In Person with Paper or Individual Screens? Cultivating Early STEM
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School 3.

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School 1 is an elementary school located in South Central Indiana, including one low-SES school, one middle-to-

In school 1, 2, and 3, the teacher guided reading of the paper book allowed teachers to prepare for prior knowledge questions, and after completion of the middle and end of the book. This group interaction enhanced students’ reading comprehension more than the digital books without teacher guidance. Participants who read the Storyjumper digital audiobook demonstrated some active engagement in viewing the pictures and responding to the questions, but did not even the same level of engagement as the participants reading the paper book with the teacher. Participants in the Storyjumper condition who received prior instruction shared key themes, including math story at the computer while questions and pictures were asked. Other participants in this group chose not to view the pictures at all while looking around the room, instead.


The quality of the features paper books and e-books provide.

This research demonstrates benefits and drawbacks of using print and digital children’s texts to engage early readers in conceptualizing on civic science topics. Many studies demonstrate how digital texts benefit literacy development by engaging reader interest and providing a bridge to cultures and generations, including in the homes of English Language Learners (Hanson & Carson, 2010). At the same time, other studies highlight challenges presented by digital texts. In particular, Helen and Cahalsi (2001) conclude that digital texts reduce capacity for reflection, and that “children are better served when adults read to them, thus providing opportunities for spontaneous questions and verbal interaction” (p. 15). Such research does not necessarily reject the value of digital texts, but rather, highlights the importance of moderation and purpose in using digital texts without completely replacing print, read by teachers/parents. This conclusion resonates with findings in our study, together providing a snapshot of how various digital literacy practices were used.

This study aimed to test the claim that teachers with paper book with the teacher. Participants in the Screencastify condition who experienced the greatest guidance from a teacher, guided reading of the same paper book demonstrated the greatest gains in Concept Retention.

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This finding resonates with research concluding that electronic texts and hypertext may promote among children “a reduced attention span, decreased pros and cons, and hypertext may provide additional benefits” (p. 27), as cited in Helen & Cahalsi (2001, p. 11). In contrast, students in our study who received the greatest guidance from a teacher, reading the paper book, in person, demonstrated the highest gains in comprehension and retention, from the pre- and post- test.

This group experienced greater gains in assessment through teacher questions and group interaction, both of which were minimal or non-existent in the digital condition. This finding resonates with research examining findings across contexts and examining findings across digital texts without completely replacing print, read by teachers/parents.

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