

Data-Informed Teacher Professional Development in Greece

Case studies: Data Literacy initiatives in schools

Introduction

This case study is one of five developed from interviews with members of school teams and national policy authorities who have contributed to school initiatives focused on the development of teachers' data literacy or the implementation of practices of using data for teaching and learning in schools. The schools are located in five countries: Malta, Italy, Croatia, Slovenia and Greece. The data literacy initiatives represented in these

cases have been implemented at different levels: two of them represent data literacy initiatives developed by schools, one of them has been developed by teachers, and two of them have been developed at national level, with the case studies focusing on how particular schools have implemented it. The purpose of data collection and analysis varies between case studies: in some cases, improving teaching quality is the main focus, in other cases, it is observing and monitoring students' performance, and in one case the focus is on preventing early school leaving.

The intention of these case studies is to illustrate how data can be leveraged to improve education processes and inform education policy at school level. Therefore, we hope they help as inspiration and illustration for other educators and schools. To navigate these case studies, we recommend that you take a look at the yellow text box. Here, you can find a summary of the key characteristics of each of them. Bear in mind that each school is situated in a different location and context. Therefore, to replicate an initiative you may want to modify its activities. We have included a section about "Transferability" which may help in adapting the initiative to your context.

The EVIDALI project¹ (Evidence-Informed Data Literacy for Policy & Practice), coordinated by European Schoolnet, is an Erasmus+ European Policy Experimentation project that brings together ministries of education, regional authorities, research institutes, and teacher training organisations from four education systems (Malta, Castilla y León in Spain, Madeira in Portugal, and Trento in Italy). Its overall aim is to strengthen the capacity of policymakers and practitioners to design and implement effective, evidence-informed data literacy strategies for schools. The project aims to take an early step in understanding how data can be more efficiently utilised to improve teaching and

This Data Literacy Initiative at a glance

Country: Greece

Age of students: 12 to 18 years

Level of implementation: School level

Focus on the initiative: Teacher professional development, digital skills enhancement.

Keywords: professional development training; digital technologies; supportive classroom climate; international collaboration.

¹ EVIDALI project website: <https://evidali.eun.org/>

learning processes at schools. This comes at a crucial time for digital education, with the introduction of Artificial Intelligence (AI) in education, new regulations surrounding data privacy, and new approaches to keep young students safe in a digital world. The project examines existing different data literacy initiatives in primary and secondary schools across EU Member States and explores how these initiatives are being implemented in schools.

National context

The education system in Greece

The Greek education system is centrally organised and supervised by the Ministry of Education, Religious Affairs and Sports, which is responsible for curricula, staffing and overall policy. Compulsory education lasts 11 years and includes two years of pre-primary education (Nipiagogeio), six years of primary education (Dimotiko scholeio, ages 6–12), and three years of lower secondary education (Gymnasio, ages 12–15). Primary and lower secondary education provide general, comprehensive education, while upper secondary education (Lykeio, ages 15–18) is optional and offered through general (Geniko Lykeio) or vocational (Epangelmatiko Lykeio) pathways. In addition to mainstream schools, other types of schools are offered, including music, art, special education and model schools, which combine general education with specialised curricula tailored to students' talents or specific needs (Eurydice, 2025).

The Greek National Data Literacy Initiatives

The national strategy **Greek Digital Transformation Bible 2020–2025** emphasises the development and use of data as a key pillar of public sector modernisation, including education. The strategy prioritises the creation of interoperable data repositories, open data systems, and digital registries to improve public administration, transparency, and evidence-based policymaking across sectors such as education, health, and the economy. The strategy also promotes digital skills development and highlights the importance of data literacy and digital competence for citizens and educators. These initiatives aim to enhance data accessibility, interoperability, and effective data use in public administration and education and they support data-driven decision-making and improving service delivery across sectors (Ministry of Digital Governance, 2020).

School context

This case study focuses on the experience of **Theodora Geniou**, Deputy Director of the **Music School**², located in Serres in northern Greece. The Serres Music School is a public secondary music school that provides six years of education, covering both **lower secondary** (Gymnasio) and **upper secondary** (Lykeio) levels. It was established in 1994 and offers students the full national curriculum alongside extensive music education. It is an urban school that serves students from both the city of Serres and its surrounding areas. Students enter the school after completing primary education at

² <https://www.musikoserron.gr/>

approximately 12 years of age through entrance examinations that assess musical perception and vocal ability, and they graduate at around 18 years of age, with the opportunity to pursue higher education in music or other academic fields. The school also offers specialised facilities such as music classrooms, amphitheatres, and performance spaces, and students regularly participate in concerts and cultural events, so that both their musical and academic developments are supported. The school is attended by 400 students taught by 100 teachers (Music High School of Serres, 2026).

Implementation

Data literacy initiative

At the **Serres Music School**, a data-informed initiative was introduced to support **teacher professional development** through a **structured needs analysis process**. At the beginning of the school year, the school leadership initiated a process combining digital data collection with collaborative reflection to identify teachers' professional development priorities. This data literacy initiative used a mixed method of data collection, in that it integrated quantitative data collected through the questionnaire with qualitative insights from the consultations, discussions and self-reflection. This process consisted of informal discussions, self-reflection and focus group consultations with teachers, which was then followed by the development and distribution of a digital questionnaire to the school's 100 teachers. The main purpose of the questionnaire was to prioritise teachers' needs. It included questions related to use of digital technologies, supportive classroom climate, student well-being, and engagement with different European education initiatives, all of which were frequently raised in discussions and consultations. The collected data was then analysed at the school level and used to guide decision-making regarding professional development over the course of the upcoming academic year. Teachers involved in the initiative engaged in and monitored the implementation of the identified priority areas and, at the end of the year, reviewed and compared the outcomes against the initial needs analysis to evaluate the effectiveness of the interventions.

Problem identification

The implementation of this data literacy initiative responded to several identified professional development needs within the school. Teachers at the Music School are highly engaged in **artistic education, particularly in music, arts and interdisciplinary projects**. However, many teachers were less familiar with **European education initiatives**, such as the European School Education Platform and the European Education Area, as well as with **digital education tools and artificial intelligence (AI) and emerging technologies**. In addition, the school had identified ongoing needs related to **improving student relationships, promoting inclusion, preventing bullying and fostering a safe and supportive learning environment**. The recent installation of interactive whiteboards, the availability of tablets, the use of mobile phones and the increasing relevance of AI applications further highlighted the need for training in both the technical and pedagogical use of digital technologies. These needs were also evident in the mandatory annual school self-evaluation process implemented in all Greek schools, which requires reflection across three main pillars: pedagogy and learning, school management, and teachers' professional development. These findings also contributed to

understanding professional development gaps and implementing targeted, data-informed interventions at school level.

Activities

The professional development activities were grounded in a data-informed process that enabled teachers and school leadership to collect, analyse and use data to guide decision-making. The process began with consultations in the form of a focus group between school leadership and teachers to explore their professional interests and perceived training needs. These discussions were followed by the digital distribution of a questionnaire, which enabled the systematic collection of data from the entire teaching staff. The questionnaire was developed based on the focus group consultations. The responses were analysed and prioritised by school leadership to identify key professional development needs. This needs analysis formed the basis for organising teachers into special interest working groups focused on priority areas such as innovation and digital education, international cooperation, inclusion and support for students with special educational needs, prevention of bullying, and strengthening relationships among students, teachers, and families. The groups were interdisciplinary, comprising teachers from different departments who had similar interests, preferences, needs, expertise or experiences. Using these data-informed insights, internal and external experts were engaged to deliver targeted training activities. These included webinars delivered by psychologists on promoting effective communication and inclusive school environments, as well as workshops led by internal staff on digital education and the pedagogical use of interactive whiteboards. External university experts also provided introductory training on AI and its educational implications. Hands-on workshops supported teachers' engagement with European initiatives such as eTwinning and Erasmus+. For example, data from the needs analysis highlighted teachers' limited confidence in using newly installed interactive whiteboards, which led to targeted professional development workshops delivered by the school's IT teacher. Furthermore, a language teacher with experience in eTwinning projects shared her experience and encouraged her peers to join the eTwinning community. Through this process, teachers actively engaged with data by contributing their input, reflecting on identified needs, and participating in evidence-based professional development. As a result, teachers developed increased confidence in using digital tools and participating in European collaboration projects.

Below follows an account of how issues identified through data collection were targeted:

.

Example of targeted actions

Use of interactive whiteboards

Following the needs analysis, which identified teachers' limited confidence and experience in using newly installed interactive whiteboards, the school organised a targeted professional development action led by the school's IT teacher. This action included a series of practical workshops focused on the pedagogical integration of interactive whiteboards into classroom teaching. The workshops emphasised not only technical skills but also instructional strategies to enhance student engagement and participation. As a result, participating teachers increased their confidence in using the interactive whiteboards and began incorporating them more frequently into their teaching practice, supporting more interactive and digitally enriched learning environments.

Use of data

In the context of the Serres Music School, digital education has not traditionally been a central focus of teaching or professional development, as the school's **primary emphasis is on music, arts and humanities education**. As a result, digital competence has not been widely regarded as a specific pedagogical goal or priority. While students regularly use digital technologies in their everyday lives and digital tools may occasionally be used to support teaching and enhance lesson quality, their integration has not been systematic or explicitly embedded in the school's educational approach. Similarly, topics more closely associated with STEM education or AI have not been widely explored, as they fall outside the school's main artistic orientation. However, the needs analysis process helped highlight this gap and raise awareness among teachers of the importance of digital education and its potential to enrich teaching and learning, even within an arts-focused educational environment. Following the implementation of these targeted activities, more teachers have become confident and **empowered to use digital tools effectively in their practice**, engage in European initiatives such as **eTwinning**, and actively contribute to the preparation of the school's **Erasmus+ project** proposal.

Challenges and solutions

The implementation of this initiative also revealed several challenges related to data collection and the effective integration of professional development into school practice. One key challenge was **teachers' reluctance to participate in additional surveys**, as some perceived data collection as an additional **administrative burden** to their already full workload or expressed concerns about how their data might be used. This **limited the systematic collection** of feedback data on the effectiveness and impact of the training activities. Another challenge was that some training activities, particularly those related to AI, were primarily theoretical and did not immediately translate into practical classroom application. To address these challenges, the school adopted a gradual and participatory approach and voluntary engagement of teachers. Over time, this approach helped build trust, increase teacher engagement, and develop a core group of teachers willing to participate in

digital and European initiatives. As a result, the school has strengthened its capacity to implement digital tools, expanded participation in European projects, and laid the groundwork for more structured and data-informed professional development in the future.

Outcomes and added value

The initiative resulted in **gradual** but visible progress in strengthening teachers' digital competence and engagement with European education initiatives. Even though not all teachers have gained the same level of confidence in using digital technologies and only a few are now participating in eTwinning and contributing to the preparation of the school's Erasmus+ proposal, it shows that **sustainable change requires time and continuous effort**. In addition to that, more students are now actively engaged and motivated to participate in digital and European initiatives.

Impact

The initiative has had a positive impact on both teacher professional development and the school's overall capacity for innovation. It contributed to a **gradual shift in teachers' attitudes towards digital education and increased their confidence and willingness to integrate digital tools into their teaching practice**. The initiative also strengthened teachers' engagement with **European programmes**. At the organisational level, the school enhanced its ability to use **qualitative and quantitative data** to identify needs, plan targeted interventions and support continuous professional learning. In addition, the initiative fostered greater collaboration among teachers and increased student involvement in digital and international activities. The initiative served as the basis for sustainable, data-informed school development and future projects guided by systematic data collection and analysis.

Lessons learned and recommendations

- **Data-informed approaches must be introduced gradually.** Teachers may initially perceive data collection as an additional burden, so it is essential that they understand its purpose, relevance and benefits for their teaching practice.
- **Skills, collaboration and support are necessary for effective data use.** Using data requires digital competence, basic data interpretation skills and familiarity with digital tools. Collaboration among teachers and institutional support contribute to a great extent to effective use of data.
- **Intrinsic motivation and reflective practice drive engagement.** Teachers are more likely to participate when they understand the purpose and value of data use. Reflective practice helps teachers recognise their professional needs and supports the use of data to guide their own learning and teaching improvement.

Transferability

This initiative is highly transferable to other schools, particularly those **seeking to strengthen teacher professional development through data-informed approaches**. The process relies on accessible and low-cost tools, such as digital questionnaires and collaborative discussions, which can be easily implemented in different educational contexts. Its gradual approach makes it suitable for schools with varying levels of digital readiness, including those where digital education is not yet a central

priority. By combining **needs analysis, discussions and teacher collaboration**, the model can be adapted to different subject areas, school types and national contexts.

Conclusion

This case study demonstrates how a gradual, data-informed approach can support targeted teacher professional development. Through **consultations, questionnaire-based needs analysis, and collaborative reflection**, the school was able to identify professional development needs and implement targeted training activities aligned with teachers' interests and institutional goals. The initiative contributed to increased teacher confidence in using digital technologies, greater engagement in European education initiatives such as eTwinning and Erasmus+ and strengthened collaboration among teachers. Importantly, it also helped establish foundational data literacy practices, enabling the school to use data more systematically to inform decision-making and professional learning.

Acknowledgements

Ms Theodora Geniou, Deputy Director of the Serres Music School, Greece, has contributed to the collection of information for this study. We are grateful for her contributions.

References

Eurydice. (2025, April 22). *Overview: Greece*. European Education and Culture Executive Agency, Eurydice. <https://eurydice.eacea.ec.europa.eu/eurypedia/greece/overview>

Ministry of Digital Governance. (2020). *Digital Transformation Bible 2020–2025*. Government of Greece. <https://digitalstrategy.gov.gr/en/>