skills support learning across content areas; they prepare students for high school coursework, assessments, civic discourse, and college- and career-ready literacy. The study further explores whether greater exposure to dialogic instruction under real-world conditions—including pandemic-related disruptions—relates to stronger writing outcomes.

Methodology

Research Design:

This study used an observational, quasi-experimental design. Students were not randomly assigned to intervention conditions. Instead, researchers examined differences in outcomes based on students' level of exposure to the intervention using latent profile analysis and propensity score analysis.

Sample:

Participants included 802 students in grades 6-8 from three public middle schools in a large, diverse Mid-Atlantic school district. The sample reflected substantial racial, linguistic, and



socioeconomic diversity, with a meaningful proportion of students identified as English learners and students with disabilities. Fifteen certified middle school ELA teachers delivered the intervention after participating in professional development sessions.

Intervention Description:

The intervention consisted of three dialogic lessons focused on collaborative argumentation and explicit instruction in argumentative discourse concepts. Lessons were taught during regular middle school English Language Arts classes by classroom teachers who participated in project-specific professional development. Across the lessons, students engaged in structured discussions of debatable issues while learning to recognize, evaluate, and apply key elements of argumentation.

In the first lesson, students were introduced to what defines a debatable issue and to norms for participating in critical discussions. Teachers guided students in analyzing simulated and authentic examples of argumentative dialogue. Students then read a researcher-prepared article on a debatable topic and participated in small-group discussions, presenting reasons and evidence for opposing positions, switching roles to argue alternate viewpoints, and attempting to resolve the disagreement collaboratively.

The second lesson emphasized explicit instruction in argumentative elements, including position, reason, evidence, counterargument, rebuttal, and solution. Teachers modeled how these elements functioned in both oral discussions and written argumentative texts. Students analyzed grade-level argumentative essays to identify these elements and used the texts to support further dialogue.

The third lesson focused on evaluating argument quality. Students were introduced to four evaluative questions related to reasons, evidence, counterarguments, and rebuttals, applying them to argument samples and engaging in a final critical discussion using this framework.

The intervention was grounded in a reciprocal view of reading and writing. Students read and analyzed grade-level argumentative texts to make argumentative structures and language visible. They then applied this conceptual understanding in dialogic discussions. Instruction occurred during regular ELA periods and was delivered in virtual or hybrid formats using whole-class instruction and small-group discussion. The intervention did not include explicit instruction or scaffolds for converting oral arguments into written texts. Implementation was carried out by 15 certified middle school ELA teachers, supported by the research team through professional development sessions and lesson materials.

Dosage

- Number of lessons: 3
- Length of each lesson: Approximately 45 minutes (varied due to scheduling disruptions)
- Duration: Entire third grading period
- Estimated total dosage:



- *Instructional sessions:* 3 lessons
- *Approximate instructional time:* ~135 minutes (2.25 hours)

Variation in student attendance, engagement, and instructional disruptions limited consistent exposure. The study examined exposure levels rather than fixed dosage.

Data Analysis:

Researchers grouped students into exposure profiles based on four indicators: attendance, learning mode (virtual or hybrid), teacher planning, and student completion of aligned activities. Propensity score analysis was used to adjust for pre-intervention differences and estimate associations between exposure level and outcomes.

Results

The findings are clear and actionable: students who experienced the highest level of exposure to the dialogic intervention consistently outperformed their peers.

Key takeaways for practitioners include:

- Students with high exposure demonstrated stronger argumentative writing, both with and without background information.
- High-exposure students also showed greater understanding of key argumentative concepts, such as identifying claims, evidence, and counterarguments.
- Differences between the highest- and lowest-exposure groups were moderate in size, indicating meaningful educational impact—even under pandemic conditions.
- Students with partial or inconsistent exposure showed only modest gains, emphasizing that implementation matters.

Importantly, these outcomes suggest that dialogic instruction works best when students regularly attend, actively participate in aligned activities, and receive well-planned instruction, rather than sporadic or superficial exposure.

Application into Practice

Schools seeking to replicate this intervention should focus on intentional design and sustained exposure, not simply adding discussion activities.



Key implementation steps include:

1. Professional Development for Teachers
 - Provide training on dialogic instruction, critical discussion norms, and argumentative concepts (claims, reasons, evidence, counterarguments, rebuttals).
 - Model lessons and facilitate collaborative planning sessions.
2. Structured Dialogic Lessons
 - Implement a short sequence (e.g., three lessons) focused on:
 - Establishing norms for respectful, evidence-based discussion.
 - Explicitly teaching argumentative concepts and vocabulary.
 - Using guiding questions to evaluate arguments.
3. Use of Debatable, Age-Appropriate Topics
 - Select issues that invite multiple perspectives and meaningful debate.
 - Ensure students explore both sides of an issue before reaching conclusions.
4. Integration of Reading, Discussion, and Writing
 - Include mentor texts that model strong argumentative structure.
 - Have students analyze texts for argumentative elements and apply them in discussion and writing.
5. Monitoring Exposure and Engagement
 - Track attendance, participation, and completion of aligned tasks.
 - Provide support for students with inconsistent access or engagement.
6. Focus on Conceptual Understanding, Not Just Writing Output
 - Assess students' ability to recognize and explain argumentative elements, not only final essays.

By prioritizing consistent exposure, explicit instruction, and collaborative reasoning, schools can adapt this intervention within both traditional and hybrid instructional settings.

Replication limitations:

Although the article outlines the purposes and core components of the dialogic lessons, it does not provide full lesson scripts, materials, or fidelity measures, and instructional delivery varied due to pandemic conditions. As a result, schools seeking to replicate the intervention would need to make local decisions about materials, pacing, and implementation support that were not fully specified in the study.

Work Cited

Ferretti, R. P., Song, Y., Zhang, H., Van Horne, S., Mead, H., Collier, Z., Sabatini, J., & May, H. (2025). *Is exposure to dialogic instruction associated with improvements in middle-school students' argumentative writing and knowledge of argument concepts? Reading and Writing*, 39, 875–910. <https://doi.org/10.1007/s11145-025-10740-x>