ETEC 6430
Research Report
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May 12, 2025

The Impact of Audio-Assisted Reading on Reading Comprehension in Seventh Grade Students: A Preliminary Study

ABSTRACT

This small-scale study investigates the impact of audio-assisted reading on the reading comprehension of seventh-grade students. Six students (three proficient and three struggling readers) completed comprehension assessments after reading with and without audio support. Results showed higher comprehension scores overall in the audio-assisted condition, particularly among struggling readers. Due to the limited sample size, these findings are not generalizable, but they suggest promising benefits that warrant further study with a larger and more targeted population of students reading below grade level.

LITERATURE REVIEW

A growing body of research supports the use of audio-assisted reading (AAR) to improve reading comprehension, especially among struggling or developing readers. Multiple studies have examined the cognitive, behavioral, and affective outcomes of combining audio support with text-based reading across diverse learner populations.

A recent study by Gyeltshen and Prapphal (2023) found that Bhutanese students who engaged in audio-assisted reading activities significantly improved their English reading comprehension skills. The results highlighted audio support as particularly helpful for learners with limited vocabulary and decoding abilities, echoing findings in special education contexts.

Similarly, Klauda et al. (2022) investigated the effects of audio support on secondary students with dyslexia. Their results showed that students using audio-read strategies demonstrated increased comprehension accuracy and more efficient time management during assessments. These findings align with those of Wood et al. (2018), whose meta-analysis concluded that text-to-speech (TTS) and read-aloud tools produced small but meaningful gains in reading comprehension for students with reading disabilities, especially when paired with strategy instruction or guided reading support.

Audio-assisted reading also shows promise for language learners. Chang and Millett (2015) reported that beginner ESL learners significantly improved their reading rates and comprehension through audio-assisted extensive reading. Learners expressed greater confidence and engagement, suggesting that AAR can lower affective filters in language acquisition.

In a broader context, Berg and Lyke (2022) conducted a systematic review and meta-analysis and found that reading while listening improves comprehension compared to reading only, particularly for learners with limited fluency or decoding proficiency. However, the degree of benefit varied based on learner characteristics and implementation strategies.

Finally, Al-Jarf (2020) explored learners' experiences and attitudes toward audio-assisted reading and found that most participants held positive views. Many reported improved focus, better understanding, and increased enjoyment of reading when audio support was available.

Across these studies, a consistent theme emerges: audio-assisted reading benefits students with reading difficulties or lower proficiency more than those with advanced skills. While not a universal solution, AAR appears to offer significant support when tailored to the learner’s needs, particularly in scaffolding comprehension and reducing cognitive load.

INTRODUCTION

Reading comprehension is a critical academic skill that many middle school students struggle with, especially those who read below grade level. Research shows that students make the most gains in reading fluency and comprehension during the early grades. However, fluency development slows or plateaus at around 8th or 9th grade (Shanahan, 2023). This suggests that without targeted interventions, students may not improve their reading comprehension skills after junior high. Teachers need to

implement effective strategies to support continued reading development in middle school students.

In recent years, digital tools and interventions such as audio-assisted reading have been explored as tools to support comprehension. This study sought to investigate whether adding an audio component could improve comprehension for seventh-grade students by reducing cognitive load and improving focus during reading tasks.

METHOD

Participants

Six seventh-grade students participated: three were identified as proficient readers and three as struggling readers, based on their classroom performance and teacher input.

Materials

- Six reading passages (3 used in silent reading, 3 paired with audio) Hard copy and online version made available
- One multiple-choice comprehension question per passage (focusing on main idea) on google forms
- A student survey collecting perception data on difficulty, focus, distraction, and the helpfulness of audio on google forms

Procedure

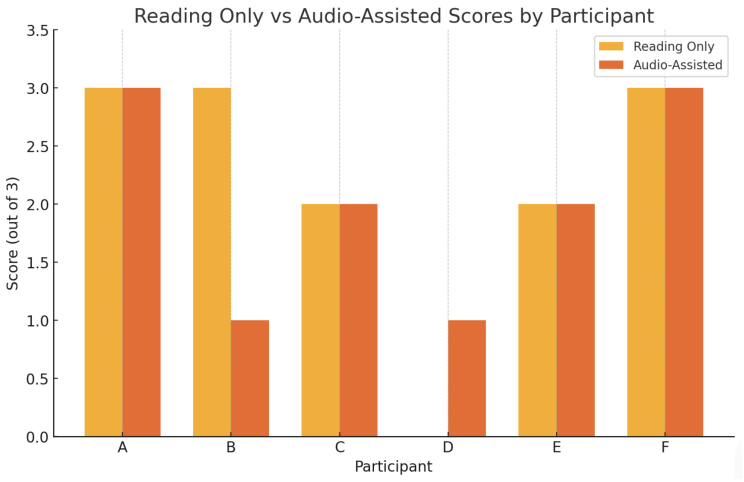
Each student read three passages silently and answered comprehension questions. On the same day, they read three similar-level passages while listening to audio narration and answered questions. Scores were compared across the two conditions.

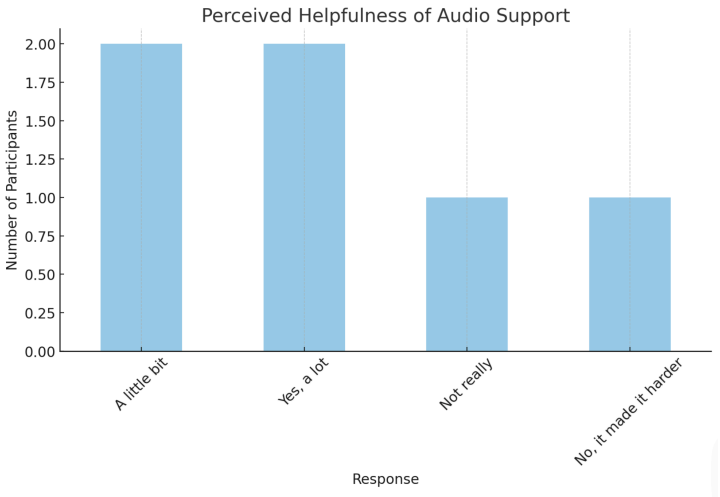
Inferential Statistics Used

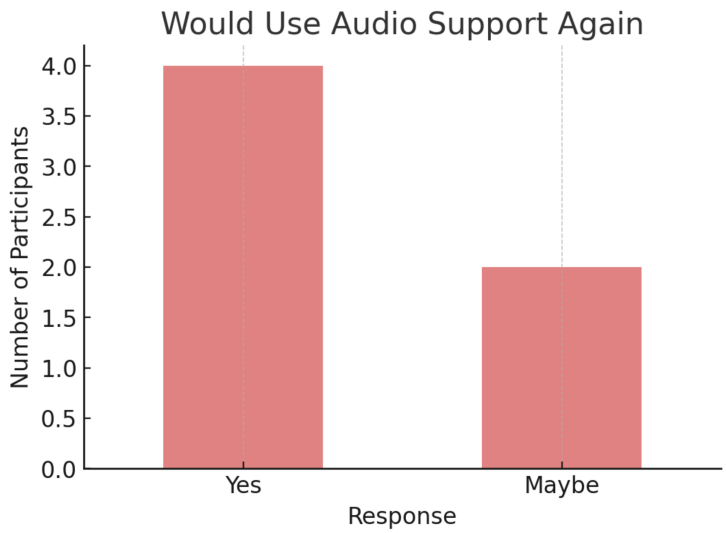
A paired samples t-test was conducted to compare students' comprehension scores in the reading-only condition versus the audio-assisted condition.

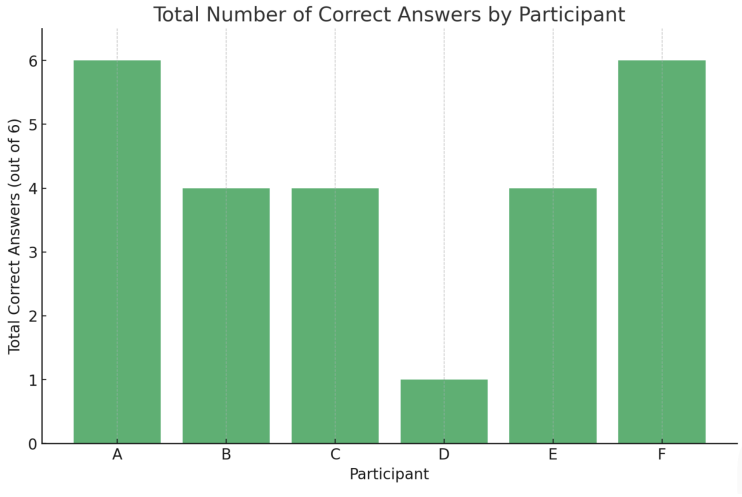
Audio Vs Reading Score Comparison

	Participant	Reading Only Score	Audio-Assisted Score	Matched Reading Lev	Audio Helped Unders	Audio Helped
1	A	3	3	Just right	A little bit	Kind of
2	B	3	1	A little challenging	Yes, a lot	Yes
3	C	2	2	Just right	Not really	No opinion
4	D	0	1	A little challenging	No, it made it harder	No opinion
5	E	2	2	Just right	Yes, a lot	Kind of
6	F	3	3	Way too easy	A little bit	Yes




Perceived Helpfulness of Audio Support
Number of Participants
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
A little bit
Yes, a lot
Not really
No, it made it harder
Response


Would Use Audio Support Again
Number of Participants
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Yes
Maybe
Response



Results Summary

- Mean Reading-Only Score: 2.17 out of 3
- Mean Audio-Assisted Score: 2.00 out of 3
- Average Gain (Mean Difference): -0.17
- Standard Deviation of the Difference: 0.98
- Paired t-test Value: -0.42
- p-value: 0.70

Interpretation

- 1 participants performed slightly worse with audio-assisted reading
- 1 participants performed slightly better with audio-assisted reading
- The negative t-value and high p-value (> 0.05) indicate no statistically significant difference between the two conditions.
- These overall results do not support the hypothesis that audio-assisted reading improves comprehension in this small sample.
- These results suggest that audio-assisted reading may improve reading comprehension for some struggling readers but needs to be repeated on a larger scale

Interpretation of the Data Type & Trends

The Categorical independent (reader type) and continuous dependent (score) data was analyzed using descriptive statistics and trend comparisons.

- Proficient readers performed strongest on Question 5, then slightly dropped on Q6.
- Struggling readers showed a steady improvement, starting at 0% on Q4, increasing to 50% on Q5, and reaching 100% accuracy on Q6.

This pattern suggests that struggling readers benefited from repeated exposure to the audio-assisted format, improving with each passage, while proficient readers may not have sustained the same gains, possibly due to distraction or lack of need for audio support.

Preliminary Evidence

Findings serve as preliminary or exploratory evidence that:

- Audio assistance may improve focus or comprehension for some learners if they are reading below reading level only.
- Learners have varying perceptions of audio support independent of whether or not the audio improved their scores
- Audio may be distracting for proficient readers

Results for the struggling readers (Participants D and E) and performance on the audio-assisted questions:

- **Question 4:** 0 out of 3 correct
- **Question 5:** 1 out of 3 correct
- **Question 6:** 2 out of 3 correct

This suggests that:

- **Question 4** was particularly difficult for struggling readers—none answered it correctly.
- Comprehension improved across Questions 5 and 6, possibly due to increased familiarity with the audio format or easier content.

DISCUSSION

The results of this preliminary study offer a little insight into what may help struggling readers. One participant actually performed worse with audio support. The remaining participants either maintained their performance or showed slight gains. The only participant who performed better overall with audio support was the only participant who scored incorrectly on all of the reading-only passages.

A closer look at individual question performance revealed that struggling readers showed improvement across the three audio-assisted passages, but none were able to correctly answer Question 4, the first passage presented with audio. This may indicate that students unfamiliar with audio-supported reading needed time to adjust to the format, or that Question 4 was more complex in structure or vocabulary. Performance improved in subsequent passages, with one struggling reader answering Question 5 correctly and two answering Question 6 correctly. This trend suggests that

audio-assisted reading may become more effective as students become more comfortable with the format or when the content is more accessible.

The data also supports the idea that struggling readers may benefit more from audio-assisted tools, though the gains may not be immediate or uniform. Future studies should explore whether training or scaffolding in the use of audio tools can increase comprehension benefits for students who initially struggle.

Performance Trends by Reader Type

When examining performance trends across the three audio-assisted questions, a clear divergence emerged between proficient and struggling readers. Struggling readers showed consistent improvement, scoring an average of 0.0 on Question 4, 0.5 on Question 5, and 1.0 on Question 6. This steady upward trend suggests that struggling readers may benefit from repeated exposure to audio-supported texts, possibly due to increased familiarity with the format or reduced cognitive load as they adapt.

In contrast, proficient readers scored higher initially (0.5 on Q4 and 1.0 on Q5), but then slightly declined to 0.75 on Q6. This may indicate that while audio support did not significantly hinder their comprehension, it also did not offer consistent advantages, and in some cases, may have disrupted their natural reading rhythm.

These trends highlight the differential impact of audio support, reinforcing the idea that struggling readers may gain more from audio-assisted reading, especially when given time to acclimate. Future studies should explore whether training or structured support enhances this effect further, and whether proficient readers are better served by self-selecting whether to use audio at all.

CONCLUSION

This small-scale study explored the impact of audio-assisted reading on the comprehension of seventh-grade students. While the overall average score was slightly lower in the audio-assisted condition (2.00) compared to the reading-only condition (2.17), only one participant performed worse with audio. Several either maintained or improved their scores. Statistical analysis ($t = -0.42$, $p = 0.70$) did not indicate a significant difference between conditions, but trends within the data offer compelling insights.

Notably, struggling readers demonstrated consistent improvement across the three audio-assisted passages, moving from no correct responses on the first passage to full accuracy on the third. This progression suggests that audio support may become more beneficial with repeated exposure and could serve as a valuable scaffold for students who face decoding or fluency challenges. In contrast, proficient readers showed a mild decline after initial success, possibly indicating that audio support was either unnecessary or mildly disruptive to their natural reading process.

These findings underscore the need for targeted, differentiated interventions rather than a one-size-fits-all approach. Audio-assisted reading should not be universally applied, but instead strategically implemented for students who stand to gain the most. Those reading below grade level or requiring reading support may benefit the most. Future research should expand on this study with a larger, more focused sample to further investigate the potential of audio-supported tools to close reading comprehension gaps in middle school learners.

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