

Research shows students perform well regardless of reading print or digital books

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(Phys.org) —Research by an Indiana State University doctoral student found that students did equally well on a test whether reading from a digital book or a printed one.

Jim Johnson, who also is director of instructional and [information technology services](#) in the Bayh College of Education, surveyed more than 200 [students](#). Half of the students used an iPad2 to read a textbook chapter while the other half of the students read from a printed textbook chapter. The students then took an open-book quiz with eight easy and eight moderate questions on the chapter.

"Few people have done a lot of research into what I'm doing," Johnson said. "Mine directly ties performance with [perception](#) by [undergraduates](#)

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Johnson's research specifically examined three questions: Are there any significant differences in reading comprehension test scores of students when using paper texts versus digital texts? Are there any differences in reading comprehension test scores with regard to gender or between text formats and gender? Is there a relationship between the hours of experience using [tablet computers](#) and reading comprehension test scores among [study participants](#)?

"No matter what the format, no matter what the preference, they did well," he said. "It was interesting that the gender didn't matter on the test scores."

Men had a mean score of 12.87 out of 16 while women had an average score of 13.60 out of 16. Students age 21 had an average score of 13.87 out of 16 while students 25 and older had an average score of 13.5 out of 16.

He also found that there was no significant difference on [test scores](#) whether or not the participant had past experience on a tablet.

"The [delivery method](#) didn't make any difference," he said.

Of the participants, 88 percent said they had read books on laptops, netbooks or desktops while 51 percent said they had used an iPad, [iPhone](#) or iPod to read books. Additionally 36.1 percent said they used a cell phone to look at digital texts. When asked what they would like to use, 69.1 percent said they would want to use an iPad, iPhone or iPod to read digital text and almost the same amount, 68.7 percent, said they would prefer a laptop, [netbook](#) or desktop computer. Only 48.1 percent said they would want to use an e-book reader. In considering digital textbook readers, 74.7 percent said the ability to browse the Internet was

important while 70.4 said they wanted to read email, 62.7 percent said cheapest price was important. Of the prices students said they would pay, 40 percent said between \$100 and \$200 while 16.7 percent said they would pay between \$200 and \$249.

"The bulk of undergraduate students are looking at cheaper devices. That's important for students," he said. "The market is driving our students to Android devices like Kindle."

However, some problems remain in the digital textbook market. Students expressed concern about eye strain from reading text on electronic devices. Johnson said one participant became so nauseous reading the digital text that she was unable to complete the study. Also students expressed concern about the high price of [digital textbooks](#) as well as the battery life, software and reliable technology.

In focus groups after the initial test, Johnson said students didn't like the high cost of digital book rental or the inability to resell digital textbooks.

"A lot of the students didn't like the idea of renting books," he said.

Johnson said there needs to be further discussion about the cost of digital textbooks and how to keep costs down. Faculty members also need to be encouraged to write and create their own digital textbooks and resources for students, he said.

Digital texts would allow professors to use the most current resources.

"Publishing on paper is always slower," he said. "Delivery options for students are important. Information should be on demand."

In the future, Johnson said professors could select chapters from different digital textbooks and combine it into one digital textbook so

students wouldn't have to buy different textbooks to read chapters that the professors like.

Provided by Indiana State University

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