

Education data hub in France

EXECUTIVE SUMMARY

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Context

In France, educational policy is the responsibility of the State, which establishes the laws governing school organisation, curricula, teacher recruitment and funding. However responsibilities are shared with local and regional authorities, and many different players produce and collect data.

In order to make a more effective use of the data generated by teaching and learning activities, the Ministry of Education has drawn up a data policy roadmap of which one of its components is an Education Data Hub created to improve the ability to use all available data. These data are generated as part of the public education service mission and could be used to assess the results of public policy outcomes, improve existing services or create new services. The Education Data Hub has been included in the national acceleration strategy for teaching and digital technology, in the 2021-2023 roadmap on MENJ data policy, as well as in the 2023-2027 digital strategy for education. Even if it is not implemented in the originally planned form, the studies and resources mobilised during the prefiguration phase will be used to meet identified needs in forms more adapted to the field and technological advances.

This case study investigates how the French Ministry of Education explored the implementation of the data hub to improve governance, research, teaching and learning while navigating a complex landscape of legal, ethical, technical and organisational challenges.

At the heart of the study is the question of how data can be made accessible and usable in a highly fragmented education system. It highlights the difficulties caused by sometimes incompatible information systems, decentralised responsibilities and varied local practices. Despite efforts to centralise and structure data collection, access remains limited. The study highlights the importance of having data that, once collected, can be used effectively to support improvements in education.

Legal and ethical considerations are another central focus. The case study explores how European and national regulations, especially the General Data Protection Regulation (GDPR), are understood and implemented in schools. It reveals a widespread uncertainty and cautiousness among educational staff, who often view regulations as barriers to action rather than as frameworks that enable responsible data use. This misunderstanding leads to underuse of potentially valuable data, particularly when it comes to tracking student progress over time. The study points to the importance of training and support from data protection officers to help institutions navigate their rights and responsibilities.

The case study also takes a close look at how data is being used – or could be used – to improve teaching and learning. It explores the potential of adaptive learning and learning analytics tools, particularly those developed in partnership with research laboratories and information technology companies as part of initiatives such as P2IA. However, research is needed to confirm their long-term impact. The ministry's continued investment in these technologies reflects its commitment

to using data not only for administrative tasks, but also as a means of empowering those involved in the education system and fostering digital competence among students.

The case study illustrates the evolution from an ambitious national platform to more concrete and targeted use cases based on local needs. It reveals the tension between innovation and regulation, the challenges of building trust and understanding around data, and the need to develop a culture of responsible data use within the education system.

| Data governance

The education data platform project faces structural and organisational challenges. Many information systems across schools and institutions are heterogeneous, making data centralisation and interoperability complex. Data can be collected, but transforming it into something usable remains difficult due to legal, technical and resource constraints. Sensitive or shared data cannot easily be brought under a single governance structure, and many actors, from local authorities to associations and EdTech companies, operate with different agreements and priorities.

Data quality also emerges as a key concern. In many schools, data is not entered consistently, because users receive little feedback or see no clear purpose in the process. Data collection tools can be seen as cumbersome, increasing workload and causing redundancy. However, simple and effective tools (such as automated absence notifications to parents) demonstrate how data use can support daily operations while respecting privacy regulations.

During the prefiguration phase, a broad range of stakeholders: educators, local officials, researchers, and EdTech companies all expressed strong interest. Each group articulated its own expectations: teachers, for instance, envisioned tools to help identify student needs or reduce correction time, while local authorities wanted insight into how their investments in digital tools are being used.

EdTech companies play a dual role in this ecosystem, both as data users and data providers. Many are eager to access ministry-held data, such as national assessments, but are more reserved when it comes to sharing their own datasets, especially with competitors. A few collaborative efforts have emerged, particularly around the use of learning traces and shared standards, even if these remain exceptions. Rather than pursuing a centralised model, the ministry now supports a more distributed and use-case-driven approach to educational data. This includes efforts to improve data quality, encourage responsible use, and develop tools that meet the diverse needs of the educational field while maintaining ethical oversight.

| Regulation and rights privacy

The second key focus of this case study was to better understand how European and national regulations translate into actual practices, and how legal, ethical and regulatory frameworks shape

data use. While schools often comply with regulations, their approach tends to be overly cautious which is driven by limited understanding and fear of missteps. For instance, educators are often reluctant to retain student data beyond one year, even when multi-year tracking could support better educational outcomes. This highlights a broader issue: regulatory frameworks are often viewed as obstacles, when in fact it is the lack of understanding and training that hinders meaningful data use.

Interestingly, when educators were asked what they would do if they could retain and use data, their perspective shifted—from restriction to opportunity. This confirms the importance of training and awareness to foster confidence and responsible innovation.

Once specific needs were identified, it became clear that full centralisation was not always necessary, and that the ministry does not need to govern all data uses. In some cases, decentralised models or local governance may be more appropriate. Another challenge is the formal articulation of why data is needed. Data protection officers have an essential role to play here, by educating and guiding institutions to understand their rights and responsibilities.

A tension exists between the desire to access data and the ability to define its use. In initiatives like *ÉduPilote*, where objectives are specific and shared among actors, the problem is far less pronounced. But in a larger, more open-ended project like the education data platform, aligning diverse expectations proved difficult. The ecosystem was not yet ready for such an ambitious effort, and the core team was too small to meet the scale of the task.

Furthermore, reciprocity in data sharing remains a critical issue. Many actors expect the ministry to provide access to data, but are less willing to share their own, particularly EdTech companies, who view their data as proprietary. Building a culture of mutual contribution is key to long-term success. A service-oriented approach, where data entry and sharing are directly linked to useful tools, has been identified as easier for people to understand and adopt.

| Data in use for teaching and learning

The development of digital skills among students and teachers, particularly with regard to understanding and using data for teaching and learning, is a central concern. While data protection remains essential, the focus is on acquiring the knowledge and training that will enable educators to improve educational practices and develop students' digital citizenship. The Ministry of Education sees this as part of its mission: to prepare students to be active and informed citizens who are also capable of using, and even designing, data-based tools.

EdTech companies have a key role to play in supporting this transformation. For teachers to integrate new technologies effectively, they need clear evidence that these tools improve pedagogy. Use cases developed as part of initiatives such as P2IA (Partnerships for Innovation and Artificial Intelligence) offer valuable insights, particularly with regard to the analysis of learning traces that reveal how students engage with digital content. These partnerships which include

research laboratories, provide a better understanding of the processes that support differentiated and personalised learning.

Although the wider national data platform project has been put on hold, work on adaptive learning tools continues. The Ministry continues to invest in these solutions, which aim to make the most of the data collected to better understand learning processes and refine future tools. The openness of data, supported by research, is seen as essential to progress in this area.

From the very beginning, the hub team working on this initiative has been committed to make complex concepts such as algorithms, artificial intelligence, open data and the digital commons understandable and usable. The 42 actions described in the 2021–2024 roadmap are linked to concrete needs on the ground, ensuring that digital innovation remains directly linked to the daily realities of the education system's actors.

Recommendations

To leverage the potential of smaller digital datasets and cultivate more engaging, playful and meaningful learning experiences, it is essential to develop future competencies for students, teachers and across the school system.

For students, this involves cultivating strong communication skills and the capacity to meaningfully collect, understand and interpret data. They should develop a circular understanding of data, engaging in iterative processes through authentic projects relevant to their daily school lives. Practical experience is crucial for students to learn to identify data limitations and use data constructively. Engaging tasks, such as a 'treasure hunt' for data, can make data collection more meaningful.

Teachers are key to empowering students to creatively and collaboratively collect, analyse and utilise data to enhance their learning environments. This requires teachers to facilitate students in posing meaningful questions and designing data collection processes. Teachers should guide students in the critical analysis and interpretation of data, addressing potential biases and considering context. Integrating creativity helps students take ownership and use insights for action. Professional Competence Development (CPD) for teachers should focus on enhancing their own data literacy, their ability to facilitate student data literacy and computational empowerment, and pedagogical approaches for playful, open-ended learning. Teachers need to embrace dynamic roles and allow sufficient time for student investigations.

The school system and its leaders must fundamentally rethink the approach to data collection and use, moving away from often externally imposed, large-scale data that can feel meaningless. It is recommended that municipalities collaborate with teachers on data collection. Schools should prioritise meaningful, small-scale data projects generated by students about their learning and wellbeing. Crucially, the system must value and integrate student-generated data and the knowledge derived from it. School culture and leadership must support teachers exploring new

roles and seriously consider student-produced knowledge, potentially requiring flexible scheduling. Furthermore, teacher education must incorporate data literacy, covering both the use of learning data and exploratory practices.

Ultimately, these recommendations aim to enhance computational empowerment and wellbeing by fostering a more engaging, relevant, and collaborative approach to data within schools, driven by the authentic needs and perspectives of students and teachers.



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