ICT IN EDUCATION

Information and Communication Technologies (ICT) have profoundly transformed society, and education is no exception. In Portugal, the integration of ICT into teaching and learning processes has been a central theme in educational debates, with significant impacts on the way teachers and students interact and build knowledge.

The use of Information and Communication Technologies (ICT) in teaching has become an indispensable tool for fostering active and collaborative learning. For teachers to be able to use ICT constructively, it is essential that they acquire specific competences that guarantee their effectiveness. To this end, in recent years teacher training courses have been organised in the field of digital training. The objectives of these actions are:

- To train and motivate teachers to develop and improve their digital skills, enabling them to use digital technologies with confidence, putting them at the service of high-quality education and training.

- Providing digital training for all primary and secondary school teachers, appropriate to their level of proficiency, contributing to their professional development and creating the conditions for the transversal integration of technologies in the different curricular areas of primary and secondary education, with a view to continuously improving the quality of learning and the innovation and development of the education system, are some of the aims of digital training for teachers.

A brief look at history reveals that the introduction of ICT in Portuguese schools took place gradually, with government initiatives and pilot projects aimed at equipping schools and training teachers.

Integrating digital into teachers 'professional and pedagogical practices, students' learning practices and the exercise of citizenship should be a reality in all schools, ensuring greater equality and inclusion for citizens and enabling them to use digital technologies and infrastructures with confidence and security.

To implement all these changes, the Portuguese government is **currently** carrying out support actions in all schools nationwide
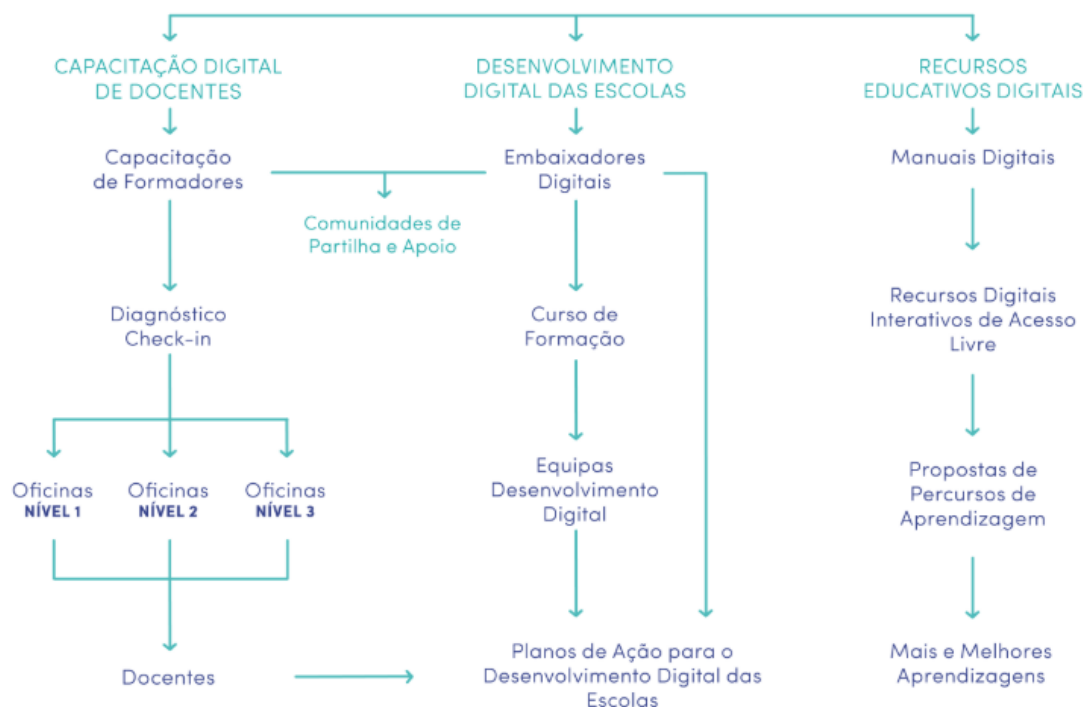
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 The main government measures include:

>   - provision of individual equipment for students and teachers (various delivery phases);
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>   - guarantee of free mobile connectivity for students and teachers;
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>   - access to quality digital educational resources (e.g. digital textbooks; RED repositories);
>
>   - strong commitment to a digital training plan for teachers.

CAPACITAÇÃO DIGITAL DAS ESCOLAS
PLANO DE AÇÃO PARA A TRANSIÇÃO DIGITAL

CAPACITAÇÃO DIGITAL DE DOCENTES
- Capacitação de Formadores
- Comunidades de Partilha e Apoio
- Diagnóstico Check-in
- Oficinas NÍVEL 1
- Oficinas NÍVEL 2
- Oficinas NÍVEL 3
- Docentes

DESENVOLVIMENTO DIGITAL DAS ESCOLAS
- Embaixadores Digitais
- Curso de Formação
- Equipas Desenvolvimento Digital
- Planos de Ação para o Desenvolvimento Digital das Escolas

RECURSOS EDUCATIVOS DIGITAIS
- Manuais Digitais
- Recursos Digitais Interativos de Acesso Livre
- Propostas de Percursos de Aprendizagem
- Mais e Melhores Aprendizagens

To cope with the ongoing digital transformation, schools have been prioritising the integration of digital technologies into their routines.

Based on internal reflection involving the various stakeholders, schools have considered different dimensions and defined their own global digital development strategy, building and implementing their Digital Development Action Plan (PADDE), based on 3 dimensions:

- **Organisational:** Leadership; collaborative work; professional development of the school's human resources

- **Pedagogical:** Curriculum development and assessment; teaching practices; use of digital educational resources

- **Technological and digital:** Infrastructure, equipment and Internet access; digital platforms

Developed in a training environment, the PADDE is an instrument for reflection and changing practices in educational organisations and a strategic reference point to support decision-making and monitoring of the work carried out in schools in the digital area.

This is what the **Vila Real de Santo António School Group** has been working hard to achieve. More and more teachers are integrating digital into their lessons, always with the importance of digital citizenship and safety in mind. This integration of digital into the classroom has given teachers the opportunity to create more dynamic, interactive and personalised learning environments. Digital tools such as distance learning platforms, interactive applications and multimedia resources make it possible to capture students' attention, making the educational process more engaging, effective and motivating. In

addition, ICT facilitates access to a wide range of up-to-date information and content, democratising knowledge and promoting equal opportunities.

It should be noted that as part of the Digital Empowerment of Schools, which is in force nationwide, the TDE (Digital Transformation of Schools) is being developed. As such, the Digital Team was created this year and is responsible for a whole series of projects that are being implemented in our school, as is the case nationwide:

- "***Probótica***"- National project within the scope of 'Programming and Robotics in Basic Education', aimed at the 1st Cycle.

- "***Seguranet***" - Education for Digital Citizenship - aimed at the 2nd and 3rd Cycles.

- "***Líderes Digitais***" (Digital Leaders) - Motivating students to disseminate themes that encourage the safe and healthy use of digital environments, as well as contributing to the development of media literacy - aimed at the 3rd Cycle and Secondary School.

- "***LED (Digital Education Laboratories)***" - Learning support spaces that provide teachers and students with contact and use of technological resources and equipment, in close articulation with the development of curricular and/or extracurricular activities - aimed at all stages of education.

The use of ICT in education should enable students to become citizens capable of dealing with technology in a critical and responsible manner. The competences developed include:

- **Digital Literacy:** Understanding, using and creating digital content safely and ethically.
- **Critical Thinking and Problem Solving:** Analysing information, making informed decisions and resolving complex issues.
- **Collaborative Work and Communication:** Using digital tools to work in teams and communicate effectively.

These skills are fundamental in a world where technology influences all areas of personal, academic and professional life.

But the inclusion of ICT in the school curriculum goes beyond the classroom and the essential learning that takes place. It trains individuals capable of actively participating in the digital society, promoting social inclusion, active citizenship and entrepreneurship. Through ICT, students learn not only to consume technology, but also to create and innovate, becoming agents of change in their communities.

ICT is undoubtedly one of the pillars of modern education. Its use in the classroom prepares students to face the challenges of the present and the future, equipping them with essential tools and knowledge for an increasingly technological society. It is imperative that schools, teachers and governments work together to ensure the effective integration of ICT into teaching, promoting quality education and the formation of competent and capable citizens.

Based on the experience gained over almost three years of working on our project, we were able to identify the crucial competences for integrating ICT meaningfully into the educational context. This knowledge has also allowed us to reformulate and adjust school

ICT plans, ensuring that they are aligned with the most current and effective practices, as well as with national guidelines.

Basic Competences:

✓ **Digital Pedagogical Competence**

Understanding how digital tools can be integrated into lesson plans to promote critical thinking, problem-solving and collaboration.

✓ **Technological Fluency**

Familiarity with educational software, learning management platforms and online resources to plan and execute dynamic lessons.

✓ **Management of Online Learning Environments**

Ability to create and moderate virtual learning environments, maintaining student engagement and promoting positive interactions.

✓ **Digital Assessment Skills**

Using digital tools to assess learning efficiently and fairly, based on real-time data and feedback.

✓ **Adaptation and Flexibility**

Adjust teaching methods according to the different needs of students and the technological context.

In this sense, we intend to continue using some of these tools in the educational context this school year:

Tool/APP	Function	Age group
Microsoft Teams	- Create and share documents, collaborate in real time and hold virtual meetings - Distance learning - Its integration with Office 365 offers productivity tools such as Word, Excel, PowerPoint and OneNote.	All cycles (from 6 to 18 years old)
Kahoot	- Creating learning quiz games	All cycles (from 6 to 18 years old)
Quizizz	- Creating quizzes and learning games	All cycles (from 6 to 18 years old)
Padlet	- Creation of collaborative bulletin boards (with text, images, videos, links,...)	All cycles (from 6 to 18 years old)
Scratch	- Programming that allows you to create games and interactive stories, encouraging logical thinking and problem solving	1st Cycle (from 6 to 10 years old)
Book Creator	- Create digital books using text, images and audio. To create a collaborative storybook in the classroom using just three images	Secondary education (from 14/15 to 18)
Canva	- Creation of posters and videos (individually or collaboratively)	2nd, 3rd Cycles Secondary education (from 10 to 18 years old)
Emaze	- Creation of presentations, websites, digital cards, blogs and photo books	3rd Cycle Secondary education (from 12 to 18 years old)
Time to Code	- Take your first steps into the world of programming by solving problems by level	3rd Cycle Secondary education (from 12 to 18 years old)
Seguranet	- Promoting safe, critical, ethical and enlightened browsing in the virtual world	2nd and 3rd Cycles Secondary education (from 10 to 18 years old)

Tool/APP	Function	Age group
Pictoblox	- Block programming	3rd Cycle Secondary education *(from 12 to 18 years old)*
Rayuela	- Cybercrime prevention tool, made available by the Polícia Judiciária in the 2024-2025 school year to all schools and institutions dedicated to children and young people nationwide.	2nd and 3rd cycles *(from 10 to 14 years old)*
3D Mitotic Divison	- Real-time teaching. For use in the learning process in the area of human mitotic division. Uses real-world digital images to provide an interactive experience that helps students visualise biological concepts and learn by interacting with environments in a virtual reality space.	Secondary Education *(from 14/15 years to 18)*
Microsoft Sway	- Presentation and creation of digital content that allows you to create interactive and visual narratives. Useful for dynamic presentations, reports, portfolios and even newsletters.	3rd Cycle MOTpons of MOTard *(from 12 to 18 years old)*
Geogebra	- Interactive exploration of mathematical concepts	3rd Cycle Secondary education *(from 12 to 18 years old)*
MakeCode or Python	- Programme	3rd Cycle Secondary education *(from 12 to 18 years old)*

In the field of psychology and mental health promotion, the school's psychologists also use digital tools to work with students. The following stand out:

Programme	Description
I Feel	- The "EU SINTO.ME" Online Psychological Health and Well-Being Programme is an information programme in the area of psychological health and well-being, based on scientific evidence from psychological science, but accessible to all citizens, using simple language, themes and situations that people can relate to. - Based on quality information and short conversations with various interlocutors, the aim of this website is to naturalise feelings and validate emotional experiences, to demystify prejudices and misconceptions about Psychological Health (and its difficulties and problems), and to offer practical and useful strategies that can be implemented by most people.

In conclusion, ICT represents a unique opportunity to transform education, making it more relevant, effective and attractive to students. By integrating ICT into teaching, schools are empowering students for a promising future, where the ability to use digital technologies will be key to personal and professional success. However, it must be borne in mind that technology is only a tool, and that the role of the teacher remains fundamental in mediating the learning process and ensuring that students develop their full potential.

By investing in digital education, we are investing in the future of our students and our society.