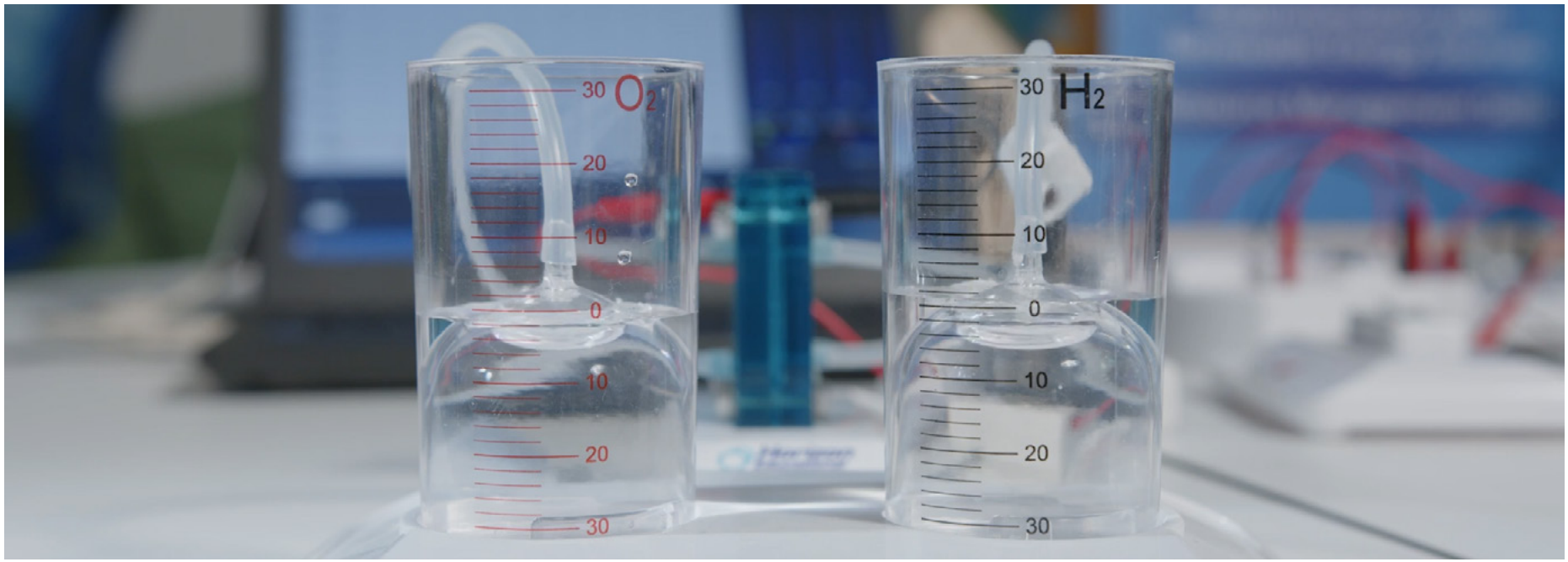
IK DIGITAL INCUBATOR AND THE LED PROJECT

The digital transformation, with its increasing impact on daily life, has changed society and the economy, highlighting the need for higher levels of digital skills within education and training systems and institutions.

How can we prepare students for jobs that have not yet been created, to face social challenges we cannot yet imagine, and to use technologies that have not yet been invented? How can we empower people to thrive in the future? These are pressing questions today, and there is a clear need for us to be prepared.

The COVID-19 pandemic accelerated the need for the adoption of digital technologies in education and exposed challenges and inequalities in access, as well as issues related to the digital capabilities of educational and training institutions, teacher training, and overall levels of digital skills and competencies.

The Path to the Digital Decade Policy Programme sets out the EU's goal of developing both basic and advanced digital skills and capabilities to drive digital transformation. The programme outlines the EU's ambitious targets: ensuring that 80% of adults have at least basic digital skills and reaching 20 million employed ICT specialists. It also promotes greater access for women in this field and aims to increase the number of ICT graduates by 2030.



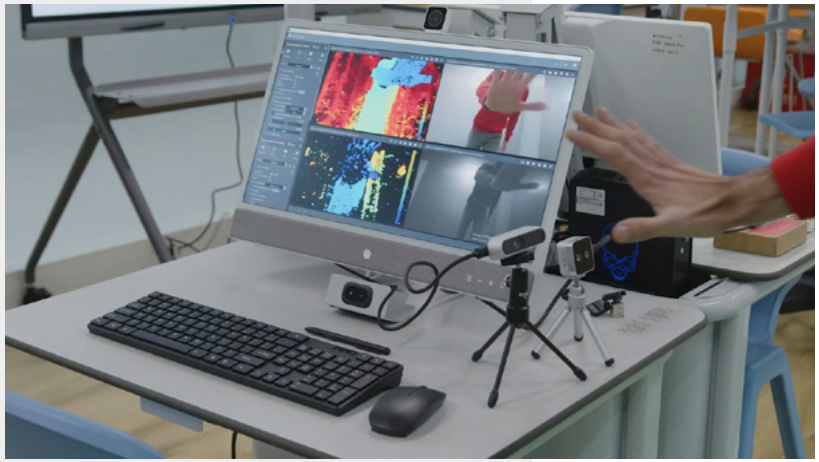
The LED Project in Portugal

In 2023, the Portuguese General Secretariat of the Ministry of Education and Science (SGEC) identified the need to create Digital Education Laboratories (LED) for all students in the 2nd and 3rd cycles of basic education and in secondary education, as part of the Digital Transition in Education component defined in the Recovery and Resilience Plan (PRR). A public tender was launched for the installation of LED labs in schools covering the 2nd and 3rd cycles of basic education and/or secondary education, with the goal of supporting schools in integrating digital technologies into the teaching and learning process.

The goal was for the LED labs to serve as learning support spaces, offering both teachers and students access to and use of technological resources and equipment, closely aligned with the development of curricular and/or extracurricular activities. With these resources and tools, students would be able to carry out practical activities, research and organize information, model, manipulate variables, conduct experiments, analyze results, automate processes, and create artefacts and solutions, among other tasks — all of which enhance their learning experience and contribute to the development of their skills.

To support these pedagogical dynamics, Learning Scenarios — among other materials — would also be made available, applicable to various disciplinary and interdisciplinary contexts. These resources were provided to schools so that teachers could use them as a basis to create or adapt their own scenarios and implement them with their students.

Drawing on 36 years of experience in technology implementation and large-scale projects worldwide, jp.ik developed the ideal solution to meet this need. The LED project represents the national-scale, real-world implementation of the ik Digital Incubator—our solution designed to help reduce the digital divide and provide fair and broad access to 21st-century digital skills.

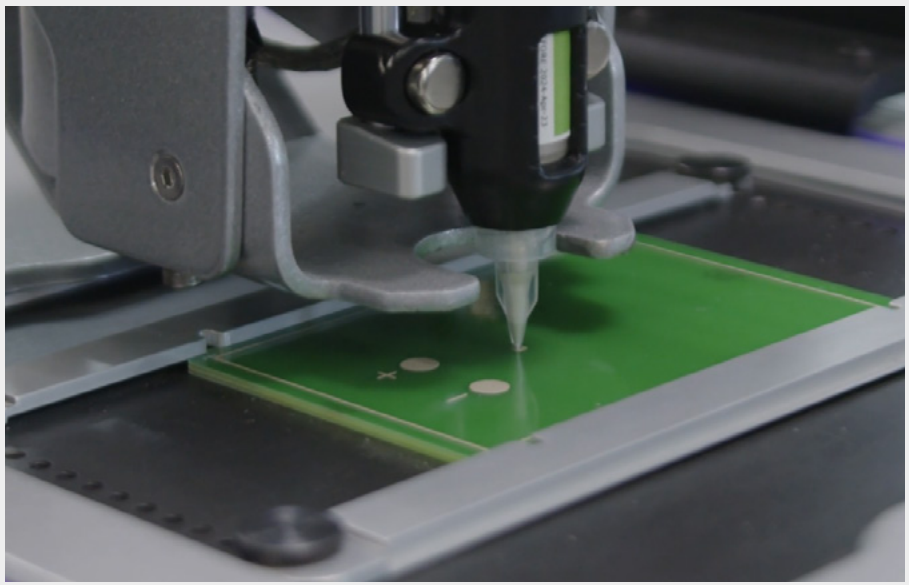


From lack of infrastructure to meaningful integration of technology in Education

Throughout jp.ik's journey in the education technology sector, the first major challenge was ensuring access to technology for both students and teachers. Once this obstacle was overcome, other challenges quickly emerged, notably the lack of adequate infrastructure to support efficient digital teaching.

Based on this infrastructure need, we developed the Community Learning Center (CLC), an integrated solution with a simple and fast implementation process aimed at bridging infrastructure gaps and providing a more accessible, modern, and inclusive learning environment. Building on the CLC, we refined the concept and, drawing inspiration from models such as the European SchoolNet Future Classroom Lab, developed the Education Innovation Hub. This concept was designed to fulfill our intention of creating an innovative environment, offering new learning experiences that develop future-ready skills in students.

The main goal was to create a space that brought together all the conditions for meaningful and intentional integration of technologies in education. Thus, building on all the previous concepts and supported by years of experience, the ik Digital Incubator (ik DI) was born. As the name 'incubator' suggests, the role of this solution is to support the (re)birth of skills adapted to the digital world and accessible to everyone.



A holistic perspective on teaching and learning

The impact of technological transformation on how we live, study, and work—especially with the recent development of AI—demands a paradigm shift in education. To harness the transformative potential of technologies and create meaningful educational experiences, ik DI offers a layout that is both material and, above all, pedagogical, aimed at developing a holistic perspective on teaching and learning, aligned with the Sustainable Development Goals.

To ensure the transformative impact of Edtech, it is essential to integrate them into learning environments with a clear pedagogical intent, following key principles of Learning Design: the ik DI are designed to be collaborative spaces for experimentation—Hands-on, Minds-on, and Hearts-on—where active, project-based learning methodologies are employed, and where students are the main protagonists in the learning process.

These spaces are designed to promote the holistic empowerment of students, following a human-centered digital literacy approach that includes the learning of technical skills related to STEAM fields, as well as essential socio-emotional competencies for the future, such as critical thinking, problem-solving, communication, and citizenship. At the same time, these spaces address not only access to educational technologies but, more importantly, access to quality, inclusive, and equitable education. Several academic studies argue that these learning environments have the potential to democratize education because they can accommodate different learning styles and adapt to the diverse needs of students, thereby democratizing access to essential skills for building a digital society that is increasingly green.

To support education systems in the process of educational transformation, the ik DI offers an integrated solution, designed in close collaboration between technology experts and jp.ik's pedagogy team. This solution includes a phased implementation process, encompassing planning, capacity building for educators, and impact monitoring of the project. In addition, jp.ik's pedagogy team continuously conducts research and curates educational experiences that can be implemented in these spaces. Currently, over 240 activities are available, totaling around 520 hours of learning.

Selection and implementation of equipment within the educational ecosystem

The selection of the equipment that makes up the ik DI was based on jp.ik's internal expertise in the areas of Technology, Engineering, and Pedagogy, as well as its years of accumulated experience in implementing educational technologies on a global scale.

In alignment with the European Digital Education Action Plan (until 2027) guidelines on digital education, and best practices for integrating STEM education into the curriculum, six key factors were defined in terms of functional and strategic requirements:

1. **Interdisciplinary collaboration:** Creation of synergies between scientific, technological, sociocultural components and extracurricular activities.
2. **Educational relevance:** Project-based methodology, promoting active and collaborative learning.
3. **Student-centered approach:** The student as the main actor, with the freedom to test, experiment, and learn at their own pace. Includes content for different educational levels with increasing complexity.
4. **Development and Prototyping:** Emphasis on hands-on experimentation, continuous review and improvement, aligning the process more closely with the labor market.
5. **Adoption of industrial standards:** Robust, industry-aligned equipment ensuring authenticity and greater durability.
6. **Micro certifications:** Additional certifications in areas such as AI, networking, software and hardware development, enabling dual certification for students.

The ik DI solution has been designed to be modular, flexible and scalable, and can be implemented fully, partially, in phases or as a proof of concept. Given the ongoing investment in technology in education, this approach is seen as essential for today's teaching and learning challenges. There is a growing appreciation of this model among students and educators as well as educational policy makers.

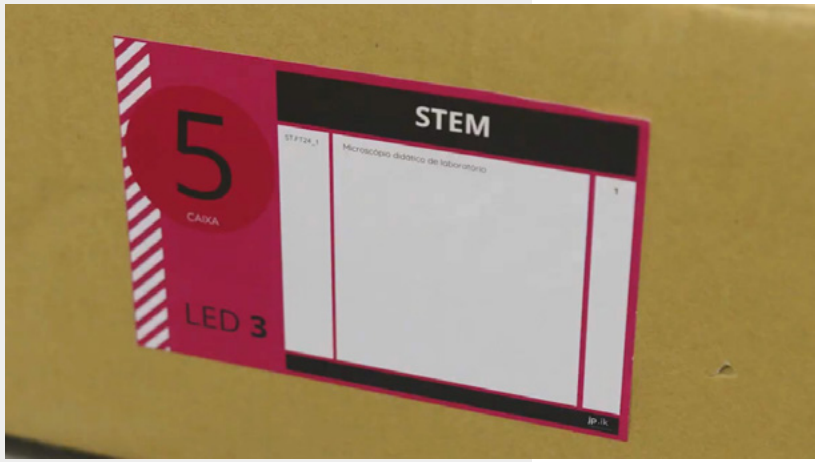
LED implementation

The LED equipment delivered to the schools had to meet all the technical specifications set out in the various Procurement Procedures carried out by SGEC, and the market's ability to respond meant that three International Public Tenders had to be held at different times. A target of 1 300 LEDs was set, divided into four areas: Common, Programming and Robotics, STEM, and Arts and Multimedia.

The schools were responsible for ensuring that all the physical conditions and human resources were in place to guarantee the installation and operation of the LEDs. Each LED space/room would be duly identified on the school's floor plan and have signs advertising PRR funding displayed, in association with the presentation of evidence of LED installation/use, by means of photographic and/or videographic recording.

To ensure the proper management of the LED labs, a Coordinator would be appointed, responsible for receiving, checking, and installing all equipment delivered to the school cluster or institution, as well as for promoting the pedagogical use of these resources. This person would also handle any warranty-related procedures with suppliers. The LED Coordinator serves as the point of contact with the General Secretariat for Education and Science (SGEC) and the Directorate-General for Education (DGE).

From challenges to success



The quantity of products, the variety of materials and the need to deliver all the LEDs to the schools at the same time required very detailed planning from jp.ik.

All areas of the company were involved in this planning, from production and product development to marketing and logistics. In order to guarantee the total success of the operation, the response to the Public Tender was made in partnership with Bravantic, a Portuguese company specialized in information technology solutions.

The biggest difficulty was ensuring the customization of each product and delivering it correctly to each school, given the size and scale of the project. To overcome these challenges, some customized project management systems and tools were developed to optimize production and logistics, some for monitoring, others to guarantee delivery to schools.

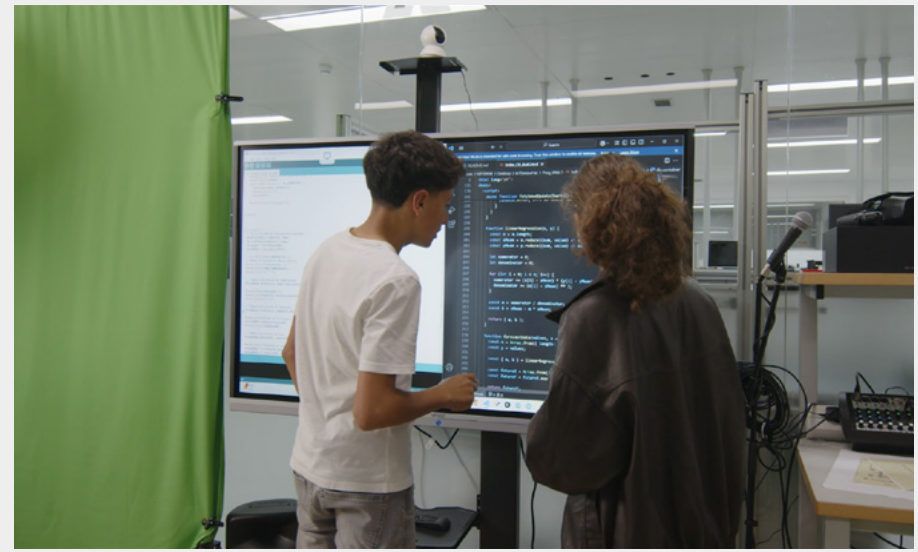
The result was the delivery of 1300 LEDs in 400 schools across the country, representing more than 100.000 products, without a single incident, exceeding all the client's expectations. This project is a milestone for jp.ik and demonstrates its ability to deliver large, complex and innovative solutions.

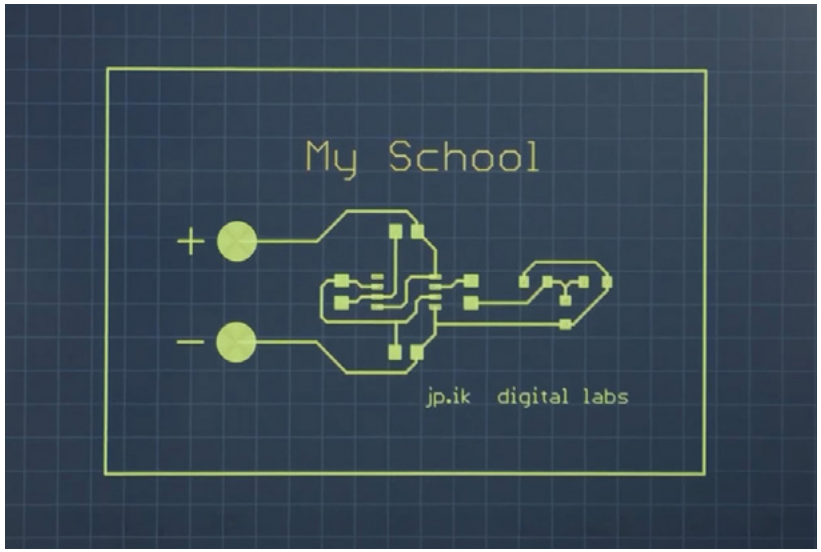
36 Years of Transforming the Future of Digital Education

The new digital labs and the ik DI solution mark another innovative step in jp.ik's 36-year journey. These are comprehensive digital solutions that offer a new user experience, enabling people to prepare for emerging professions, as well as to reskill and upskill for the demands of a digitally transforming world.

Building on the work already carried out in Portugal with the implementation of the Digital Education Labs (LED), our goal is to promote these new concepts—of which we are pioneers—in other regions, with artificial intelligence playing a central role in addressing future challenges.

We aim to implement these solutions in other countries as a means of reducing social inequality and enhancing the value and retention of human capital, which is the most important asset any country or region can have.





JP Sá Couto is a Portuguese company with international presence and over 36 years of history. jp.ik is the brand representing JP Sá Couto's education-focused business. With vast experience in implementing large-scale projects worldwide, jp.ik goes beyond ICT and EdTech deployment by delivering holistic and integrated solutions tailored to the needs of its clients and partners. jp.ik is committed to providing sustainable and innovative technological solutions that drive digital transformation while promoting social inclusion and respecting natural resources.

For more information and to explore our solutions, visit us at jp.ik.com.

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