

How data obtained through digital textbooks platforms is used to enhance student learning

EXECUTIVE SUMMARY

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This Case Study addresses how data generated from digital textbook platforms can be used to enhance student learning. Conducted within the framework of the Agile EDU project, the study describes two participating school clusters under the Ministry of Education's Digital Textbooks Pilot-Project. The focus is on the Agile EDU pillar "Data in Use for Teaching and Learning," while also considering implications related to data governance and privacy.

Context

Launched in 2020, the Digital Textbooks Pilot-Project aims to modernise the Portuguese education system by promoting the dematerialisation of textbooks and fostering more flexible, interactive, and inclusive learning environments. Digital textbooks, hosted on publisher-managed platforms, not only replicate printed content but also offer interactive resources, student progress tracking, and real-time feedback. The project has expanded over several phases and involves school leaders, coordinators, teachers, students, parents, and private publishers. By exploring the digital practices and experiences of these stakeholders, the study sheds light on the pedagogical potential of educational data and the systemic changes required for effective data usage in schools.

Key Findings

In line with the study's objective to understand the pedagogical use of data obtained from digital textbook platforms, several key findings emerged. These findings highlight both the potential, and the challenges associated with data-informed teaching.

- Data use in teaching and learning: teachers use platform-generated data, such as completion rates, quiz scores, time spent on tasks, and engagement levels, to personalise learning, adapt instruction, and identify areas requiring support. Real-time feedback enhances student autonomy and promotes formative assessment practices.
- Data literacy: Despite the value of educational data, it is important to further develop teacher training in data analysis and interpretation. This will improve their skills to make informed pedagogical decisions.

Recommendations

Based on the evidence presented, this case study can support some recommendations:

- Establishing a framework recommendation for data use in schools: The absence of unified standards risks data fragmentation and underuse. A framework recommendation would ensure coherence across schools, clarify roles, reinforce GDPR compliance, and enable interoperability between platforms and systems.

- Promote Continuous Professional Development (CPD) in data literacy: Ongoing training in data-driven pedagogy, digital literacy, and ethical data use is important. CPD initiatives can empower teachers to interpret data with confidence, foster innovation in teaching, and promote evidence-based instructional decisions.

Conclusion

This case study demonstrates that data collected from digital textbook platforms can offer valuable opportunities to support more personalised, responsive, and inclusive learning. When used effectively, data generated through these platforms allow teachers to tailor instructions, provide timely feedback, and monitor student progress with greater precision.

The findings also reveal some constraints that could limit the full pedagogical potential of digital data. These include the need to strengthen data literacy among teachers and students, to improve the integration and accessibility of platform data, and to further develop frameworks that support the ethical and effective use of educational data.

Addressing these areas will be essential to unlocking the full potential of digital resources and ensuring that data is used meaningfully to enhance teaching practices, empower learners, and can support evidence-informed decision-making.



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