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| **Should Tablets Replace Textbooks in K-12 Schools? from procon.org** |
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Publishing for the K-12 school market is an $8 billion industry, with three companies - McGraw-Hill, Pearson, and Houghton Mifflin Harcourt - capturing about 85 percent of this market. Tablets are a $72 billion industry with 42 percent of U.S. adults owning a tablet. As tablets have become more prevalent, a new debate has formed over whether K-12 school districts should switch from print textbooks to digital textbooks on tablets and e-readers.

Proponents of tablets say they are supported by most teachers and students, are much lighter than print textbooks, and improve standardized test scores. They say tablets can hold hundreds of textbooks, save the environment by lowering the amount of printing, increase student interactivity and creativity and that digital textbooks are cheaper than print textbooks.

Opponents of tablets say they are expensive, too distracting for students, easy to break and costly/time-consuming to fix. They say that tablets contribute to eyestrain, headaches, and blurred vision, increase the excuses available for students not doing their homework, require costly Wi-Fi networks, and become quickly outdated as new technologies are released.

2012 marked the first time more people accessed the Internet via smartphones and tablets than desktop or laptop computers. By Jan. 2014, 42 percent of US adults owned a tablet computer, 32 percent owned an e-book reader, and 50 percent owned one or the other (up from 29 percent in Aug. 2012), according to a survey by the Pew Research Internet Project. Approximately 227 million tablets were shipped in 2013, and that number is projected to increase to 386 million by 2017. A joint report by McKinsey and the GSMA predicts the mobile education market could be worth $70 billion globally by 2020, and predicts demand for mobile education devices, like smartphones and tablets, may be worth another $32 billion by the same time frame.

43 percent of Americans read online books, magazines, or newspapers. Amazon announced in July 2010 that e-books were outselling paper books, and a July 2012 report by the Association of American Publishers showed that e-book revenue exceeded that of hardcover books for the first time ever. From 2008 to 2012, e-book sales rose from $68 million per year to $3 billion. While e-books sales rose 117 percent from 2010 to 2011, the print book business declined 2.5 percent in 2011 to $27.2 billion from $27.9 billion in 2010. However, over 90 percent of educational textbooks are still read on paper, and only 30 percent of textbook titles are available electronically.

In Nov. 2010, the US Department of Education released its National Education Technology Plan, a detailed blueprint on how schools can improve learning with technology. Among its recommendations is to leverage mobile devices ("the technology students already have") in the classroom. In his Jan. 2011 State of the Union address, President Obama said, "I want all students to be able to learn from digital textbooks." On Feb. 1, 2012, the US Department of Education and the Federal Communications Commission (FCC), in collaboration with several tech organizations, released a downloadable "Digital Textbook Playbook" to "encourage collaboration, accelerate the development of digital textbooks and improve the quality and penetration of digital learning in K-12 public education."

99,000 K-12 schools spend $17 billion annually on instructional materials and technology. Many districts, schools, and states have begun transitioning their instructional materials from paper textbooks to digital learning environments, according to the "Digital Textbook Playbook." Florida has mandated that all K-12 instructional materials are required to be provided in electronic format by 2015-2016. California launched a free digital textbooks initiative in 2009, and West Virginia replaced social studies print textbook purchases with digital textbooks. Georgia state law requires that electronic copies of K-12 textbooks be made available for use by students, and the San Diego Unified School district has distributed 78,000 digital textbooks to teachers and students since 2011 and purchased 26,000 iPads for district use in June 2012. In June 2013, the Los Angeles Unified School District (LAUSD; the second-largest school district in the country) approved an estimated $1 billion plan to purchase 640,000 iPads with Pearson curricula for all of the K-12 students in the district. The school district spent $61 million to purchase 47,000 iPads before the contract was suspended on Aug. 26, 2014 due to allegations of impropriety in the bidding process. LAUSD plans to re-bid the tablets project.

The American Association of Publishers says that the average net unit price of a K-12 print textbook was $65 in 2010. A 2005 report by Congress' Government Accountability Office found that print textbook prices nearly tripled from 1986 to 2004, rising at twice the rate of inflation. A report from the Student Public Interest Research Group found that textbook wholesale prices have risen nearly four and a half times the rate of inflation from 1990-2009. Digital textbooks on average cost 50-60 percent less than new print textbooks. Tablets in the U.S. cost on average $489 in 2011, $386 in 2012, $343 in 2013, and are projected to cost $263 in 2015. However, implementation costs for e-textbooks on iPad tablets are 552 percent higher than new print textbooks in an average high school, and the annual cost per student per class with tablets is $71.55 vs. $14.26 for print textbooks. This difference is due to additional costs associated with building wi-fi infrastructure, training teachers and administrators how to use the technology, and annual publisher fees to continue using e-textbooks.

According to an April 2012 peer-reviewed study in *Archives of Disease in Childhood*, the average weight of a student's backpack is 15.4 pounds (an average of 3-4 books), and the average weight of a tablet is between 0.75 to two pounds. Pediatricians and chiropractors recommend that students not carry more than 15 percent of their body weight in a backpack, but an April 14, 2004 study by the State of California found that the combined average weight of textbooks in just the four core subjects of History-Social Science, Mathematics, Reading/Language Arts, and Science exceeded this percentage at nearly all grade levels from 1-12. Data from the United States Consumer Product Safety Commission, over the period from 1994-2000, found more than 23,000 youths ages 6 to 18 were treated in emergency rooms for backpack-related injuries, such as contusions, sprains and strains to the back and shoulders, and fractures. California and Georgia are the only states with legislation related to textbook size and weight, according to the Association of American Publishers. In California, the maximum weight for a textbook is three pounds for grades K-4, four pounds for 5-8, and five pounds for 9-12.