

***Can Technology Save Our Education?***  
***A Critical Reading of Mohamed Hamoudou's Work on Textbook Digitalization***

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**Abstract**

In his work *The Moroccan Textbook in the Digital Age: Challenges and Bets*, Mohamed Hamoudou described textbook digitalization as an inevitable step toward Moroccan school reform. He claimed that textbook digitalization would contribute to Moroccan education reform and also serve as a stronger alternative to paper textbooks. The latter, the writer explained, would hardly hold out against technological expansion. This paper, however, calls into question the relation Hamoudou tended to establish between school digitalization and education reform. The idea here is that no one can assert with certainty that the two factors are related as long as no study confirms this. This paper argues that while Hamoudou's work remains a solid piece of research, it failed to raise and subsequently tackle fundamental questions that would allow to determine the real share of technology in school reform. Some of these questions are: Does school digitalization enhance the quality of education; or can it only successfully contribute to this when it interacts with other factors, including teachers' competence and the relevance of teaching content? What if all these urgent calls to digitalize schools merely emanate from an inner dread of being left behind, especially as technology continues to invade the world at such an unprecedented pace? Drawing upon various studies and experiences in the field of education and technology, this paper endeavors to resolve these questions, or at least initiate a serious discussion around them.

Keywords: Digital Revolution, Education Reform, Textbooks, Textbook Digitalization

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## **Introduction**

The demand for school digitalization is increasing in the digital age. Countries and regions, wealthy or poor, are all racing towards this goal. However, amid this digital fuss, almost no one ever takes a moment and thinks: what's in it for education? In other words, can the incorporation of information and communication technology (ICT) in education improve the latter's quality and enhance learners' performance?

This paper addresses this question while focusing on the Moroccan context. It offers a critical reading of the Moroccan textbook in the digital age: challenges and bets by Mohamed Hamoudou.

Moroccan education has been wrestling with serious issues, including the deterioration of education quality. According to PISA test results, Moroccan students continue to score low in the three main test focus areas, namely reading, science, and maths. The subject of education has, therefore, triggered heated debate, especially at the academic level. One of the researchers to contribute to this talk is Mohamed Hamoudou. He produced a work entitled *The Moroccan Textbook in the Digital Age: Challenges and Bets*, where he tackled Moroccan education reform plans and actions in the middle of technological development. He argued that textbook digitalization is intrinsic to Moroccan education reform.

This paper is organized as follows. The first part introduces Hamoudou's assumption of the positive correlation between textbook digitalization and education reform. It also describes and discusses Hamoudou's study findings, particularly those investigating the prospects of textbook digitalization in Morocco. The second part of this paper, however, calls into question Hamoudou's assumption while drawing upon the educational experience of the best five performing countries according to PISA test results (2018).

## **Digitalization vs Digitization**

A new lexicon has emerged as a result of technological development. The two words digitization and digitalization, for example, have become common tech buzzwords in recent years. They describe two interdependent technology-related processes. According to Corensek and Kohont (2019, p. 95) digitization refers to the "conversion of analog data (e.g., images, video, text) into digital format." By scanning a text, for example, and converting it into a PDF, digitization "mediates between the material and the intangible, making it a unique process" (96). Digitalization, on the other hand, refers, as Reis et al. put it, "to the technology of digitalizing information" so it can be read and processed by a computer or any other electronic device.

In this context, a digitalized textbook refers to "an intangible book that is accessed on screen or via a video projector player and which offers, in addition to the texts and images paper textbooks contain, a wide range of audio-visual documents" (Berenguer, 2015, p. 27). A digitalized textbook is different from a digitized/electronic textbook, which is the digital converted version of printed textbooks.

Digitalized textbooks, Hamoudou argued, would revolutionize education, allowing new and attractive learning opportunities both inside and outside school.

## **Moroccan Textbook Digitalization (Hamoudou's Study Findings)**

Mohamed Hamoudou conducted an insightful study investigating the prospects of textbook digitalization in Morocco. His study participants included trainee inspectors, trainees at the Educational Planning and Orientation Center, students, and Genie coordinators. Genie refers to a Moroccan program launched in 2005 to generalize ICT in education.

Among the questions Hamoudou's study addressed, two are related to textbook digitalization. The first one sought to determine the time span for the completion of the project of textbook digitalization in Morocco. The second question focused on the respondents' textbook format preferences. The results are as follows.

51% of trainee inspectors (CRE), 53% of trainees at the Educational Planning and Orientation Center (COPE), and 40% of students believe that textbook digitalization is only possible in the long term. 53% of Genie coordinators, however, assume that there is a possibility of digitalization in the medium term. As for textbook format preferences, 93% of trainee inspectors, 73% of trainees at the Educational Planning and Orientation Center, and 63% of Genie coordinators all revealed their preference for traditional textbooks. 39% of students, however, encouraged the adoption of digitalized textbooks.

### **A Brief Interpretation of Hamoudou's Results**

The majority of Hamoudou's respondents place great importance on traditional textbooks. Almost all of them agreed that textbook digitalization is unlikely in the short run. They argued that human and material constraints would hinder the completion of such a project. Instead, they emphasized the need to improve the current textbook at the level of both form and content and encouraged the adoption of digitalized textbooks only as a supplement to printed school materials. Students, on the other hand, showed a positive attitude towards the adoption of digitalized textbooks. Hamoudou attributed this to the fact that this generation is born in the digital age and seems, therefore, more comfortable scrolling the screen than leafing through a book.

### **Hamoudou's Assumption Called Into Question**

Hamoudou's study is a solid piece of work. However, like any scientific work, Hamoudou's work has some flaws. One of the major flaws in his research is that he took the cause-and-effect relationship between textbook digitalization and education reform for granted. He referred to no study that confirms the link. In fact, the true impact of educational ICT resources on learners' academic performance remains undetermined, especially as studies continue to cast doubts on the validity of this relationship.

For example, an investigation carried out in 2014 by the education reporter, Caitlin Emma, revealed that Finnish students didn't need laptops and iPads to do well in international tests. The reporter described a typical morning math class where the teacher is drawing circles on the chalkboard while the students are solving equations using calculators and graphing papers. This implies that technology plays a minor role in Finnish education. Finnish learners' academic success is ascribed, as Caitlin explained, to other factors instead. The most prominent of these are: free education, teachers government collaboration, teaching job valorization, quality-centered education, and absent competition spirit.

These conclusions were supported in a recent article by Larry Cuban. The writer reported the findings of the investigation carried out by the journalist Amanda Ripley more than a decade ago. Ripley found that the two countries that outperformed the US in international tests, namely South Korea and Finland, are having ‘low-tech’ classrooms.

The US government, however, deems investing in educational ICT resources vital to improving education. The former president of the United States, Barack Obama, stated once that “preparing American kids to compete with students around the globe will require ... learning experiences driven by new technology” (Cuban, 2023).

But the government’s education policies are not always approved by the parties concerned, including teachers, and are, therefore, not necessarily put into action. While visiting one of the notable schools in Washington, D.C., the journalist encountered teachers who decided to go low-tech. When asked why, one of the teachers replied, “If I were designing my ideal classroom, there’d be another body teaching. Or there’d be 36 hours in the day instead of 24” (Cuban, 2023). The subject made no reference to technology. Another teacher added that:

Sometimes low-tech simply facilitates goals more effectively. Take a lesson on thesis statements for example. Each student has a thesis statement prepared (in theory) and is ready to share it with their group. I would love to use my blog for students to share and critique each other’s work, but it’s not the most logistically effective strategy. Marisol left her computer at home, Jordan can’t remember his password, and Justin can login but can’t seem to figure out how to post a comment. Sure, schools should be teaching these skills, but they’re not tested on the California Subject Tests. Technology integration has left technology instruction up to content teachers, while I learned the basics of computing in my sixth grade computer class. What’s my main goal? Teaching thesis. In this scenario, technology actually impedes my main goal instead of facilitating it. It’s much easier and more effective to get out the black markers and the butcher paper and have students make group posters and present them (Cuban, 2023).

Supporting the American teachers remarks, Ripley and some observers of high-rate teachers concluded that

both low-tech and high-tech machines can surely help students learn but it is the teacher’s lesson objectives, knowledge of the subject, rapport with students, and a willingness to push and support them that count greatly in what students learn rather than anything intrinsic within the devices used.

A recent study carried out by Yaging Wang and Yashuang Wang yielded valuable results regarding this topic. The study attempted to explore the relationship between educational ICT resources, students’ engagement, and students’ academic performances. It targeted the five highest-achieving countries according to PISA test results, namely Finland, Hong Kong, South Korea, Singapore, and the United States. The study found that there is a negative association between educational ICT resources and students’ academic performance. The statistics revealed that the students with the lowest accessibility to school and home ICT resources—the Singaporean students—got the best scores in reading, mathematical and scientific literacies. They are followed by Hong Kong, South Korea, and Finland. The American students performed less well than all the four countries and regions, bearing in mind that the United States reported the highest rates of school and home connectivity. And this finding is obviously

in line with what has been stated earlier about the state's prioritization of educational ICT resources investing.

However, the study found that there is a positive correlation between educational ICT resources and ICT engagement. The latter is defined as "a crucial individual concept for developing and adapting ICT skills in a self-regulated way, which supports the acquisition of new knowledge and skills throughout the lifespan in both formal and informal ways using ICT" (Zylka et al., 2015, as cited in Wang & Wang, 2023). The concept of ICT engagement underscores the positive impact of educational ICT resources on students' academic motivation and engagement. Students' engagement is a key variable here because it mediates, as the study concluded, the relationship between educational ICT resources and academic performance. And this mediating impact varies by country and region. For example, one of the study findings revealed that the United States is the only place where the relationship between educational ICT resources and students' academic performance is positive. The writers ascribed this to the positive and mediating effect students' engagement exerts. This implies that ICT educational resources and students' engagement are two interdependent variables. The first contributes to learning when the second can serve its mediating function right. Similarly, educational ICT resources boost students' engagement when these are wisely used and well selected.

Overall, the Wangs' study reflects one of the rare scientific attempts to resolve the controversy around the nature of the relationship between educational ICT resources and students' academic performance. It remains, therefore, a valuable contribution to the field of education and technology, even though the writers questioned the validity of their own findings in other contexts.

Having said this, doubts over the positive impact of educational ICT resources on learners' academic performance continue to multiply as the universal pressure to digitalize schools increases. Paradoxically, even Mohamed Hamoudou, who's been vehemently advocating for school digitalization, did not seek to hide the dark side of textbook digitalization. The following is a list the writer formulated comparing the advantages and disadvantages of textbook digitalization.

### **Textbook Digitalization Advantages**

- Enhances learners' motivation
- Promotes independent learning
- Ensures equal opportunities for all learners
- Allows textbook content fast updating

### **Textbook Digitalization Disadvantages**

- Causes internet addiction
- Hinders learning because of technical issues and low connectivity
- Creates demographic discrepancies
- Causes mental skills decay
- Increases the risks of hacking
- Can lead to serious health complications

One important conclusion to deduce from Hamoudou's list is that textbook digitalization has got as many benefits as drawbacks. Worse yet, the disadvantages of digitalization are very

likely to outnumber its benefits, especially as technology continues to develop so rapidly, slipping out of human control.

## **Conclusion**

It is important to remember that technology in general and educational ICT resources in particular are a means and not an end. Investing in them is, therefore, a good deal only in so far as it contributes to improving education. In addition to this, teachers set their own lesson objectives and are the most qualified ones to measure the efficiency of their teaching tools. Thus, the means they incorporate in class should remain their choice.

The Wangs were right in questioning the relevance of their findings to other contexts. Countries and regions are different, especially at the economic level. Wealthy countries, for example, are privileged enough to provide educational connectivity. Consequently, evaluating schools' academic performance by their ICT use frequency and their digital competence reinforces learning inequalities, nationally and universally, and constrains educators' teaching creativity.

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