

Lesson 16

CURRICULUM INNOVATION

The objective of this paper is to encourage educators and learners to make use of digital textbooks. To be fair, the following information will tell the advantages and disadvantages of digital textbooks. This will also answer the question “why use digital textbooks over traditional printed books?”.

The role of textbooks in the curriculum is vital in the subject of mathematics. This fact is based on a case study in Sweden ([Johansson, n.d.](#)). The study stated that textbooks are part of the intended curriculum as it contains a series of contents. But there are also problems if the curriculum developer fails to learn how to use the curriculum material. The books that are used in this study are a series of books that have continuity.

The first advantage of utilizing digital textbooks is you can manage information efficiently and effectively. Most of the textbooks provide a search capability. If the reader wants to find a specific word or information in the book this feature will save them time. Instead of turning the page just type the word that you are looking for. In computer science, this is coined as “information retrieval”. From the reader's perspective, this will result in a conversational process of information ([Croft, n.d.](#)).

The next advantage is related to the conversational process of information which textbooks are interactive in nature. According to ([Alex Daniel Edgcomb et al., 2015](#)) “Exam scores improved by 13.6% (p-value < 0.001) and project scores by 7.4% (p-value < 0.001) from static to interactive textbooks”. These interactive books are computer programming and mathematics subject books. These books have the capability to print the output of the code and compute the results of the input. This feature will increase the learning experience of the students. Since learning experiences are also part of the curriculum development this is a benefit for the curriculum implementers.

The third advantage is the ability to reference other information with the use of [hyperlinks](#). In the 21st century, the emergence of hypermedia was a paradigm shift in consuming information. A study stated that forcing a reader to search for the next logical piece of information made the material more memorable ([May et al., 1997](#)). We learned that through hyperlinks there is a positive result to learners' cognition.

The last advantage that I will share in this paper is related to our topic in research. There is a technology called Rapid Serial Visual Presentation Reading ([RSVP Reading](#)). This is the rapid flashing of words at a fixed point on the screen. There is a study that RSVP reading has a benefit in perceptual learning. And it also increased the speed of readers by 60% ([Chung et al, 2004](#)).

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This technology is a sub-category of digital textbooks, it only accepts text and flashes it at a rapid rate. If you want to try this reading strategy you can add an [extension](#) to your browser it can also process PDFs that are opened in the browser.

In this part of the paper, you will learn about the disadvantages of digital textbooks. First is eye health risks due to exposure to electronic devices. Digital reading is associated with electronic interaction. This can result in negative effects such as eye fatigue, dry-eye disease, unhealthy vision, and lower quality of life. In a recent study between dry eye disease and digital screen use that symptoms were more prevalent to those people who are exposed for more than four hours a day ([Al-Mohtaseb, Schachter, Shen Lee, Garlich, & Trattler, 2021](#)).

The next disadvantage of digital textbooks is the lack of its accessibility. Acquiring digital textbooks needs internet access for the readers. This disadvantage is more of a social issue in our country. According to the [Statista Research](#) department, there are only 79.7 million people in the Philippines have access to the Internet. This is only more than half of the total population in our country.

Given the advantages and disadvantages of digital textbooks, it is still the better choice over traditional textbooks as a curriculum material. Traditional textbooks also have disadvantages such as their production cost and effect on the environment due to paper production by cutting down trees. Plus RSVP reading solves the first disadvantage of digital textbooks. Reading faster will directly affect the length of exposure to electronic devices. Another is that eye movement also helps the reader to prevent eye health risks. Regarding the second disadvantage, accessibility is also a disadvantage of traditional books. The availability of books is limited its either you buy a copy or borrow from a library.

In the end, digital textbooks are significant in online education this gives us the convenience that we need. And as a part of the future educator's organization, I encourage everyone to practice using digital textbooks for pedagogical purposes. Eventually, through the advancement of technology, these disadvantages will be mitigated. And as an advocate of digital textbooks as curriculum material I also encourage everyone to produce their own digital textbooks. Here is a sample [textbook](#) that I created, it is voluntary work in managing the content of Technology for Teaching and Learning subject.