An Roinn Oideachais
Department of Education

Digital Strategy for Schools

to 2027

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Foreword

I am very pleased to publish this new Digital Strategy for Schools. This new Strategy builds on the work that so many across the education sector have pioneered in recent years, to embed digital technologies in our schools. It envisions a future where every learner will have ample opportunity to benefit from technology in their learning, and will develop key skills for the digital world.

Táim buíoch do ghach duine a ghlac páirt go dtí seo ag tacú lenár bhfoghlaimeoirí in úsáid na teicneolaíochta ina n-aistear oideachais. Agus muid ag bogadh chuig an gcéim nua seo inár gcomhaistear ag leabú na teicneolaíochta san oideachas, go leanfar dár n-iarrachtaí le chéile chun tionchar dearfach a imirt ar cheannairí an lae inniu agus sa todhchaí. I am delighted we have this vision, which acknowledges the enormous strides already made and sets out our ambitions for even greater progress, to continue the transformation of our learners' experiences with technology.

I would like to thank sincerely everyone who participated in such numbers and with great energy in the consultation process: students, parents, teachers, principals, education partners, representatives from industry and other interested bodies. Your generosity and enthusiasm in sharing your experiences, views and hopes for the future yielded rich and varied contributions, which have been essential in informing the approaches outlined in this Strategy.

The need for digital skills is ever-present in our daily lives. To answer this need, it is vital that our education system supports all of our learners – children, young people and beyond – to gain the knowledge and skills they need in the modern world and to ensure that they have a positive experience of learning with technology. This Strategy aims to ensure this happens effectively for all learners.

The Strategy outlines how we will ensure that all elements of our education system are proactively involved in progressing the use of digital technology in education. It takes a three pillar approach, covering embedding digital technologies in teaching, learning and assessment; digital technology infrastructure and policy, research and digital leadership. Each of these three pillars is essential to the success of the Strategy, and I am convinced that by delivering it in full we will be equipping our students for the future, with the skills and capacity they need to be effective as global citizens in a digital world, in the way to which we aspire.

Learners are central to this Strategy. No one should be left behind and it is critical that all learners are provided with meaningful opportunities to benefit from new technologies to support their education in an environment that supports and delivers modern teaching practices. By combining excellence in teaching practises with technology we can equip or students and young people with the key digital skills required to enhance and enrich their pathway through life.

Through continued investment we will ensure that all schools, regardless of location, are provided with appropriate broadband connectivity. We will continue to invest in supporting schools to build their own capacity and digital technology infrastructure.

The effective use of digital technology, integrated as a seamless part of the teaching, learning and assessment practice in every classroom, is a key goal.

There is much to learn from the challenges that COVID-19 brought to the school system. It is remarkable how, in the midst of unprecedented challenges, school leaders and teachers during this time demonstrated some amazing innovation and ingenuity, using technology in new ways to support students' learning.

There also grew for many a new appreciation of how digital technology can benefit the teaching and learning process and how it helped everyone to stay engaged and connected during the school closures necessitated by the pandemic. Many studies also found that schools had already successfully engaged with digital technology and were well placed to respond with agility to the changed landscape. Rather than stand still in this ever changing digital world it is important to continue to evolve with technology and this Strategy recognises the need to support schools, school leaders and teachers to build their capacity to adopt new approaches that will benefit all learners, in turn creating the entrepreneurs, engineers and educators of tomorrow.

Over the lifetime of this Strategy, progressing the use of digital technology and innovation will be a key enabler to deliver curriculum reform. Empowering school communities and building capacity will support progression of both primary curriculum reform, including the Modern Foreign Language initiative, and Senior Cycle reform.

The digital landscape is a dynamic and changing environment. The Strategy indicates the need to build awareness of new and emerging technologies and how we must be prepared to take advantage of the benefits and opportunities they bring,

The strategic objectives of the EU Digital Education Action Plan include to develop a 'digital education ecosystem'. To this end the Strategy will enable us to continue to support school leaders and teachers through effective initial teacher education and ongoing teacher professional learning. This will support them to develop essential skills and empower them to gain the maximum advantage from digital technology in every classroom, for the benefit of all learners.

The capacity of digital technology to support differentiated teaching and learning will facilitate stronger personalisation in teaching approaches to benefit all learners but particularly those with additional educational needs.

In an ever-changing world, we are increasingly connected and we increasingly collaborate effectively using technology. Delivering on this Strategy for our learners will require ongoing connection and collaboration. I look forward to working in partnership with all education partners and our colleagues across Government to advance the development of digital technology in how we deliver education in our schools and achieving the objectives contained in this Strategy.

Norma Foley TD
Minister for Education

Foreword by the Secretary General

I am delighted to introduce the Department's Digital Strategy for Schools to 2027 which sets out our policy approach to continue the progress made in embedding digital technology across the curriculum in our schools.

In the midst of the Covid-19 pandemic the benefits and opportunities afforded by the use of digital technology in education were brought into sharp focus. Digital technologies facilitated the continuity of learning during school closures but also highlighted the challenges that exist for some learners. The work advanced under the previous Digital Strategy for Schools and the associated funding which allowed schools to invest in digital infrastructure was a significant strength in being able to respond when the pandemic impacted directly on schools in March 2020. This called for innovation and agility across the system to continue to deliver a vast range of education services and support learners.

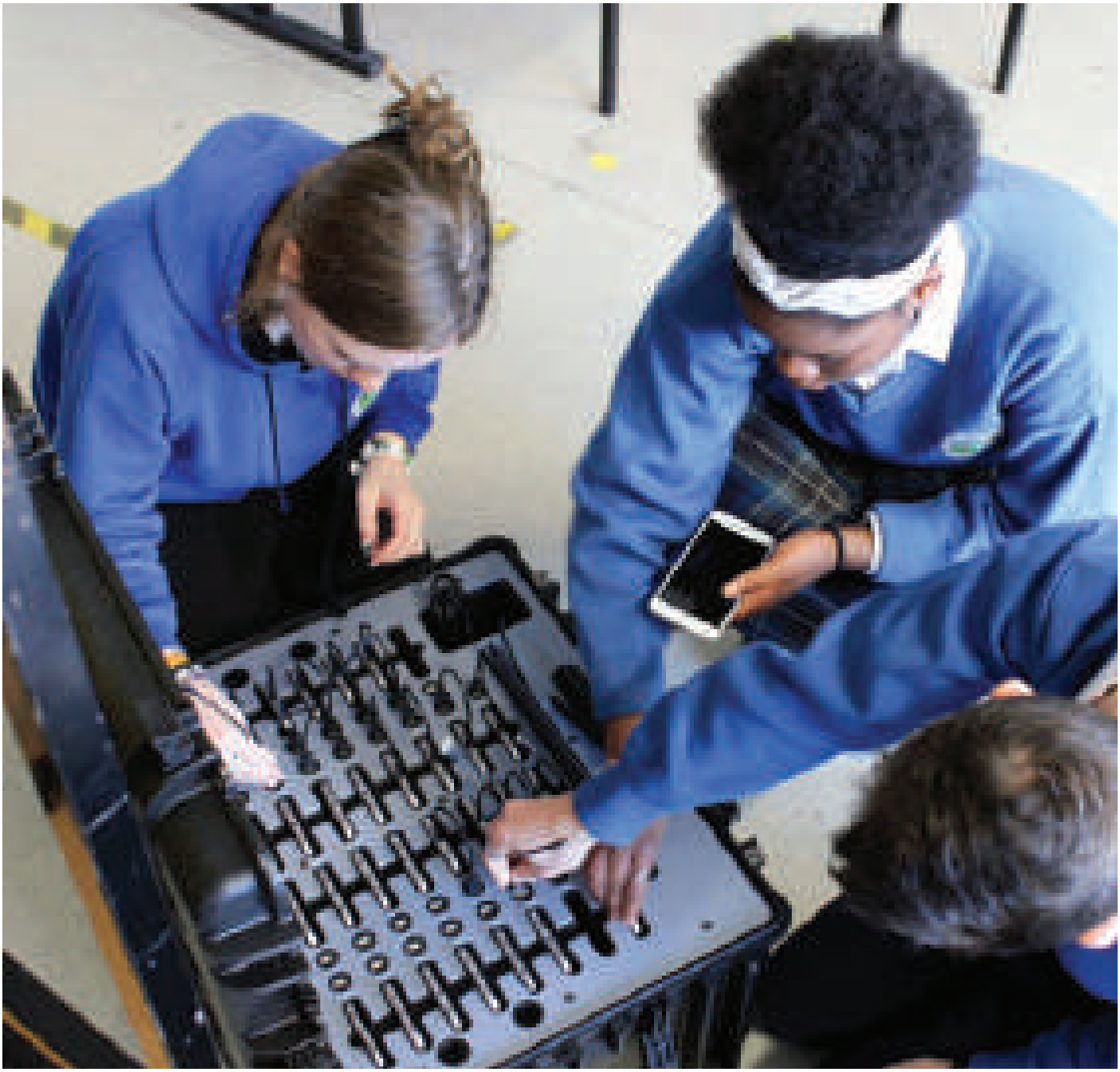
It is important that we maintain the momentum gained during Covid-19 in the adoption of digital technology in education and continue to invest in building an effective digital ecosystem in our schools. This Digital Strategy will support the ongoing advancement of digital infrastructure through targeted funding, and working with colleagues across Government to ensure broadband connectivity to all schools, regardless of location, growing their capacity in the use of digital technology.

We must also continue to support our school leaders to lead innovation and change in adopting digital solutions, embedding the use of digital technology to deliver curriculum in every classroom and for every learner. We know that our teaching workforce responded very effectively to the changed education landscape in recent years and we must now continue to support them with targeted teacher professional learning, building on and progressing the skills gained so as to support all learners to gain key digital skills as part of their educational journey.

Digital skills are key to young learners' future transition to Further and Higher education and into the world of work. They must be afforded the opportunities to acquire those skills as part of their foundational education. Essential to this aspiration is the need for young learners to learn how to make the most of the opportunities available from the use of digital technology in their learning but also to navigate the internet safely. The voice of young learners will be important to inform and advance curricular change for which digital technology will be a key enabler.

I would like to express my sincere thanks to all of those who were part of the development of this Strategy. We engaged with learners, parents/guardians, teachers, principals, initial teacher education providers, industry representatives, non-governmental organisations such as those in the disability and charity sector and the education partners. It is important that all voices were provided with an opportunity to be heard. Contributions from our education partners, colleagues in our agencies and other Governments Departments, the industry sector and learners themselves helped to shape this strategy. We will continue to engage with our many partners and stakeholders to ensure that we deliver on the objectives contained in the Strategy. This will include continuing to develop an appropriate digital infrastructure and digitally skilled workforce, to realise the benefits of digital technology for all our learners to gain the skills they need to navigate the digital world effectively and safely.

Bernie McNally
Secretary General

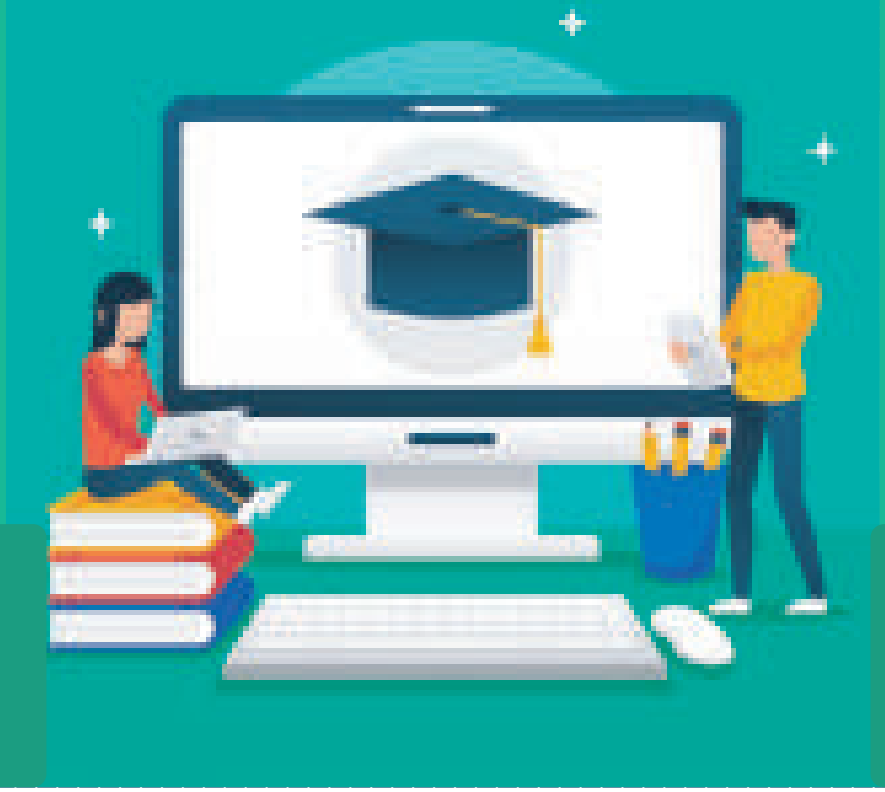


Introduction

Background

Digital technologies have increasingly become part of everyday life in our modern society. Over the lifetime of the previous Digital Strategy for Schools 2015-2020, the effective use of digital technologies in teaching, learning and assessment became more commonplace in classrooms across the country.

This Strategy builds on the achievements and ambitions brought about by the previous one by reinforcing and building on the importance of many of the actions, which were facilitated through the investment of €210 million in direct funding to schools over the lifetime of the previous Strategy.



ACHIEVEMENTS OF DIGITAL STRATEGY FOR SCHOOLS

2015-2020

100%

All post-primary schools have high speed broadband with minimum connectivity speeds of 200 Mbps

100%

All schools can access the Digital Learning Framework supported by TPL programme

€210 MILLION

issued in ICT infrastructure grants to schools

€13 MILLION

in funds provided annually by the Department for broadband connectivity in schools

Work is continuing to ensure that all primary schools will have minimum connection speeds of 100 Mbps or greater by 2023

Over 23,000 high quality digital resources available at www.scoilnet.ie

The introduction of Computer Science as a Leaving Certificate Subject

Schools Excellence Fund Digital & STEM encourages creative ways of embedding digital technologies in learning, teaching and assessment. 42 clusters of schools, over 200 schools, supported by €1m investment

Visit scoilnet.ie and webwise.ie to access a range of valuable resources

Opportunities for School Staff
Broad range of professional learning opportunities including differentiated models of TPL, are available to teachers and school leaders on the effective use of digital technologies in teaching and learning practices

Extensive Support
Development by PDST of extensive support and resources including quality assured exemplars of effective practice. Extensive support and advice for teachers, parents and students on online safety available at www.webwise.ie

Developing Skills
All new and revised curricular specifications include clear statements that focus on the development of digital learning skills and the use of digital technologies as a resource in achieving specific outcomes across the curriculum

Junior Cycle
Junior Cycle Framework continues to promote digital literacy skills through eight Key Skills (all skills have an ICT/ digital component) and through Statements of Learning

These developments were accelerated when the school system was faced with heretofore unknown challenges, brought about by school closures in response to the COVID-19 pandemic. These events demonstrated how the effective use of digital technologies helped our schools and teachers to respond and to ensure continuity of teaching, learning and assessment for learners in the context of school closures and remote learning.

Having an education system which is fit for the digital age is essential and that was highlighted further when schools were forced to close. School closures also drew attention to a number of challenges related to the digital capacity of schools, teacher professional learning (TPL) and overall levels of digital skills and competences for both teachers and learners alike, as well as the need for appropriate infrastructure and broadband connectivity in schools.

It is vital that the experiences and developments in responding to the challenges of the pandemic are built on for the future to ensure that:

- all learners will be supported to reach their full potential;
- all learners will be supported to have appropriate and equal access to digital technologies, in particular individuals at risk of educational disadvantage and those with additional learning needs;
- the use of digital technology becomes as much a core part of the education journey as basic literacy and numeracy skills are, with a deliberate and increased use of digital technology in teaching, learning and assessment;
- all teachers are supported to further embed the use of digital technologies in their classrooms to support all learners in a safe, responsible and ethical way.

Vision

In the school system, enabling real change "requires policies and actions on several fronts, including infrastructure, strategy and leadership, teacher skills, learner skills, content, curricula, assessment and national legal frameworks."[1] This Strategy and its associated Implementation Plan will address all of these areas and will complement and reinforce existing and developing relevant policies and strategies such as the EU Digital Education Action Plan[2] and Harnessing Digital – The Digital Ireland Framework[3].

THE STATED VISION OF THIS STRATEGY IS:

- **Empower schools to harness the opportunities of digital transformation to build digital competence and an effective digital education ecosystem so as to develop competent, critically engaged, active learners while supporting them to reach their potential and participate fully as global citizens in a digital world**

EU Digital Education Action Plan (DEAP) 2021-2027

The EU Digital Education Action Plan (DEAP) (2021-2027) *Resetting education and training for the digital age* offers a long-term strategic vision for high-quality, inclusive and accessible European digital education and it is intended to align this Digital Strategy with its EU counterpart where possible, reflecting the Irish context.

The EU DEAP addresses the challenges and opportunities of the COVID-19 pandemic and seeks to establish stronger cooperation at EU level on digital education. The vision contained in the EU DEAP presents opportunities which can be progressed under this Strategy primarily in terms of equality, accessibility and inclusiveness, connectivity, equipment and organisational capacity, ensuring that all teachers and school leaders are competent and confident users of technology.

The EU DEAP sets out two high level priority areas which are

- Priority 1: Developing a high performing digital ecosystem
- Priority 2: Enhancing digital competences for the digital transformation.

Implementation of the Digital Strategy for Schools will be informed by these priorities in terms of the overriding objectives of this Strategy.

Department of Education Statement of Strategy 2021-2023[4]

This Digital Strategy for Schools will also support and reinforce the vision of the Department of Education's Statement of Strategy "for an education system where every child and young person feels valued and is actively supported and nurtured to reach their full potential". A key objective of the Statement of Strategy is "to facilitate children and young people through learning to achieve their full potential and contribute to Ireland's social, economic and cultural development".

1 DEAP 2021-2027: Resetting education and training for the digital age. Communication from the Commission to the European Parliament, The Council, the European Economic and Social Committee and The Committee Of The Regions. Brussels. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52020DC0624
2 https://education.ec.europa.eu/focus-topics/digital/education-action-plan
3 https://www.gov.ie/en/publication/adf42-harnessing-digital-the-digital-ireland-framework/
4 https://www.gov.ie/en/publication/56137-department-of-education-statement-of-strategy-2021-2023/

The adoption of digital technologies in all teaching, learning and assessment activities is a key enabler to facilitate equity of opportunity in education and to ensure that all students are supported to fulfil their potential and throughout their schooling, develop the skills and understanding necessary to navigate safely and productively in a digital world.

Harnessing Digital: The Digital Ireland Framework[5]

The objectives set out in this Digital Strategy will also contribute to achieving the targets as set out in the national digital strategy *Harnessing Digital: The Digital Ireland Framework*, where the purpose is to drive and enable the digital transition across the Irish economy and society.

The high-level framework sets out a pathway to support Ireland's ambition to be a digital leader at the heart of European and global digital developments; and places a strong emphasis on inclusiveness, security and safety, underpinned by strong governance and a well-resourced regulatory framework.

Under this high level framework, the focus will be on the development of digital skills for all – from school, to further and higher education, to life-long learning, with a target of increasing the share of adults with at least basic digital skills to 80% by 2030. Progressing the use of digital technologies in teaching, learning and assessment and supporting every learner to develop necessary digital skills will be a key element of achieving this national aim.

Consultation Process

The development of this Digital Strategy for Schools has been informed by a wide ranging and extensive consultation process to ensure that all voices were given an opportunity to contribute and inform its development. Findings from the consultation process will also help inform the development of the associated Implementation Plan

The consultation process consisted of:

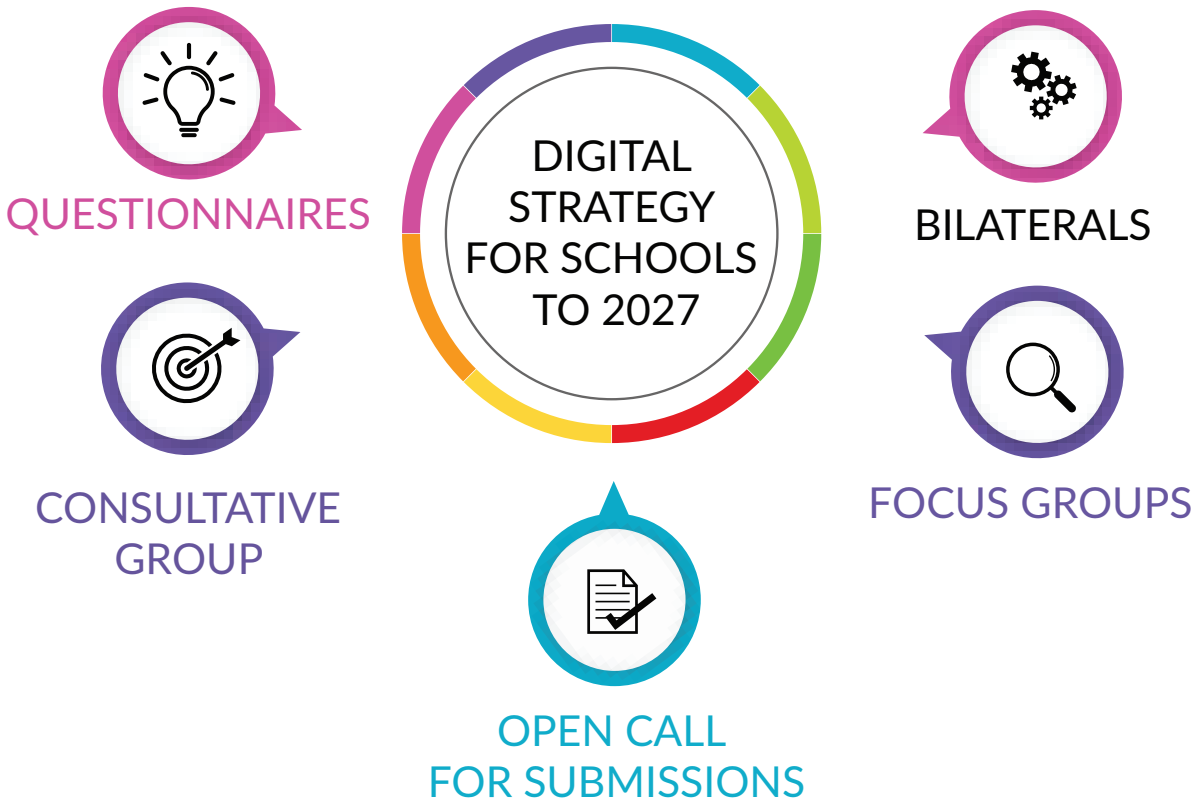
- *Online questionnaires*: Separate questionnaires were developed for teachers, principals and students and reports of these are available[6]. Both the National Parents Council Primary and Post Primary also issued questionnaires

5 https://www.gov.ie/en/publication/adf42-harnessing-digital-the-digital-ireland-framework/

6 https://www.gov.ie/en/publication/69fb88-digital-strategy-for-schools/

with subsequent reports which fed into the development of the new Strategy.

- *Open call for submissions*: An online open call submission template was made available with over 100 submissions received from various interested stakeholders including management bodies, teacher unions, industry representatives, individual businesses, teachers, principals and parents. A summary report of the main issues raised has been published online.
- *Focus Groups*: Following an analysis of the findings from the questionnaires and open call, themes were developed for discussion in more detail. H2 Learning were successful in tendering to provide assistance in the running of the focus groups and prepared a report on the findings[7]. 9 were held in total, with separate ones for teachers' primary and post primary, principals' primary and post primary, primary learners, post primary learners, industry representatives, representatives from initial teacher education providers and non-governmental organisations.
- *Consultative Group*: This was a key group comprising representatives from the education partners, parents and students groups and an overarching industry representative. It facilitated the discussion of various themes and issues in detail so as to help inform the new Strategy.
- *Bilateral's with Denmark, Estonia and Finland*: Bilateral meetings were held with relevant officials to discuss experiences in



7 https://www.gov.ie/en/publication/69fb88-digital-strategy-for-schools/

terms of the use and embedding of digital technologies in education.

Some of the positive findings from the consultation process include:

- The previous strategy was recognised as a success and seen as being transformative, which was attributed primarily to the clear vision around the potential of digital technologies to enhance teaching, learning and assessment.
- The core pedagogical focus was seen as a positive as were the supports and professional learning opportunities put in place for teachers and students to encourage the use of digital technologies and collaboration within and across schools.
- The significant investment and direct funding to schools under the Strategy was seen as fundamental to its success. This was perceived as giving schools autonomy to plan for and build their digital capacity by investing in core infrastructure including digital devices, learning platforms WiFi etc. €210 million was issued directly to schools in grant funding with a further €13 million issued annually through the Schools Broadband Programme, to improve broadband connectivity in schools.

While there was a vast amount of different issues and areas covered throughout the consultation process, some of the key themes which emerged were:

- **Infrastructure**
  - Access to high-speed broadband was deemed a key enabler and the diversity in provision across the school network was highlighted as requiring attention.
  - WiFi in schools was raised as needing attention and viewed as critical to enabling the effective embedding of digital technologies in teaching, learning and assessment across the curriculum, as well as promoting the use of flexible learning hubs, cloud computing and to support school administration.
  - Technical support for schools arose as a key area to address in order to eliminate unnecessary costs and bring consistency as to how technical support is managed at local level. It was acknowledged that this is a complex area with no 'one size fits all' solution.

- **Teacher Professional Learning (TPL)**
  - There was a desire for a holistic set of professional learning supports at each stage of the teacher education continuum to enable teachers to embed digital technologies into their practice.
  - Sustained continuous professional learning opportunities for teachers and school leaders to build competence and confidence in the use of technology across all disciplines through collaboration, including cross-sectoral collaboration between primary, post-primary and special schools. Peer-to-peer learning was viewed as key in this area alongside opportunities for the sharing of information, education material, pedagogical strategies/classroom practice and other resources.
  - Further specific supports and resources for school leaders to enable them to manage and lead the embedding of digital technologies in teaching, learning and assessment within their school contexts were requested.
  - The need for sufficient time to be given to teachers and school leaders to engage with necessary TPL was raised consistently.

- The use of digital technology should be embedded throughout the entire curriculum and not seen as an add-on with the development of digital competences to be integral to all subjects.
- There was a lack of awareness as to the availability of some supports and resources.
- Call for a national structured and standardised framework around teacher professional learning (TPL) to ensure that the relevant supports and resources are available to all school leaders.

- **Inclusion**
  - The potential for technology to promote and facilitate inclusion and accessibility for all learners particularly those who are at risk of educational disadvantage and those who have additional learning needs was seen as an important area for consideration.
  - A consistent theme was the requirement to support all learners, including being particularly mindful of socio-economic factors, special educational needs and the importance of access to appropriate devices.
  - More guidance and advice on pedagogical strategies for using assistive technology with learners who have special educational needs (SEN) and managing devices in the classroom for these learners with SEN rather than just focussing on tools was called for.

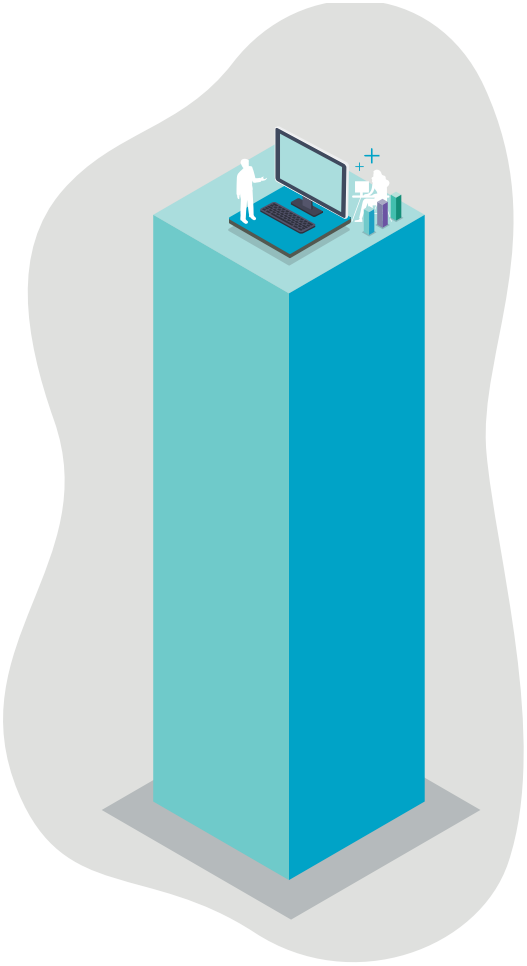
- **Curriculum and Assessment**
  - A key driver for the use of digital technology in schools is its alignment with the curriculum offered across primary, post-primary and special schools and there were calls for existing and new curriculum specifications to provide clear opportunities for digital teaching, learning and assessment giving teachers a clear rationale for using digital technology.
  - In the redevelopment of the primary curriculum, it will be important to identify opportunities for learning experiences which integrate digital technology, particularly in numeracy and literacy.
  - The need for a greater focus on the use of digital technologies to support assessment.
  - Enhanced and more effective use of digital technologies across the curriculum and for it to be a key aspect of current and future curriculum reform and redevelopment in both primary and post-primary education.

In addition to the extensive consultation process, a report was also commissioned and prepared by Prof. Deirdre Butler and Dr. Margaret Leahy which includes an analysis of the implementation of the previous Strategy and highlights areas for consideration for inclusion in the new Strategy. This report is entitled *Baseline Report: Towards a Successor Digital Strategy for Schools to 2027*[8] and will be referred to as the Baseline Report in this Strategy. The findings and issues raised in this report provided vital input to the development of this Strategy.

[8] https://www.gov.ie/en/publication/69fb88-digital-strategy-for-schools/

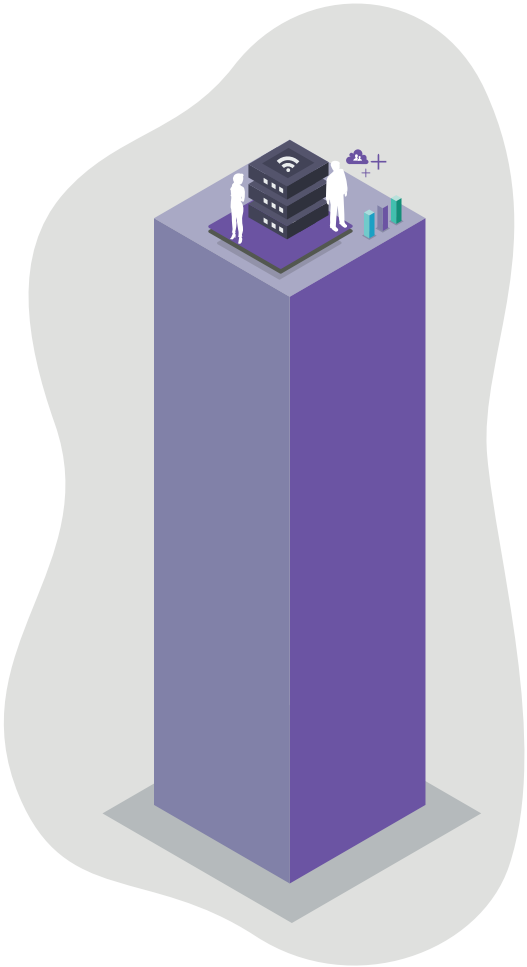
Structure and Timelines

This Strategy will align with the duration of the EU DEAP and run until 2027. It sets out the high level objectives under three Pillars.



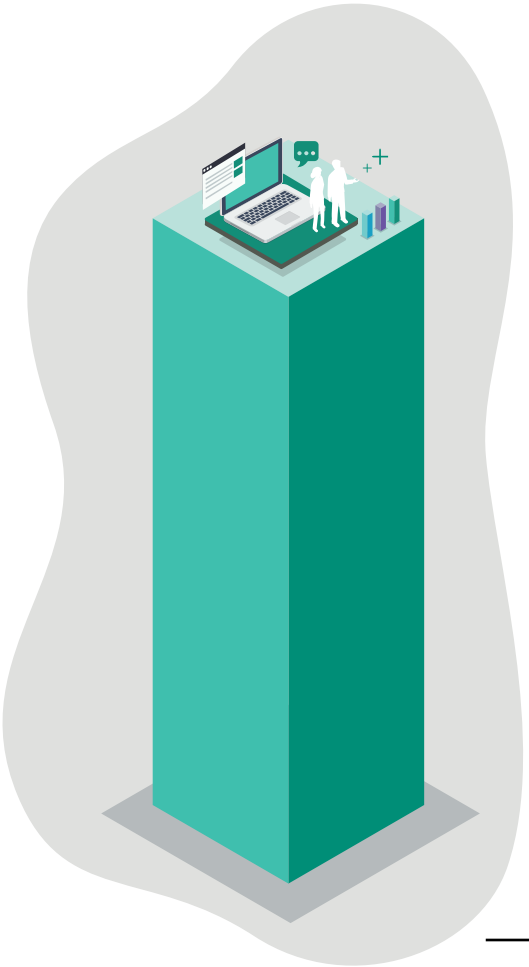
Pillar 1 Supporting the embedding of digital technologies in teaching, learning and assessment

- Supporting our teachers to strengthen their confidence and competence in using digital technologies in teaching, learning and assessment in schools, to ensure all learners develop the digital skills necessary to navigate a complex digital world. In tandem, supporting school leaders to guide and build capacity and increase teacher confidence through appropriate teacher professional learning (TPL), to ensure appropriate developmental learning experiences for all learners to enable them develop the necessary digital competence. This will be informed by learning from the experience of COVID-19 to better realise the effective use of digital technologies in teaching, learning and assessment across the entire curriculum



Pillar 2 Digital Technology Infrastructure

- Commitment to build on the progress made to date to ensure that all schools are served with high speed broadband connectivity and appropriate infrastructure to support teachers and learners to realise the benefits from the use of digital technologies in classroom activities including technical support and procurement frameworks.



Pillar 3 Looking to the future: policy, research and digital leadership

- Establish sustainable policies to guide further progress for the use of digital technologies in schools, leveraging work underway in other relevant strategies to ensure that all learners develop their digital competence. Support schools and school leaders in terms of the ethical and safe use of the internet. Engage with and disseminate ongoing research to identify opportunities and challenges of emerging technologies for the school sector.

The Digital Strategy's three **Pillars** aim to ensure that the school system is prepared for and continues to progress the embedding of digital technologies in teaching, learning and assessment. The overriding objective of this Strategy is to support our school system in designing and developing learning experiences that encompass the development of digital competences for all learners; is flexible and agile availing of opportunities and meeting the challenges of a digital world and empowers every learner regardless of socio economic background, learning needs or geographical location, to engage with digital technology as part of their education journey.

This Strategy will align with and leverage policy developments contained in other strategies to progress implementation and in so doing, build and support the development of a range of digital competences to empower all learners to engage as global citizens in a dynamic digital society.

It is also intended to develop appropriate oversight and measurement processes and procedures to provide for effective implementation of the Strategy as well as establishing relevant Groups to help implement the Strategy and inform further developments.

An **Implementation Plan** with actions relating to the high level objectives and a timeframe for implementation will be developed. The development and execution of the Implementation Plan will be led by an internal Digital Strategy Steering Group and will involve ongoing engagement with relevant education partners and other key stakeholders.

The first Implementation Plan will run from 2022-2024. Towards the end of this phase a midterm review will be carried out to inform the next Implementation Plan from 2025-2027.

PILLAR **1**

Supporting the embedding of digital technologies in Teaching, Learning and Assessment

1.1. Introduction and background

The use of digital technology has become more apparent in many aspects of daily life and this has been accelerated in recent times due to having to adapt to the COVID-19 pandemic. Fundamental evidence of this is the way in which the education system responded to school closures to ensure continuity of education for our children and young people. This level of responsiveness and agility in the system demonstrated the power of digital technologies to address that particular challenge, with an intensive scaling up in the use of technology in education. This could not have been achieved without the hard work, commitment and dedication of school leaders, teachers and the wider school community in the rapid move to remote learning.

While there is no doubt that progress in the use of digital technologies in schools was accelerated with the commitment to the continuity of learning, with many examples of innovation throughout this period, it was not without its challenges, such as poor broadband connectivity, lack of access to necessary digital devices and disengagement by some learners. Research shows that where schools had developed their Digital Learning Plans and had progressed the use of digital technologies in their school, they were in a much better position to move to remote teaching and learning than those who had made less progress[9].

[9] https://www.gov.ie/en/publication/c0053-digital-learning-2020-reporting-on-practice-in-early-learning-and-care-primary-and-post-primary-contexts/ and https://www.esri.ie/publications/learning-for-all-second-level-education-in-ireland-during-covid-19

There has been much advancement and progress made due to the supports and resources introduced under the previous Strategy, the expertise developed by teachers and school leaders and the opportunities for learners to develop a broad range of digital skills.

It is evident from the consultation process that more needs to be done to continue to build the confidence and competence of school leaders and teachers and to assist them in their use of digital technologies in their teaching, learning and assessment practices and to continue to support learner skill development. The Department of Education will continue to empower schools to facilitate effective digital planning and the skills development of teachers to ensure a digitally competent and confident teaching profession who have the capacity to build the digital competence of all learners.

This Pillar will address the key supports and resources required by schools, school leaders and teachers to continue to grow their practice in the effective use of digital technologies with the learner being at the core of this and in line with the stated vision of the Strategy.
It will also cover some priority areas that arose throughout the consultation process around curriculum, planning, and digital skills in general.

Pillar 1 Objectives

- **Empower learners to become confident and competent digital learners.**
- **All new educational policies and curricula will continue to ensure that they have the appropriate and effective use of digital technologies embedded.**
- **Enhance inclusion, equity, learner participation and personalisation through the use of digital technologies by providing clear guidance and support.**
- **Embed the appropriate and effective use of digital technologies for teaching, learning and assessment at each stage of the continuum of teacher education, i.e. Initial Teacher Education, Induction and Continuing Professional Development.**
- **Run an awareness programme to ensure that all teachers and school leaders are aware of supports and resources available relating to the use of digital technologies for teaching, learning and assessment both nationally and internationally.**
- **Ensure provision of flexible, differentiated, needs based teacher professional learning so that there is clear guidance, support and professional learning for all teachers and school leaders in the planning and use of digital technologies in all aspects of teaching, learning and assessment.**
- **Provide further supports to assist schools in their self-assessment of progress in embedding digital technologies in teaching, learning and assessment.**

1.2. Priorities for implementation

The effective embedding of digital technologies in schools for teaching, learning and assessment as well as in supporting wellbeing, inclusion, creativity and communication with the wider school community can benefit all those involved and lead to enhanced engagement and improved educational outcomes for all learners.

In line with the EU DEAP 2021-2027, as a key priority area this Strategy will focus on enhancing digital skills and competences for digital transformation as "boosting the level of digital competences and capabilities to support the effective and pedagogical use of digital technologies is a key enabling factor in improving the quality, inclusivity and effectiveness of education and training"[10].

Key to this is the role of school leaders and teachers in leading, planning and embedding digital technologies across the curriculum.

The use of learner-centred digital technologies in teaching, learning and assessment is the responsibility of all teachers and school leaders and is underpinned by the necessary confidence and competence to lead effective digital learning in the classroom and across the wider school community. The aim of the Department, through this Strategy, is to continue to support these needs and build capacity in all schools.

At the core of the Strategy is the continued approach of *pedagogy first technology second*, where the use of technology to enhance teaching, learning and assessment, has an added value and does more than merely replicate traditional practices. Teachers will need to continue to be supported to develop their digital competence to design learning environments that enable young people to become competent and confident digital learners.

[10] https://education.ec.europa.eu/focus-topics/digital/education-action-plan p 38

As referenced in the Baseline Report and drawing from extensive research, "digital technology *per se* is not necessarily a driver or catalyst for change and the introduction of digital technology into schools does not in and of itself lead to the development of innovative teaching practices or the transformation of education. In order for digital technologies to be effectively used in teaching and learning at school level, their use has to be part of the school vision and must be supported by specific national policies".

1.3. A Learner-Centred Approach

Central to the development of this Digital Strategy is the learner. The ultimate objective is for all learners to develop the necessary skills required to navigate a digital world. Essential to this aim is that they learn to do so in a critical manner, aware of both the opportunities and risks and that they have the relevant knowledge, skills and attitudes to live, work, learn and thrive.[12]

In using digital technologies, learners should be both confident and competent, be flexible and able to adapt to changing circumstances, required to think critically, work together in teams and use digital technologies creatively and responsibly. Effective use of technology in the classroom and across the school environment supports inclusion, promotes accessibility and participation and can help to personalise the learning process for all learners, leading to better engagement and ability to be more involved and self-directed in their own learning. The use of digital technologies in the school context can also enhance and support the student/teacher relationship as well as assist with collaboration and learning between peers. Digital technologies can also be a useful tool in facilitating and improving communication both within the school and also between the school and parents/guardians and the wider school community.

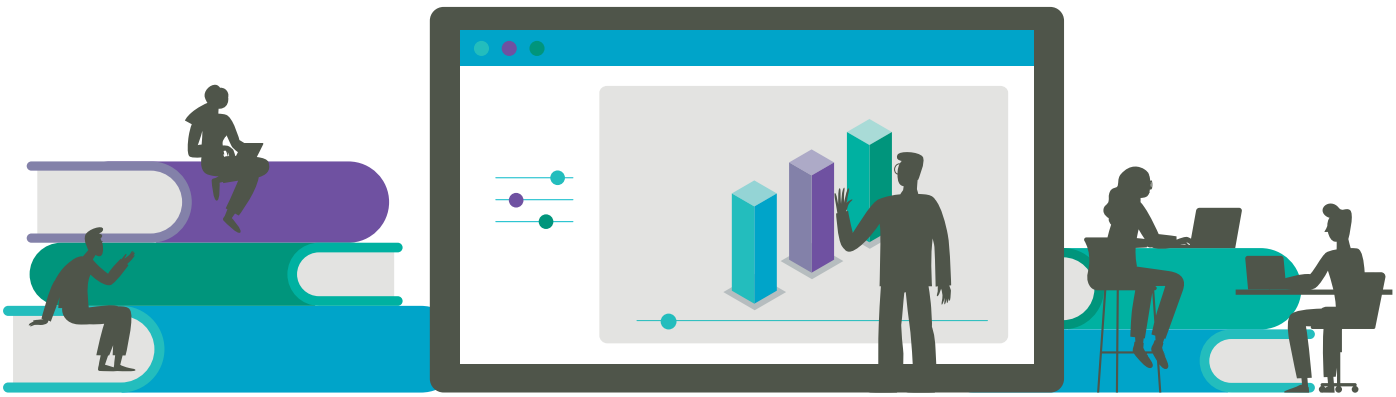
Using digital technologies actively and working with other learners promotes and encourages active learning, problem solving, critical thinking and communication skills, all of which are vital for the world we live in. In the consultation process, learners were clear that they enjoyed using digital technologies and felt it helped them develop their digital competences. Learners found it of particular benefit in collaborative work. They expressed a preference for using a mix of both technology and traditional methods of books and paper. The feeling was also expressed that there was not always a focus on using it in class, particularly within the current established Leaving Certificate and that there is greater potential for the use of technologies in assessment. Many would like to see greater use of digital technologies for learning during this stage of their education.

It is important that learners are encouraged to understand how they learn so that they can take control of their own learning and develop their skills further. Throughout all of this, what is of utmost importance is their emotional wellbeing and safety and understanding of how digital technologies can impact them for better but also for worse. Learners pointed out at the focus groups that screen time can become an issue with it being difficult to find a cut off time between home and school, and work and social use, with the social media aspect leading to distraction.

[11] Butler & Leahy, 2022, p 38
[12] EC 2020

Online safety and the safe and ethical use of digital technologies as a topic is addressed in more detail under Pillar 3 but goes across all elements of learners use of and access to technologies. It is a key component and consideration within teacher professional learning as well as across the curriculum and this will continue to be the case.

This Strategy will continue to work towards ensuring learners have the opportunity to develop the skills as set out above and that their voices are heard and taken into account in further developments in this area. This will be further examined in the Implementation Plan. Ultimately a fundamental focus of this Strategy is learners and their wellbeing and ensuring that all of the policies, supports and resources are aimed at providing opportunities for learners to develop their digital skills so that they can navigate the digital world in a confident and competent manner.



1.4. School Leadership

This Strategy recognises the importance of leadership in schools to drive and lead change so as to ensure the effective use of digital technologies within their schools. The role of school leadership is also crucial in the successful implementation of the Digital Learning Framework (DLF)[13] and enabling staff engagement in order to effectively link actions under the DLF to the School Self-Evaluation Process (SSE)[14].

School culture and leadership expectations and values, influence teacher motivation and can support the effective use of digital technology. School leaders, through their engagement and collaboration with others, cultivate and support conducive conditions for change by developing a shared vision grounded in pedagogical understanding and effective planning. They influence and guide professional growth by providing opportunities to engage in professional learning and access to resources, supporting and encouraging teachers to experiment in their classrooms, collaborate with other teachers, reflect on practice, and engage in professional conversations with teachers. In order to ensure that school leaders can do all of this, they need the necessary support, information, resources and professional learning.

During the consultation process there were calls for more focused professional learning supports aimed at school leaders. These supports would assist school leaders "in building their capacity to develop, lead and support a learning culture which leverages critical and purposeful uses of digital technologies for teaching, leaning and assessment within their school communities"[15]. There was also a sustained call for the allocation of a specific leadership role or designated staff member in schools such as a digital learning co-ordinator/leader, who would focus on providing pedagogical supports to colleagues, building capacity of teacher colleagues and assisting and driving the achievement of core strategic objectives around the use of digital technologies.

The Professional Development Service for Teachers (PDST) team continue to provide tailored professional learning programmes for school leaders at all stages of their careers from newly appointed principals and deputy principals, to experienced principals, and also for middle leadership in schools. All PDST professional learning courses and supports are designed to build digital competence and effectively embed digital technologies in teaching, learning and assessment. This will continue to be an important emphasis for PDST and all other current and future support services who support school leaders to lead digital learning planning in their schools during the implementation of this Strategy

13 https://www.dlplanning.ie/
14 http://schoolself-evaluation.ie/
15 Baseline Report: Towards a Successor Digital Strategy for Schools to 2027

This Strategy and its associated Implementation Plan aims to progress the development of increased supports to assist and empower school leaders to plan for the embedding of digital technologies in teaching, learning and assessment in their schools. A key objective of this Strategy is to provide a renewed focus on supporting leadership and management in schools to lead the embedding of digital technologies at school level.

1.5. The Role of the Teacher

The previous Digital Strategy for Schools recognised the pivotal role of teachers and school leaders in ensuring that digital technologies were embedded across teaching, learning and assessment. It is essential that teachers continue to be supported in developing the requisite knowledge, skills, and confidence. Considerable progress has been made with digital technologies playing a central role in transforming teaching, learning and assessment practices and this Strategy will build on this progress.

A central tenet of this Strategy is that pedagogical orientation continues to be the priority. There was increased active engagement with digital technology throughout the COVID-19 pandemic and it is important that the expertise and experience developed by both teachers and learners is built on, encouraged and supported.

There is a need for an integrated holistic approach to using digital technologies in education and it was clear from the consultation process that in some cases teachers face challenges such as why or how they should use technology while others see the use of digital technologies as a vital element of their practice.

The need for all teachers to have the requisite knowledge, skills and attitudes to embed digital technologies in their teaching, learning and assessment practices was central to the feedback received as part of the consultation process. Teachers felt that while they wished to engage in more planning and professional learning around the use of digital technologies, their biggest obstacle was having the necessary time to do so.

In relation to teacher practice, effective teaching with technology requires a blend of technology, pedagogy and content knowledge[16], which is known as the TPACK model. This model considers these knowledges in the following manner:

- Technological knowledge (TK): Knowledge and ability to effectively use a variety of technologies to support teaching, learning and assessment
- Pedagogical knowledge (PK): Knowledge of effectively applying a range of strategies and teaching approaches in practice
- Content knowledge (CK): Knowledge and understanding of the curriculum

The TPACK model will be used to inform teacher professional learning and the necessary supports and resources will continue to be developed to support all teachers to ensure the use of digital technologies becomes embedded in their practice. This will be expanded on in the Implementation Plan.

[16] Mishra & Koehler 2006

1.6. Inclusion

It is clear that technology has the potential to promote inclusion and remove barriers to learning when used successfully. The use of digital technologies can support differentiated learning, tailored to meet individual learner needs. There should be a focus on supporting those with additional learning needs to ensure they are given equality of opportunity to access the curriculum to the best of their ability and potential as well as supporting those learners at risk of educational disadvantage. The Department supports those schools with the highest concentrations of learners at risk of educational disadvantage through the Delivering Equality of Opportunity in Schools (DEIS) programme and these schools receive an enhanced allocation under the ICT grant.

The use of digital technologies can promote and facilitate inclusiveness and support the principles of the Universal Design for Learning (UDL) model of multiple means of engagement, representation and action/expression. UDL is a set of principles for curriculum development that gives all individuals equal opportunities to learn, including students with additional needs. It aims to improve the educational experience of all students by introducing more flexible methods of teaching, assessment and service provision to cater for the diversity of learners in our classrooms. This approach is underpinned by research in the field of neuroscience and is designed to improve the learning experience and outcomes for all students[17].

Multiple Means of Engagement

Stimulate motivation and sustained enthusiasm for learning by promoting various ways of engaging with material.

Multiple Means of Representation

Present information and content in a variety of ways to support understanding by students with different learning style/abilities.

Multiple Means of Action/Expression

Offer options for students to demonstrate their learning in various ways (e.g. allow choice of assessment type).

[16]

[17] https://www.ahead.ie/udl-framework
[18] Reproduced with permission from CAST and AHEAD'

The Department of Education will continue to prioritise the inclusion of all learners across the continuum of education. This will be reflected in curriculum development and will also include providing relevant supports and guidance for the use of digital technology to support inclusive practice.

The Framework for Junior Cycle provides for subject specifications and short courses developed by the National Council for Curriculum and Assessment (NCCA) to be designed to be "as universal as is feasible", thereby "providing meaningful and valuable learning opportunities for students from all cultural and social backgrounds and from a wide variety of individual circumstances".[19]

The National Council for Special Education (NCSE) and the PDST, Technology in Education team (TiE) have collaborated on the use of digital technologies for inclusion specifically in relation to the DLF and special schools as well as on advice on assistive technologies. The Department will continue to support this work and take on board the views from the consultation process in respect of any further developments in this area, specifically in relation to assistive technologies. It is of utmost importance that all learners have the opportunity to reach their potential, with digital technologies providing the means to overcome traditional barriers to learning and support inclusion across the system.

[19] DES, 2015, p.26

1.7. Teacher Professional Learning

The term 'teacher professional learning' (TPL) refers to the TPL continuum, from initial teacher education through to professional learning for practicing teachers, including induction and continuous professional learning over the life time as a teacher. Teacher professional learning empowers the teaching profession to better meet the challenging educational needs of young people in these complex times. The benefits of high-quality professional learning are vast and are vital to facilitate and support the implementation of this Strategy. When teachers engage in continuous professional growth, classroom practice evolves and improves.

TPL is described in the Teaching Council's Cosán Framework for teacher learning as:[20]

- Recognising teachers as autonomous and responsible learning professionals.
- Acknowledging the need for flexible design that can be applied to a variety of learning contexts.
- Facilitating teachers in identifying opportunities for quality learning.
- Recognises the importance of teachers having access to rich and varied learning opportunities.
- Providing an opportunity for teachers and stakeholders to acknowledge and recognise teachers' learning.
- Facilitating teachers in valuing their learning and in prioritising learning that benefits both themselves and their learners.

The previous Strategy established that the use of digital technologies in teaching, learning and assessment was to be embedded at each stage of the continuum of teacher education, that is initial teacher education, induction and continuous professional development. The UNESCO ICT Competency Framework for Teachers[21] was identified as playing a pivotal role in informing the design of all future teacher professional learning opportunities.

Department of Education support services offer professional learning opportunities for teachers and school leaders in a range of pedagogical, curricular and educational leadership areas. The PDST has a dedicated Technology in Education Team (PDST TiE) and a team of digital technology advisers who will continue to develop and facilitate flexible differentiated models of TPL.

[20] https://www.teachingcouncil.ie/en/publications/teacher-education/cosan-framework-for-teachers-learning.pdf
[21] https://en.unesco.org/themes/ict-education/competency-framework-teachers

Support and guidance on the embedding of digital technologies within subject and programme specific TPL is provided by all support services.

In 2021, the Department of Education commenced a project to integrate the four Teacher Education Support Services (Professional Development Service for Teachers, Junior Cycle for Teachers, National Induction Programme for Teachers and Centre for School Leadership) by September 2023. Each of these support services provide valuable professional learning opportunities for teachers and school leaders.

A Project Steering Group and Implementation Group have been established to progress this integration project. The aim is to build on the particular strengths of each individual support service to develop a more effective and efficient integrated service providing a 'one stop shop' for schools and teachers looking to access professional learning supports.

Teacher and leadership professional learning featured prominently throughout all aspects of the consultation process. As noted in the Focus Group Consultation Report, "the observations and suggestions capture the complexity of ensuring that ALL teachers and principals have access to a range of professional learning activities that best meet their needs"[22]. It was acknowledged that teachers and leaders in schools have varying levels of digital competence and proficiency and are working in different school contexts. Many commented that these different needs should be supported through differentiated and ongoing models of support that are responsive and specific to individual needs and approaches of schools and teachers.

The benefits of peer to peer learning were expressed throughout the consultation process, particularly in the focus groups and the Department will consider how best to further support this in a structured manner. Further opportunities for collaboration both within and across school communities, and peer to peer learning were called for in the knowledge that changes to practice take time to embed and that this approach encourages a whole school approach.

Some submissions in the consultation process called for a framework/system wide structured approach to teacher professional learning in the area of digital technologies, which would set out minimum standards and would provide sustained and ongoing support and evaluation.

Differentiated models of TPL that develop innovative practice using digital technologies in the classroom and promote collaborative practices, which would also develop digital literacy skills/digital competence in our young people and the provision of incentives for participation in TPL such as accreditation were also highlighted.

Equity of access to professional learning was also commented upon with requests for various models of professional learning to meet these needs. More opportunities to explore the use of digital technologies throughout the curriculum as a whole and in subject specific areas was also referenced and to ensure that digital technologies are not considered as an add-on to general practice.

While there are substantial resources available to teachers and school leaders on how to embed digital technologies in teaching and learning practices, stakeholder feedback indicates a significant lack of awareness of the available supports throughout the system. Another overarching theme to TPL was that sufficient time be allocated to allow teachers and school leaders undertake the necessary professional development in this key area. As digital

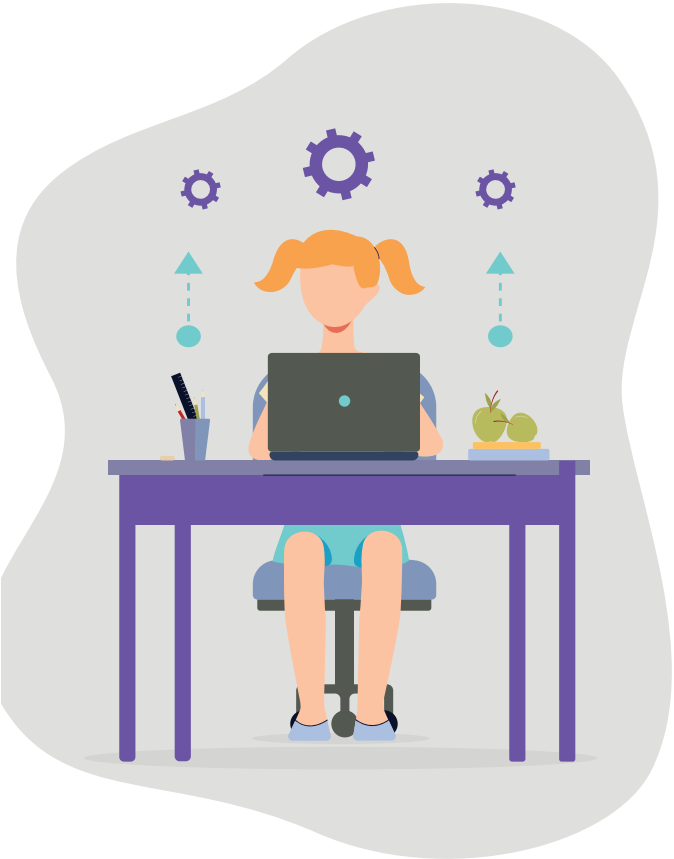
[22] New Digital Strategy for Schools Focus Group Consultation Report 2021, Pg 12

technologies are continuously developing and evolving, ongoing upskilling and learning opportunities are vital, with the preferred approach involving a continuous element to the professional learning in order to build competence and confidence.

The EU DEAP 2021-2027 has identified enhancing digital skills and competences for digital transformation as a key priority area. The new Digital Strategy for schools will also focus on these areas. Professional digital competence refers to both the ability to use digital technologies and the use of digital technologies to enhance classroom practice. Teachers should be supported to use their digital competence to design learning environments that enable learners to become competent and confident digital learners.

The new Digital Strategy will work towards delivering on the identified needs through building on the existing policies and strategies and providing additional resources where required. This will include enhancing the skills development of teachers and school leaders to ensure a digitally competent and confident education system, which will in turn foster the development of digital skills, knowledge and understanding in our student population as provided for in the curriculum. The new Strategy will place a stronger focus on the effective use of digital technologies in all teaching, learning and assessment activities and supporting schools to further embed effective digital capacity planning and development. An awareness programme will also be developed to provide clear signposts to existing and future content and supports, both national and international, in this area.

> As summarised in the Baseline Report "what is needed is a well-funded, coherent, flexible and sustainable model of professional learning for teachers, that will enable successful continued implementation of the DLF, specific to subjects, class levels and teacher knowledge of how to meaningfully use digital technologies in their practice. In particular, teacher professional learning programmes need to focus on student-centred, creative pedagogies, employ interdisciplinary approaches and project tasks to engage learners in real-world problem solving and how to create meaningful student-teacher connections using digital technologies. In order for this to happen teachers will need to be supported within a learning culture that encourages them to work with others critically and purposefully use a range of digital technologies for teaching, learning and assessment[21]



[23] Baseline Report: Towards a Successor Digital Strategy for Schools to 2027, p

1.8. Initial Teacher Education (ITE)

Embedding digital technologies across the continuum of teacher education ensures a system wide structured approach to digital education. Recognising that the role of initial teacher education is fundamental to the development of digital competencies in the teaching profession, the Teaching Council have included the development of digital skills for pre-service teachers as a key component of its revised Standards for ITE Programme, *Céim*[24], which was published in 2020. The introduction of digital skills as a core element of ITE was welcomed across the consultation process. However, there were concerns expressed that it can still be perceived as a stand-alone subject and not integrated across every aspect of the curriculum in initial teacher education.

All new primary and post-primary ITE programmes submitted to the Teaching Council for accreditation must now be in alignment with *Céim*. Existing programmes of ITE shall be realigned in accordance with *Céim* for commencement in September 2022 for first year student teachers.

The integrated professional induction framework, *Droichead*[25], which supports the induction of Newly Qualified Teachers (NQTs) into the teaching profession to attain full registration, is facilitated and operationalised by the National Induction Programme for Teachers (NIPT). NIPT will continue to provide guidance on the effective use of digital technologies. The Council's draft *Cosán* Framework also recognises that digital technologies have a key role in enhancing teaching and learning and will continue to be an important feature of policies on TPL.

Separately, the Department issued a guiding framework for teacher educators for consideration when preparing/revising their Teacher Education Programme. The framework highlights the range of knowledge and skills required by pre-service teachers to develop professional digital competencies so that they can effectively use digital technologies in teaching and learning. This framework "A Guiding Framework for Pre-Service Teachers' Professional Digital Competence"[26] was developed in consultation with representatives of the ITE sector.

Collaboration and engagement with ITE providers will continue to ensure further embedding and development of skillsets in the digital technologies space in ITE and to encourage the embedding of digital technologies across all modules.

[24] https://www.teachingcouncil.ie/en/news-events/latest-news/ceim-standards-for-initial-teacher-education.pdf
[25] https://www.teachingcouncil.ie/en/teacher-education/droichead/
[26] McDonagh, A., Camilleri, P., Engen, B. K., & McGarr, O. (2021). Introducing the PEAT model to frame professional digital competence in teacher education. *Nordic Journal of Comparative and International Education (NJCIE)*, *5*(4), 5–17. https://doi.org/10.7577/njcie.4226

1.9. Digital Content

This Digital Strategy for Schools continues to recognise that schools need to have access to a wide range of relevant, high-quality digital content, which serves to support teaching and learning at all stages of our education system. The Scoilnet portal[27], managed by the PDST, was developed for this purpose. It is an important resource to assist teachers in accessing digital content containing in excess of 23,000 curriculum tagged digital resources for use in teaching and learning.

While there was praise for Scoilnet as a resource, some feedback from the consultation process suggested the creation of a central repository of learning content and resources tagged to the curriculum, which is precisely what Scoilnet provides. This again highlights the need for an awareness raising programme on the substantial resources available through Scoilnet for teachers and school leaders.

During the consultation process, suggestions about making Scoilnet easier to navigate and making available a wider range of resources for SEN teaching and resources in Irish-medium and Gaeltacht schools were noted. The continued production and dissemination of high quality interactive digital content for all age groups in every curriculum area was also raised. This will be looked at in the context of the Implementation Plan.

The European Commission is developing a European Digital Education Hub, which will link national and regional digital education initiatives and actors and will support cross-sector collaboration and new modes of exchange of digital learning content. This will be easily accessible and will be a useful repository of information to support the development of Irelands' teachers' digital skillsets in line with European counterparts. The Hub will also serve as a think-tank supporting the development of policy and practice across Europe.

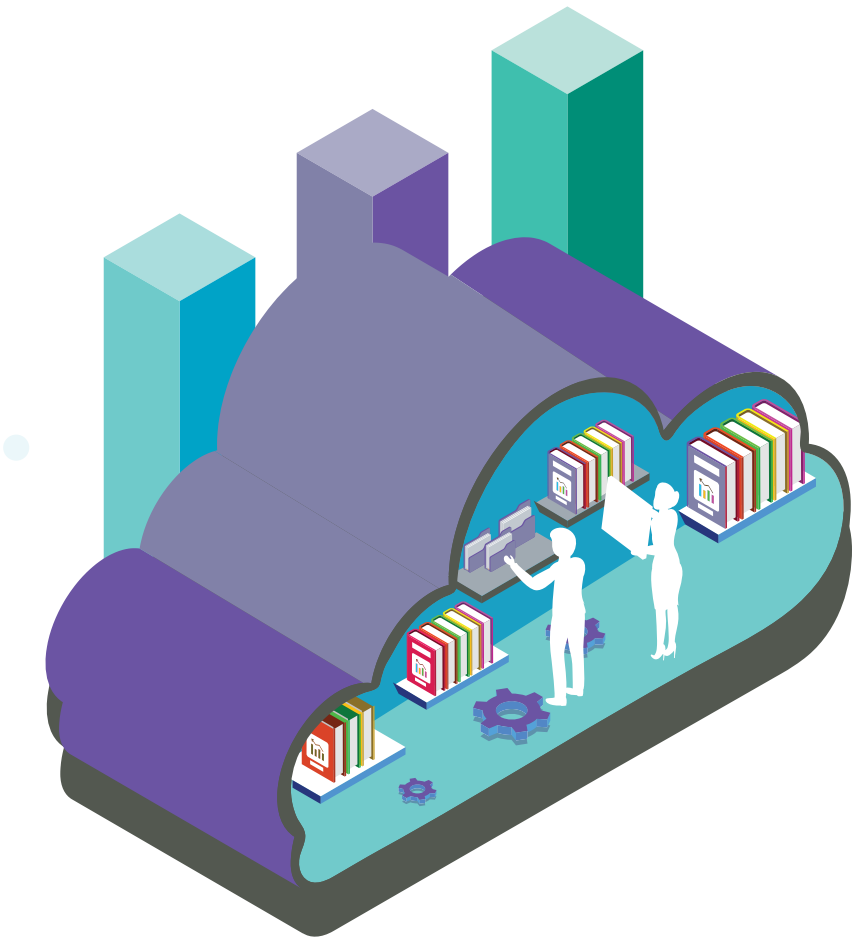
[27] www.scoilnet.ie

1.10. Planning for Digital and the Digital Learning Framework

This Strategy will continue to promote effective action planning at a whole school level with the aim of embedding digital technologies into individual practice across the school and for planning to be carried out as part of a consultative process. This process should be carried out with all relevant school stakeholders including teachers, learners, parents/guardians and Boards of Management, with meaningful links between digital planning and priority areas identified for school improvement using the SSE process.

Specific to the Irish context and a key support realised under the previous strategy was the development of the Digital Learning Framework (DLF).[28] It is the result of the adaptation and localisation of the UNESCO ICT Competency Framework and also drew from other relevant European and international Digital Competency Frameworks. It aligns closely with the SSE process and the standards and statements within "Looking at our School"[29].

The DLF provides a common reference with descriptors of digital competence for teachers and school leaders, promoting innovative pedagogical approaches which embed the use of digital technologies. It holds that improving the quality of students' learning should be the main driver of teaching, learning and assessment. Underpinned by constructivist principles, the framework supports high-quality education mediated by digital technologies promoting active learner participation and engagement in a wide range of learning activities.



[28] https://www.dlplanning.ie/
[29] https://www.gov.ie/en/publication/743565-looking-at-our-school-2016/

Typically the DLF, supported by comprehensive Digital Learning Planning guidelines, provides schools and teachers with a structure to support them in embedding digital technology in teaching, learning and assessment and guidance in developing a Digital Learning Plan (DLP) to best serve their schools' needs. The DLP articulates a school's vision for their use of digital learning technologies by outlining the situation with regard to digital learning in the school and describing how digital learning practices will be improved over a specified time-period with associated targets. The DLF is a key planning support in this process and is based on statements of effective and highly effective practice which describe digital competence for school leaders and teachers and there is extensive information and guidance available on this planning process.[30]

The consultation process identified that the vast majority of schools have Digital Learning Plans. However, some felt that the DLF was too vague in parts, not user friendly and that additional time is needed to develop and consider it properly. Further guidance was also recommended to ensure a more uniform understanding of what is meant by effective practice and demonstrating their practical implementation.

The Educational Research Centre (ERC) is currently conducting a longitudinal evaluation of the DLF and its impact on schools[31] and the outcome of this together with the views expressed in the consultation process will be considered by the Department in terms of any necessary refinement of the DLF.

Additional resources will also be considered to support the development of simple self-assessment tools, in line with the SSE process, to allow schools self-evaluate progress in implementing their Digital Learning Plans and provide recommendations where needed. The EU SELFIE[32] (Self-reflection on Effective Learning by Fostering the Use of Innovation Educational Technologies) tool, is a free online tool designed to help schools plan for the embedding of digital technologies into teaching, learning and assessment and has a strong basis in research. It can help a school's Digital Learning Team identify the school's current practices in relation to digital leaning and be used in tandem with the DLF.

Meanwhile, the SELFIEforTeachers[33] tool is another online tool developed by the EU, which helps teachers reflect on how they are using digital technologies in their professional practice and can be used by the Digital Learning team and individual teachers to identify professional learning needs in relation to digital technologies. Ireland was one of five EU countries where this was piloted in 2021 and the feedback was very positive with teachers finding the tool to be of high value and relevant to them.

Consideration will be given to the wider use of these EU tools in the Irish system, in tandem with the DLF, to support schools in their digital planning.

30 https://www.dlplanning.ie/
31 https://www.erc.ie/2021/12/15/erc-published-infographic-on-the-wave-1-results-of-its-longitudinal-evaluation-of-the-digital-learning-framework-dlf/
32 https://education.ec.europa.eu/self-reflection-tools/schools-go-digital
33 https://educators-go-digital.jrc.ec.europa.eu/

1.11 Digital Competence/Digital Skills

There was a strong call across all elements of the extensive consultation process for a standard minimum digital skills or digital competency framework for both teachers and learners, ensuring a good foundation in basic digital skills for all learners and a good understanding of the digital world. The DLF, as referred to above, provides a common reference with descriptors of digital competence for teachers and schools leaders in promoting innovative pedagogical approaches which embed the use of digital technologies and can be used as a tool in this process.

The terms digital competence and digital skills were used interchangeably throughout the consultation process. The Baseline Report examines this in more detail and this Strategy intends to explore, develop and agree, over the course of the Implementation Plan, a clear and unambiguous understanding of what is meant by these terms, which in turn will assist in a consistent understanding and development of what is meant by these terms across the school system.

The EU DEAP places the development of digital skills and competences as one of its two strategic priorities. There is clear evidence on the need to support digital competence in adults and young people with 44% of EU citizens having an insufficient level of digital skills, with Ireland slightly above the EU average at 46%[34]. This Strategy will complement and support the development of the new Literacy, Numeracy and Digital Literacy Strategy for all learners from early years, primary and post-primary levels, which aims to fulfil the Government's determination that all young people will leave school with the digital skills required for everyday life and further studies.

In addition to this, the European Commission's Framework for the Digital Competence of Educators (DigCompEdu)[35] describes what it means for educators to be digitally competent and influenced the development of the DLF. It provides a general reference framework to support the development of educator-specific digital competences in Europe. DigCompEdu is directed towards educators at all levels of education, from early childhood to higher and

[34] https://digital-strategy.ec.europa.eu/en/policies/desi
[35] https://ec.europa.eu/jrc/en/digcompedu

adult education, including general and vocational education and training, special needs education, and non-formal learning contexts.

Teachers across the system are at different levels of digital competence but all teachers should have the requisite knowledge and skills to integrate and embed digital technologies effectively in their practice, using available supports and resources. It is acknowledged that the use of digital technologies within the lives of learners and educators is both ever-evolving and ubiquitous in nature. As such, it is important for teachers, with the necessary support, to develop their own competence in this area in line with emerging trends and requirements, in order to fully realise the potential of digital technologies to support and enhance teaching, learning and assessment practices and to provide the most up-to-date learning experiences for learners. Self-reflective tools such as DigCompEdu, EU SELFIE and SELFIEforTeachers can assist teachers and school leaders in effectively identifying areas for development.
The Department, with its partners, will consider what further supports are needed in this area to help teachers develop their digital skills and will examine, in consultation and agreement with relevant stakeholders, the area of digital competence/digital skills for teachers and learners with agreed definitions.

1.12 Curriculum

As referenced in Harnessing Digital: The Digital Ireland Framework,[33]

> "the OECD have emphasised the need for the school system to prepare young people, enabling them to adapt to changes in the labour market, and become informed and responsible citizens. It stresses the benefit of greater integration of digital skills into the classroom, and associated teaching practices. Curriculum from early childhood to senior cycle offers multiple opportunities for the development of digital skills and digital literacy. Reform of the curriculum is already underway which will ensure that our young people are equipped with the digital skills and literacy required to participate fully in society".

A key driver in the use of digital technology in schools is its integration in the curriculum, as referenced in the Focus Group Consultation Report. Substantial progress has been made across the curriculum under the previous Strategy with some examples including:

- all new and revised curricular specifications now including clear statements that focus on the development of digital learning skills,
- the introduction of the Primary Language Curriculum which embeds digital literacy across its learning outcomes,
- the introduction of specific digital short courses at junior cycle as well as the embedding of digital skills and competencies across all junior cycle subjects, and
- the introduction of Computer Science at senior cycle.

The new Primary Language Curriculum (2019)[37] promotes digital literacy as an important aspect of children's learning in English and in Irish. The development of the new primary mathematics curriculum is also taking account of developments in digital technology and will see approaches associated with computational thinking embedded in the curriculum.

The Draft Primary Curriculum Framework (2020) which, at the time of writing is the subject of a broad and wide-ranging consultation, outlines 'being a digital learner' as one of seven key competencies intended to be embedded in learning outcomes across all curriculum areas and subjects from junior infants to sixth class. This draft framework also proposes that digital technology would become part of the curriculum area of Mathematics, Science and Technology, aiming to empower children to be active digital citizens and to develop their responsible, safe and ethical use of digital technology.

The Coding in Primary Schools Initiative ran from 2017-2019 with the final report[38] finding that coding and computational thinking at primary should be integrated across the curriculum as well as creating an explicit space to enable the teaching and learning of the fundamental skills required. The concept of coding and computational thinking within the primary curriculum is being considered within the context of the wider review and redevelopment of the full primary curriculum.

At post-primary level, the Framework for Junior Cycle supports the incremental development of digital skills through the eight key skills, while subject specifications and short courses offer opportunities for learners to develop and apply a

[36] https://www.gov.ie/en/publication/adf42-harnessing-digital-the-digital-ireland-framework/
[37] https://www.curriculumonline.ie/Primary/Curriculum-Areas/Primary-Language/
[38] https://ncca.ie/media/4155/primary-coding_final-report-on-the-coding-in-primary-schools-initiative.pdf

range of digital skills. Schools may also choose to offer students short courses in areas such as Coding and Digital Media Literacy at Level 3 and Enterprise in Animation at Level 2.

At senior cycle the use of digital technology is an important aspect of many Leaving Certificate subjects including Design and Communication Graphics and the Links Modules in the Leaving Certificate Vocational Programme. All Leaving Certificate Applied students undertake a recently revised mandatory module in Information and Communications Technology.

The Leaving Certificate subject Computer Science was initially introduced in a number of pilot schools in 2018 and has been available nationally as an optional subject for the senior cycle since September 2020. Feedback from the consultation reflected a desire for the number of schools currently offering it to increase so that more learners have the opportunity to study Computer Science.

This Strategy will continue to support all developments in the primary, junior and senior cycle curriculum with the overall aim that digital technology is an integral part of teaching, learning and assessment in every classroom and every subject. The objective continues to be that digital technologies and opportunities for the development of a wide range of digital skills are embedded across the continuum of education as proposed in the OECD (2020) model of curriculum goals[39].

1.13 Assessment

As noted in the Baseline Report, the consultation process highlighted the progress made in embedding digital technologies into teaching and learning across primary and post-primary schools. This includes the use of digital technologies and online platforms to support ongoing and formative assessment, in particular where technology can allow for more specific and immediate feedback. The use of digital portfolios in teaching and learning has also grown, providing a platform for student-centred learning, particularly in junior cycle and Transition Year.

The consultation highlighted how technology is widely used by students as part of their Classroom-Based Assessments (CBA) for junior cycle, to conduct research, manage, showcase and reflect on their learning, thereby demonstrating the potential of technology to enhance assessment.

The Department and its support services will place a renewed focus on further scoping the use of digital technologies to support ongoing assessment including the provision of further teacher professional learning opportunities and highlighting examples of effective practice from schools across the country.

The potential of technology to enhance summative assessment will be considered within the lifetime of this Strategy with further examination of how digital technologies could support and enhance summative assessment across both primary and post-primary as part of current and future curricular reform and redevelopment.

[39] Organisation for Economic Co-operation and Development. (2020). *What Students Learn Matters: Towards a 21st Century Curriculum*, OECD Publishing, Paris, https://doi.org/10.1787/d86d4d9a-en

PILLAR **2**

Digital Technology Infrastructure

2.1. Introduction and background

Significant investment was made in building digital technology infrastructure in schools under the previous Digital Strategy and the progress made at school level in progressing implementation must be acknowledged. This momentum will be maintained through ongoing investment to support enhanced digital technology infrastructure in schools and to build capacity for a high performing digital education ecosystem guided by the policy approaches articulated in this Strategy.

In that context, this Strategy will align, as appropriate, with the EU DEAP 2021-2027 and in particular with its Strategic Priority 1: *Helping develop a high-performing digital education ecosystem*, which lists infrastructure, connectivity and digital equipment as requirements to deliver on this priority. This Digital Strategy for Schools will seek to achieve a high-performing digital education ecosystem in Irish schools, informed by the consultation process and the ongoing development of technology in education including new and emerging technologies.

For the purposes of this Strategy digital technology encompasses technologies that are used in educational settings for teaching, learning and assessment purposes. These can include but are not limited to:

- Computing devices, networking/Wi-Fi, projectors and interactive panels (sometimes referred to as hardware or equipment).
- Educational software such as digital learning platforms and apps including those to develop computational thinking, coding, literacy and so on.
- Technologies to support inclusion and differentiated learning including access to the curriculum.
- Services supporting a variety of activities including schools administration.

This Pillar incorporates connectivity (both broadband services to schools and network infrastructure within schools), technical support and the provision of advice on digital infrastructural issues.

Pillar 2 Objectives

- **Establish sustainable funding mechanisms for the purchase and maintenance of digital technology infrastructure in schools.**
- **Meet the requirements for all primary, special schools and post-primary schools to embed digital technologies in their teaching, learning and assessment by the provision of appropriate broadband connectivity.**
- **Provide guidance and advice on the purposeful and effective use of digital technology infrastructure to support the embedding of digital technologies in teaching, learning and assessment.**
- **Research, establish and make available technical support solutions that are appropriate to and accessible for all schools**
- **Provide procurement mechanisms for schools, by working with relevant stakeholders, with comprehensive and easy to navigate guidance and support on procurement including how to access those mechanisms, which will assist schools in the purchase of equipment and services aligned to digital learning planning.**

2.2. Priorities for implementation

The Strategy recognises that schools require a robust, reliable digital technology infrastructure in order to effectively embed digital technologies into all aspects of school life. To maximise the efficiency of that infrastructure and ensure effectiveness in supporting the embedding of digital technologies in teaching, learning and assessment, it is apparent from the consultation that key requirements for schools include a commitment to funding and appropriate technical support solutions.

2.3. Funding for Digital Technology infrastructure

The grant funding of €210m which issued under the previous Strategy was recognised during the consultation process as a key factor in supporting schools to implement their Digital Learning Plans and embed digital technology across teaching, learning and assessment. This funding issued directly to schools as they are best placed to determine their own infrastructural requirements. Schools are expected to put in place Digital Learning Plans (DLPs) and align their ICT grant expenditure with their DLPs. Each tranche of funding was accompanied by a circular for the Scheme to support and advise schools of the criteria and rules of the scheme. DEIS schools received an enhanced allocation under the ICT grant scheme in recognition of the additional challenges to support those learners most at risk of educational disadvantage.

A further €200m in capital investment is committed to under the lifetime of this Strategy under the National Development Plan 2018-2030. School leaders, guided by their Digital Learning teams, will continue to have autonomy and flexibility in how they invest this funding, given the significance of each school's own context. Expenditure should continue to be aligned to the identified aims and objectives of the DLP and SSE processes. In addition to this the Department funds the Schools Broadband Programme at an annual cost of €13m to provide broadband connectivity to schools.

The consultation process called for more to be done to address the needs of learners who may be at risk of educational disadvantage because of the digital divide. This became much more apparent during the periods of schools closures

in response to COVID-19. In addition to the general ICT funding grant for schools, €50m in once off funding was granted under Ireland's National Recovery and Resilience Plan (NRRP). The aim of that funding is to support schools to address this concern and it issued to schools in December 2021.[40]

Further decisions in relation to funding will take account of concerns raised during the consultation process which included the following:

- Schools will need ongoing funding on a multi-annual basis, and certainty as to frequency of payments and amounts involved, to provide for infrastructure replacement and upgrade, investment in emerging technologies as appropriate, and maintenance and support.
- To maximise the impact of funding to embed digital technologies in teaching, learning and assessment, a broad holistic range of supports is required. These supports include alignment with digital learning planning, expert advice on technology, technical support and procurement including an expansion in the range of infrastructure provided through more easily-accessible procurement frameworks.

As part of the implementation of the Strategy funding may be reviewed, in line with exchequer funding availability and requirements, to ensure that the funding allocations are appropriate to meet the needs of both primary, post-primary and special schools.

2.4. Broadband – Schools Broadband Programme

Access to high-speed broadband allows schools to engage with online resources in real-time to support learning activities and engage with digital learning platforms and cloud-based services. The importance of appropriate connectivity was raised across the consultation process.

A key enabler to progress services in schools in the recently published national Digital Strategy *Harnessing Digital– The Digital Ireland Framework* is the commitment for secure, high quality, universal digital connectivity. As set out in the framework, to achieve this

> "the delivery of connectivity to even the most remote rural locations; facilitating the joining up of national networks, for example libraries, to Broadband Connection Points and Connected Hubs; and supporting the development of networks of regional innovation hubs".

This commitment for high speed broadband across the country is significant in terms of future proofing high speed broadband services to schools.

Currently all post-primary schools, and some 58 special schools offering post-primary programmes, are provided with minimum connectivity speeds of 200 Mbps and where usage in a school shows it requires a higher level of connectivity, this is put in place, with some schools already on speeds of up to 1Gbps. Upgrades in connectivity are provided to schools where increased speeds are signalled through ongoing monitoring of usage reports.

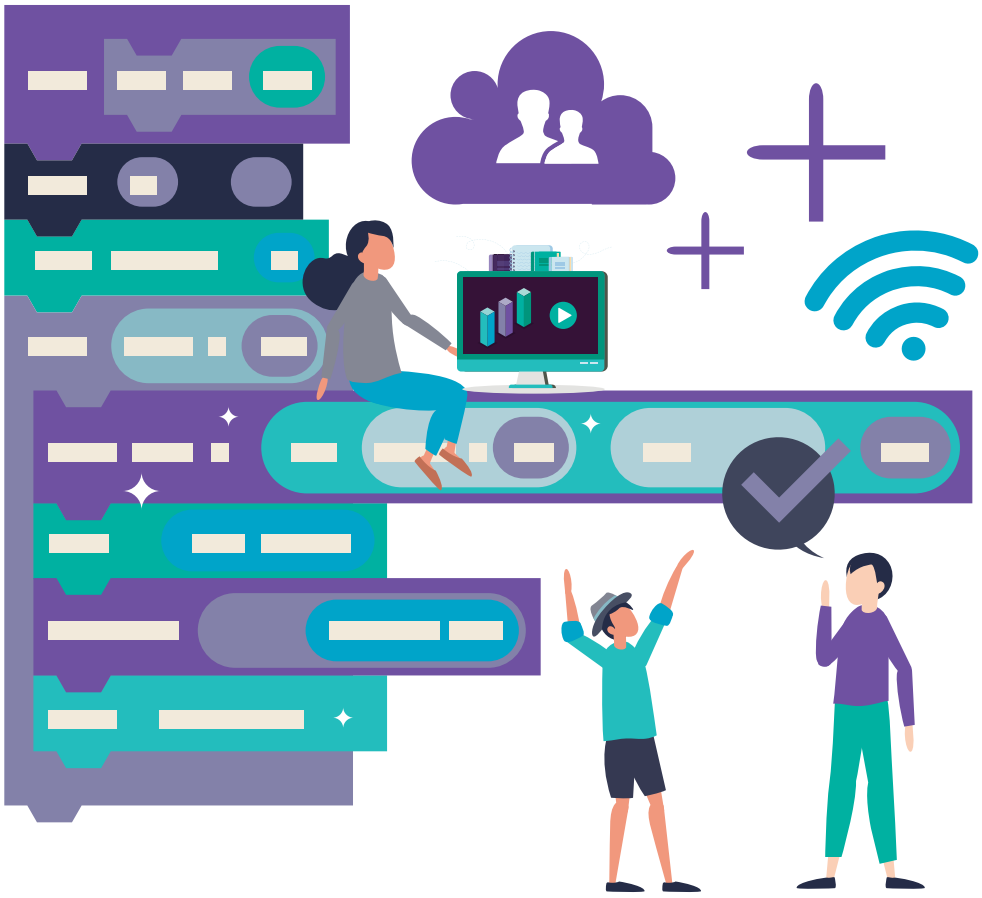
For primary schools and the balance of special schools, the policy of the Department is to provide minimum connection speeds of 100 Mbps or greater. At the time of publication, over half of the primary schools in the Schools Broadband Programme are on this level of

[40] https://www.gov.ie/en/circular/b4fea-grant-scheme-for-eu-nrrp-funding-to-schools-to-address-the-digital-divide-and-learners-at-risk-of-educational-disadvantage/

connectivity. For the balance of primary and special schools, it is intended that by early 2023 all of those schools will also be provided with 100 Mbps or greater connectivity. This will be achieved through the National Broadband Plan (NBP) Intervention Area implementation, which is underway, alongside planned commercial provision, and through a project led by the Department and funded by the EU National Recovery and Resilience Facility as part of Ireland's NRRP.

Maintaining and building on the minimum levels of connectivity (200 Mbps or greater post-primary, 100 Mbps or greater primary) will be a key deliverable under this Strategy and will facilitate further equity of access in relation to broadband connectivity to ensure that all schools regardless of location, size or sector will have access to high speed broadband provision. As further enhancements in the provision of high speed broadband infrastructure facilitate speeds in excess of the minimum speeds outlined above and as the usage increases based on usage reports, the Schools Broadband Programme will provide upgrades to those speeds in line with contractual and budgetary obligations.

Broadband services in schools operate under the Department's Schools Broadband Programme and first line technical support is provided via the Schools Broadband Service Desk, managed for the Department by the PDST TiE. This dedicated Service Desk works closely with the operators of the Schools Network, HEAnet (Ireland's National Education and Research Network) and service providers to support all aspects of the Schools Broadband programme. Support for schools through the Schools Broadband Service Desk is a key component of the Schools Broadband Programme and will continue to be provided and developed as required by the Department.



2.5. WiFi in Schools

The importance of robust, fit for purpose WiFi in schools was highlighted as an ongoing priority during the consultation. This was raised by a number of focus group participants as a key enabler to build the digital capacity of schools. To capitalise fully on the provision of high speed broadband connectivity, it is important that WiFi in schools must have the capacity to provide for the use of digital technologies in teaching, learning and assessment, including accessing online resources and using cloud-based tools and learning platforms, throughout the school. During the period of this Strategy, the Department and the PDST TiE will work closely with the Office of Government Procurement (OGP), the Schools Procurement Unit (SPU), the Education Procurement Service (EPS) and the Education and Training Boards Ireland (ETBI) and other stakeholders as necessary, to put in place an appropriate procurement mechanism for schools.

WiFi is a potentially costly infrastructure investment, and as such it is important that schools are provided with best value for money, fit for purpose, scalable and accessible solutions. The PDST TiE have collaborated with the Department's Planning and Building Unit on Technical Guidance documents to include information on provision of cabling and similar specifications in school buildings to provide broadband infrastructure. Advice and guidance is also provided to schools in considering appropriate WiFi infrastructure and this will be reviewed and updated as appropriate to continue to support schools, in particular those schools that may not have the expertise to fully determine the appropriate technical specifications and reasonable costs.

2.6. Technical Support

Technical support has consistently been raised across the system as a key enabler for full engagement with embedding the use of digital technologies in teaching, learning and assessment. The Digital Education at School in Europe report notes that

> "... the 2nd Survey on Schools on ICT (European Commission, 2019, p. 48) shows that a lack of pedagogical and technical support is one of the most important obstacles faced by teachers in the use of digital technologies."[38]

Feedback from the consultation process for the development of this Strategy highlights that technical support is one of the main issues raised in relation to engagement with digital technologies and that requirements vary widely across the system. The DLF national longitudinal evaluation Wave 1 Report[42] found that small rural primary schools see access to technical support as a major barrier when compared to larger schools, both rural and urban. Further analysis examined the mode of technical support (internal, external, a mixture), school enrolment size, and perceived effectiveness of technical support. This analysis indicated that smaller schools tended to have either all internal or mixed modes of technical support, whereas larger schools are more likely to have external or mixed modes. In addition, where the mode of technical support is wholly internal, the perceived effectiveness is substantially lower than with wholly external or mixed provision.

It is clear from all aspects of the extensive consultation process that the provision of high-quality technical support is not consistent and remains a significant issue for schools being both costly and time consuming. Currently schools adopt different approaches with some engaging local commercial providers on an annual basis for a fee, while others rely on in-house staff for some technical support issues. It is clearly not sustainable to solely rely on individual teachers who are perceived as being "good" with technology.

Indeed given the different profiles of schools and the voices heard throughout the consultation process, it is very clear that there is no one size fits all solution to this complex issue. Therefore, it is vital whatever solution is arrived at, that it is of high quality, relevant, timely and cost effective. In order to achieve this it is clear that a suite of options will have to be considered. These will include:

- The establishment of regional panels of approved providers who can provide the necessary technical support and advice to schools. This would result in schools being able to access relevant support and advice in a timely manner.
- The feasibility of a centralised high quality technical support and maintenance resource as a longer term objective.
- The potential for smaller schools to establish clusters to access technical support providers in a more cost effective and efficient manner. This is being considered in conjunction with the Primary Education Forum[43] and the development of their projects.

It will be a key aim of this Strategy to further examine the various approaches and in collaboration with relevant stakeholders, including market consultation as necessary, to put in place workable solutions to address

41 European Education and Culture Executive Agency, Eurydice, *Digital education at school in Europe*, Publications Office, 2019, https://data.europa.eu/doi/10.2797/66552, p 94
42 Educational Research Centre (Feerick, Cosgrove, and Moran, 2021)
43 https://www.gov.ie/en/organisation-information/d62fc-primary-education-forum/

technical support, including funding requirements, early in the implementation of this Strategy. This will be addressed in more detail in the Implementation Plan.

2.7. Procurement

Feedback from the consultation process highlights that procurement continues to be a challenge for schools, which could be addressed through increasing the provision of more school appropriate Frameworks for Equipment, Software and Services. Frameworks should also be made easier to access and use. Through the consultation, it is clear that such frameworks need to provide for a range of equipment including digital learning platforms and management software

Where frameworks are in place, for example the Single Provider Framework for Desktop PCs and Notebooks, these are welcomed in the system. However, it is apparent from the consultation process that in the main, schools wish to maintain autonomy as to the equipment and software they select. Relationships with and support for local providers are viewed by schools as very important and they would seek to maintain those rather than be obliged to use central mechanisms only.

The Department established the Education Procurement Programme Board in 2021 to oversee procurement in the education sector as a whole. The aim is to review existing procurement arrangements and develop a procurement strategy to meet the needs across the sector, including digital technology infrastructure. This Programme Board includes representation from key stakeholders and education partners, as well as relevant Department sections and agencies.
The Department and the PDST TiE will also continue to work closely with the Office of Government Procurement (OGP), the Schools Procurement Unit (SPU), the Educational Procurement Service (EPS), HEAnet and all the stakeholders to ensure that progress is made to address digital technology procurement requirements in schools.

Through the implementation of this Strategy, procurement will continue to be a priority to provide fit for purpose mechanisms to best support schools, including through the Education Procurement Programme Board.

2.8. Advice and support on infrastructure and related issues

2.8.1 Infrastructure and Digital Learning Planning

There was a strong view across the consultation process that schools need further guidance and advice in terms of what digital technologies best meet their schools' needs in terms of their Digital Learning Plans. School leaders do not necessarily always have the relevant and/or required expertise to determine what best fits their requirements and should be supported in making the right decisions for their school, teachers and learners. The provision of appropriate and accessible support and guidance can enable the effective and efficient use of digital technologies across all schools and for all learners.

An existing valuable support for schools is the extensive technical information and guidance available through the PDST TiE, with substantial resources available online[44]. A review of current provision will be undertaken to ensure that there is adequate capacity to meet the needs of the school system in the context of new approaches to teaching, learning and assessment under this Strategy that may impact infrastructure considerations and in supporting emerging technologies as these evolve and are relevant to

the school system. Current resources will also be reviewed and updated as necessary to ensure schools have access to a full suite of advice and support in terms of what best meets their infrastructural needs under their DLP's.

[44] https://www.pdsttechnologyineducation.ie/en/Technology/

Advice to support schools in developing various digital policies such as 'bring your own device' (BYOD), 'one-to-one device' and other possible approaches, highlighting key requirements and considerations such as consultation with the wider school community, access and support for all learners, and alignment with their DLP, will also be progressed in actions undertaken under this Strategy.

Effective digital learning planning is key to ensuring that schools are putting in place appropriate planning to ensure the embedding of the use of digital technologies. As noted, expenditure should align with this plan, and as advised in the circulars that have accompanied the grant allocations, funding can be used for a wide range of computational devices for learners and teachers, audio visual equipment such as digital projectors, and software applications to support learning. Guidance for schools on Digital Learning Planning and associated resources are available online.[45]

As schools build their own capacity it is vital that they continue to be supported and under this Strategy it is envisaged that these resources will be expanded and updated to meet and address emerging needs in schools. Key considerations for schools in aligning their digital technology infrastructure with their DLP's will be addressed. Guidance will be enhanced so that all learners are included and supported to access digital technologies according to their needs. Any such resources will be made easy to navigate for schools to support the alignment of digital technology infrastructure development with the school's digital learning planning.

The potential for digital technology to support differentiated and individualised learning can require specialist infrastructure. The Department and PDST TiE will engage as required with the NCSE and relevant agencies to provide suitable advice and mechanisms to continue to support inclusion through the use of digital technologies.

2.8.2 Environmental Sustainability and Green Procurement

Where schools are involved in the acquisition and ongoing ownership of digital technology infrastructure, due regard needs to be taken of the environment and sustainability requirements. As public bodies, schools are obliged to achieve energy efficiency improvements. The Department and the PDST TiE have worked with the Sustainable Energy Authority of Ireland to develop extensive resources to support schools in this area.

[45] https://www.pdsttechnologyineducation.ie/en/Planning/ and https://www.dlplanning.ie/

Energy in Education[46] offers a range of supports designed to help school communities to improve energy use practices, reduce school operating costs and protect the environment. This includes information for schools on relevant considerations for digital technology infrastructure. The Department and the PDST TiE will continue to collaborate with the SEAI as required to provide appropriate supports and resources to schools.

Current Government policy is to implement Green Public Procurement (GPP) in all tenders by 2023. This means that all procurement using public funds will have to include green criteria.

The Environmental Protection Agency (EPA) recently published its 2021 *Green Public Procurement: Guidance for the Public Sector* document[47]. This guidance and accompanying criteria support the inclusion of sustainable and green practices into public sector procurement procedures. They are aimed primarily at public sector procurers in central and local government, state agencies and other public bodies such as universities, hospitals, and schools.

The guidance for Green Public Procurement criteria for ICT Products and Services cover the procurement of Stationary ICT Devices, Mobile ICT Devices, Data Centres and the services they provide, and facilities or services which specify the use of these products (including cloud services, data entry, web design, mobile communications contracts etc.).

In establishing procurement mechanisms for schools under this Strategy, the Department and the PDST TiE working with relevant stakeholders as required including the OGP, EPS, SPU, ETBI, management bodies and the SEAI, will aim to put in place guidance and resources to support schools in meeting their obligations in terms of environmental Sustainability and the Green Agenda.

2.8.3 Compliance with Website and Mobile Applications Accessibility Regulations

Public bodies in Ireland, including schools, are required to ensure their websites and mobile apps are accessible to all people, including persons with disabilities. The European Union (Accessibility of Websites and Mobile Applications of Public Sector Bodies) Regulations 2020, underpinning accessibility rights, came into force in September 2020. These regulations build on existing obligations to make all websites and services offered to the public accessible under the Disability Act 2005 and the Code of Practice on Accessibility of Public Services and Information provided by Public Bodies.

Schools are already subject to the Equal Status Acts 2000 and 2004[48], and are supported through information provided by the Department and relevant support services on this. Of relevance in the context of the 2020 Accessibility Regulation are the requirements under the Equal Status Act to provide reasonable accommodations. As outlined in the Schools and the Equal Status Act guidance booklet that is, "special treatment or facilities or making adjustments for a person to enable them to access a service"[49].

The obligations of schools under these regulations should be incorporated by them as part of their Digital Learning Planning and digital infrastructure development. The National Disability Authority is responsible for the operation of the regulations, and has developed guidance and information which is available on their website. The Department and the PDST TiE will work with the NDA and with schools as necessary to provide appropriate support during the period of this Digital Strategy. The obligations will also be reflected as required in procurement mechanisms and advice.

[46] http://www.energyineducation.ie/
[47] www.epa.ie
[48] https://www.irishstatutebook.ie/eli/2000/act/8/enacted/en/html
[49] https://assets.gov.ie/25063/a6e913a466344dce9530ce261b41d6c5.pdf, (2005, p 9)

PILLAR **3**

Looking to the Future: Policy, Research and Digital Leadership

3.1. Introduction

The Digital Strategy for Schools reflects the ongoing policy commitment of the Department to the embedding of digital technologies in teaching, learning and assessment. Key to advancing this policy is commitment and strong leadership at every level of the education system, from national level to local school level. This is communicated strongly in the EU DEAP under Priority 1 to foster the development of a high-performing digital education ecosystem and under Priority 2 in enhancing digital competences for the digital transformation.

In a review of the previous Digital Strategy for Schools as part of the Baseline Report, the importance of "system alignment for sustainable planning" was highlighted. The new Digital Strategy will foster policy alignment across the various policy areas of the Department and its agencies, and at school level. This will be supported by oversight structures to progress its implementation, continued support for school leadership and planning, and research to ensure relevance and effectiveness of the policy approach over the lifetime of the Strategy, with a particular focus on how the Strategy is enhancing the educational experience of all learners. This Strategy will complement and support wider relevant policies across Government and at EU level.

Pillar 3 Objectives

- **Ensure the Digital Strategy for Schools to 2027 and its associated Implementation Plan supports and complements other relevant strategies and polices both nationally and at EU level.**
- **Provide assistance and guidance to schools to understand how relevant strategies related to the use of digital technologies in teaching, learning and assessment can be implemented.**
- **Continue to engage with and monitor relevant international and EU initiatives including the EU DEAP so that research and supports can be considered and adopted for the Irish context and disseminated to the system.**
- **Promote participation and engagement in EU and national research.**
- **Undertake research in key areas to inform the development of relevant supports and resources for schools.**
- **Continue to support the development and dissemination of high quality resources to promote the safe, responsible and ethical use of the internet and digital technology, informed by national and international policy and best practice.**
- **Promote the use of digital technologies to facilitate communication within the wider school community and education ecosystem particularly involving parents and learners.**

3.2. Key relevant strategies and policies.

It is clear from the consultation that schools can find the volume of strategies and initiatives that they must engage with difficult to manage and the relationship between these various strategies and initiatives may not always be very evident at school level. While it is important that the education system benefits overall from these strategies and policies, it is also important that we, as a Department, assist schools to make the appropriate linkages across interlinking policy areas.

In that context it is an aim of this Digital Strategy to align with strategies relevant to digital technology and to assist schools in understanding how to make appropriate linkages across different but dependent policy areas. School leaders will be supported to interpret and apply this Strategy in their own school and for individual teachers to apply to their own practice. A key component for future delivery of this Strategy will be that policy developments and innovations are evidence informed and benefits are realised for all learners.

3.2.1 EU Digital Education Action Plan 2021-2027[50]

The development of this Digital Strategy included consideration of relevant polices and strategies, including the EU DEAP. Considerable research and an extensive consultation process informed the EU DEAP and it can guide and assist approaches for the Irish context based on the experience in other EU jurisdictions, as well as research and expertise. It offers a long-term strategic vision for high-quality, inclusive and accessible European digital education.

The vision contained in the EU DEAP presents opportunities which can be progressed under this Strategy primarily in terms of equality, accessibility and inclusiveness; connectivity, equipment and organisational capacity, ensuring that all teachers and school leaders are competent and confident users of technology.

Throughout the implementation of this Strategy, relevant initiatives and developments under the EU DEAP will be considered and disseminated as appropriate to the Irish school system.

3.2.2 EU Council Recommendation on blended learning for high quality and inclusive primary and secondary education[51]

Of relevance also is the EU Council Recommendation on blended learning for high quality and inclusive primary and secondary education which defines blended learning in formal education and training as involving a diversity of approaches and is to be understood as a school (in primary and secondary education), teacher or learner taking more than one approach to the learning process:

- blending school site and other physical environments away from the school site (either with the presence of a teacher, or separated by space and/or time in distance learning);
- blending different learning tools that can be digital (including online learning) and non-digital

Building on the skills developed during school closures, many teachers chose to retain some of the digital approaches employed upon their return to the classroom, alongside the established classroom-based teaching approaches. This blended learning approach continues to increase in prominence across Europe and globally.

As part of its recommendations, the EU advises countries to build on successful innovations introduced or tested during the pandemic and to share and scale good practices. It is important to note that innovations do not replace but complement school-site and face-to-face learning. This EU Council Recommendation will inform the further development of relevant supports and resources in this area.

3.2.3 Harnessing Digital: The Digital Ireland Framework[52]

As already referenced, the national digital strategy, *Harnessing Digital: The Digital Ireland Framework* aims to promote the digital agenda effectively and coherently across all areas of Government policy and service delivery, working closely with all stakeholders. An overarching aim of the strategy is for Ireland to play a key role in Europe in advancing the new digital decade – the goal of which is the successful digital transformation of Europe by 2030. The development of the national digital strategy included extensive inter-departmental consultation. This Digital Strategy for Schools will align with relevant aspects of the framework in order to reflect the overall national policy context and will leverage developments under the national strategy to progress digital transformation in the school sector.

[50] https://education.ec.europa.eu/focustopics/digital/educationactionplan
[51] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021H1214%2801%29
[52] https://www.gov.ie/en/publication/adf42harnessingdigitalthedigitalirelandframework/

3.2.4 National Strategy on Artificial Intelligence (AI) 'AI-Here for Good'[53]

Ireland's first National Strategy on Artificial Intelligence (AI) '*AI-Here for Good*', published in 2021, sets out how Ireland can be an international leader in using AI to benefit our economy and society, through a people-centred, ethical approach to its development, adoption and use. One of its objectives is to consider how AI can be incorporated into future policy for digital learning. As noted in the Baseline Report, which details the work underway on AI in education at EU level, it is important that the Digital Strategy for Schools considers the use of data and AI in the education context. During the implementation of this Strategy, advice and support, informed by the National AI Strategy, and developments at EU level, will be developed and disseminated to schools as appropriate.

3.2.5 Other strategies

Other relevant strategies which will be used to inform the development of actions in the Implementation Plan include the *National Skills Strategy 2025 – Ireland's Future*[54] and *Adult Literacy for Life - a 10-year adult literacy strategy*[55] (both Department of Further and Higher Education, Research, Innovation and Science, DFHERIS). This will require further collaboration with DFHERIS in developing relevant actions while recognising the role of the Digital Strategy as part of the continuum of the overall requirement for digital skills for all citizens.

Building digital skills and digital competency and addressing concerns about unequal access to new technologies as provided for in this Strategy, will help address concerns about a digital divide and also accelerate progress towards the United Nations Sustainable Development Goal 4 - ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. The new Education for Sustainable Development Strategy to 2030 which is currently being developed jointly by the Department of Education and DFHERIS, aims to ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development (SDG 4.7).

This Strategy will work alongside and reinforce the Department's STEM Education Policy Statement 2017-2026[56] to encourage broader participation and enhance STEM learning for all learners, with a particular focus on increasing participation in STEM by females.

The Department will make sure to complement and reinforce the objectives of the Digital Strategy in other current and future policies and strategies as well as in its Implementation Plan including ongoing junior cycle reform, planned senior cycle reform[57], developments related to the primary curriculum framework, plans for the review of the Anti-Bullying Action Plan, the development of the Initial Teacher Education Policy Statement and the forthcoming Numeracy, Literacy and Digital Literacy Strategy.

Under this Strategy schools will be supported in their understanding and implementation of these various strategies and policies and how digital technologies can be applied effectively to assist schools in this context.

53 https://www.gov.ie/en/publication/91f74-national-ai-strategy/
54 https://www.gov.ie/en/publication/69fd2-irelands-national-skills-strategy-2025-irelands-future/
55 https://www.gov.ie/en/publication/655a4-adult-literacy-for-life-a-10-year-literacy-strategy/
56 https://www.gov.ie/en/policy-information/4d40d5-stem-education-policy/#stem-education-policy-statement-2017-2026
57 https://ncca.ie/en/senior-cycle/senior-cycle-redevelopment/

3.3. Safe and ethical use of the internet and digital technologies in teaching, learning and assessment.

The internet and the effective use of digital technologies can bring considerable benefits for the education and development of children and in the realisation of Children's Rights including the rights to the freedom of expression, assembly, association, education and access to appropriate information in the online space, the right to play and the right of participation[58].

The safe and ethical use of the internet was raised as a concern across all strands of the consultation, in particular in relation to the overuse of digital technologies and expressed by young people through the focus group for post-primary students. Notable inputs include "Teenagers are being bombarded with a lot of digital and this is adding to their anxiety" and "Students reported that it can be difficult sometimes to find the cut off between school and home time" [59].

The need to balance the opportunities and benefits associated with the use of digital technologies in education with its safe and ethical use was referenced consistently throughout all strands of the consultation. Research indicates that young people with higher levels of digital skills are more equipped to deal with potential risks encountered online.[60] Throughout the consultation process, the view was that all learners should be equipped with the knowledge to empower them to engage

[58] The UN Committee on the Rights of the Child launched on 24 March 2021 a guiding document on children's rights in relation to the digital environment, which embeds children's rights online into the larger framework of the UN Convention on the Rights of the Child. https://en.unesco.org/news/unesco-welcomes-new-international-instrument-childrens-rights-relation-digital-environment

[59] New Digital Strategy For Schools Focus Group Consultation Report 2021(H2 Learning, 2022, p8)

[60] Vandoninck, S., & D'Haenens, L. (2015). Children's online coping strategies: Rethinking coping typologies in a risk-specific approach. Journal of Adolescence, 45, 225–236

effectively and safely with technology, echoing the 2021 Report from the National Advisory Council for Online Safety[61]. Ultimately the vision is for our young people to be digital citizens and this should be embedded across the curriculum at an age appropriate level.

The internet introduces children and young people to new ideas and diverse sources of information that can help them to engage with others and become more respectful of different opinions, viewpoints and backgrounds. While the use of digital technologies brings many opportunities to young people, there are certain risks that also apply. Participation in the online environment exposes our children and young people to online risks such as exposure to inappropriate content, harmful interaction with other children or with adults and openness to online bullying. Now more than ever it is essential that our young people are well-versed in how to be safer online. Providing an effective response to online safety requires collaboration between many stakeholders including Government, parents/guardians, educators, industry and individuals themselves.

Government

At Government level there are a number of Departments with responsibility for online safety including the Department of Justice; the Department of Tourism, Culture, Arts, Gaeltacht, Sports & Media; Department of Environment, Climate & Communication; Department of Health; Department of Children, Equality, Disability, Integration & Youth; the Department of Enterprise, Trade & Employment and the Department of Education.

The Department of Education leads on schools policy development in the area of digital technologies in teaching, learning and assessment including online safety. This includes providing information and supports to schools, parents and young people on the safe use of the internet.

The Department is also represented in an advisory capacity on the National Advisory Council for Online Safety[62], comprising non-governmental, industry, and academic stakeholders. Its role is to:

- provide advice to Government on online safety issues
- identify emerging issues where government intervention might be needed
- help in the creation of clear and easy to understand online safety guidance materials for all internet users
- examine national and international research and communicate key findings to Government, stakeholders and the wider public

The Council's Report of a National Survey of Children, their Parents and Adults regarding Online Safety[63]highlights the need for online safety measures and this is one of the areas that will be addressed by the Online Safety and Media Regulation Bill [64] and will inform the development of further resources for schools and families.

This Bill is intended to proceed through the Houses of the Oireachtas in 2022 and among other things will establish a robust regulatory framework to deal with the spread of harmful online content. It also provides for the appointment of an Online Safety Commissioner as part of a wider Media Commission to oversee the new regulatory framework for online safety.

61 https://www.gov.ie/en/publication/ebe58-national-advisory-council-for-online-safety-nacos/ Report of a National Survey of Children, their Parents and Adults regarding Online Safety
62 https://www.gov.ie/en/publication/ebe58-national-advisory-council-for-online-safety-nacos/
63 https://www.gov.ie/en/publication/1f19b-report-of-a-national-survey-of-children-their-parents-and-adults-regarding-online-safety/
64 https://www.gov.ie/en/publication/d8e4c-online-safety-and-media-regulation-bill/

The Commissioner will govern this new framework through binding online safety codes and robust compliance, enforcement and sanction powers. Online safety codes will deal with a wide range of issues, including measures to be taken by online services to tackle the availability of harmful online content, for example cyberbullying material, on their services.

Once this Bill is enacted, supports and information will be made available to schools on all of the relevant aspects.

Schools

School boards of management are responsible for the welfare and safety of students under their care and are required to have a range of policies in place including policies on the safe and ethical use of technologies, anti-bullying and a code of behaviour. The board is also responsible for ensuring that the curriculum provided meets the academic as well as developmental needs of its students.

Promoting a holistic approach to student wellbeing, including in the online space, the Department's Wellbeing Policy Statement and Framework for Practice[65] sets out the ambition and vision that the promotion of wellbeing will be at the core of the ethos of every school and that all schools will provide evidence-informed approaches and support, appropriate to need, to promote the wellbeing of their students and that Ireland will be recognised as a leader in this area. There are extensive professional learning opportunities and curricular supports available to schools to assist them in the development of policies and practices on the safe use of the internet including on the prevention of bullying, including cyberbullying, and harassment. These include the Social Personal Health Education (SPHE) curriculum and the junior cycle Digital Media Literacy short course, the PDST, the Webwise Programme and the Department funded national anti-bullying website[66].

A review of the Department's Action Plan on Bullying and the Anti-Bullying Procedures for schools is underway. This will take account of the significant developments in research and international best practice relating to anti-bullying measures, with a focus on the areas of cyber bullying, gender identity bullying and sexual harassment. The review will also give detailed consideration to the recommendations contained in the Oireachtas Joint Committee Report on School Bullying and the Impact on Mental Health[67] and will involve significant consultation and collaboration across the Department of Education, with other Government Departments and bodies including the Ombudsman for Children, and with a broad range of education stakeholders, including parents/guardians and learners.

Webwise[68]

Webwise provides support and resources in the area of online safety and digital citizenship and is co-funded by the Department and by the European Union's Connecting Europe Facility. It is managed by the PDST and promotes the autonomous, effective and safer use of the internet by young people through a sustained information and awareness strategy targeting school leaders, teachers, parents/guardians and learners themselves with consistent and relevant messages.

All schools are advised to have an Acceptable Use Policy (AUP) in place, which governs students' use of digital technologies in schools and covers a wide range of issues surrounding the rights, responsibilities and privileges connected with the use of technologies. Webwise includes an AUP template that can be customised for all schools to use, together with examples of such policies from other schools.

65 https://assets.gov.ie/24725/07cc07626f6a426eb6eab4c523fb2ee2.pdf
66 www.tacklebullying.ie
67 https://data.oireachtas.ie/ie/oireachtas/committee/dail/33/joint_committee_on_education_further_and_higher_education_research_innovation_and_science/submissions/2021/2021-08-23_report-on-school-bullying-and-the-impact-on-mental-health_en.pdf
68 https://www.webwise.ie/

The Webwise programme is supported by a dedicated online hub for teachers/schools with extensive SPHE curricular supports that help teachers to integrate internet safety into teaching and learning in their school and gives them the confidence and skills to raise awareness and prevent harmful online behaviour by their learners.

A Webwise Parents Hub and a Youth Hub are also available with an extensive array of resources and supports that give practical information and advice on key issues such as respectful online communication, ethical use of digital technologies, cyberbullying, image sharing, social media, popular applications and websites and more. Such resources are developed with the help of many stakeholders including parenting experts, child safety experts and subject experts, other Government Departments, An Garda Síochána, Industry and the Webwise Youth Advisory Panel.

Webwise are members of the Insafe cooperation network[69], which aims to empower children and young people to use the internet, as well as other online and mobile technologies, positively, safely and effectively. They are also involved in the SaferInternetIE (SII) project, which is a consortium of industry, education, child welfare and government partners that provide awareness, hotline and helpline functions and activities in the Republic of Ireland.

Throughout the implementation of this Strategy, Webwise will continue to develop and disseminate relevant resources and run campaigns addressing key topical issues as they arise. This will take into account relevant recommendations and advice such as those arising from the review of the Action Plan on Bullying and from the National Advisory Council for Online Safety.

Supports will also be developed as necessary to advise schools following the enactment of the Online Safety & Media Regulation Bill and in relation to any further actions arising from engagement at European level including the European Better Internet for Kids Strategy[70] and the Council of Europe reports/guidelines on the rights of the child in the digital environment and any other relevant national/international report or recommendation.

[69] https://safe.si/english/insafe-network
[70] https://www.betterinternetforkids.eu/

3.4. Communication and Consultation with the School Community

The periods of school closures highlighted the central role of parents/guardians in supporting the learning and education of their children whilst overseeing their children's use of digital technologies and general wellbeing. Sustaining and building on that role emerged as an important consideration during the consultation, with parents needing to have the necessary digital competencies to support their children with remote learning and the use of digital technologies. One in two adults in Ireland struggle with their digital skills[71] and parental engagement in digital learning for their children will need to be further supported. This will be done in conjunction with other relevant Government Departments and agencies.

Another area highlighted by school closures was the ability of digital technology to facilitate and improve communications between school and home and this benefit was raised in the consultation process with a view that it should continue to be utilised and developed further.

Currently, schools are advised to consult with the wider school community, in particular parents/guardians and learners in developing and reviewing their digital learning plans, as well as on relevant policies in particular Acceptable Use Policies. In the questionnaires completed by parents as part of the consultation process, many felt they did not have sufficient information on how digital technologies were used to support their child's education. It is important that parents feel involved and are active participants in their child's education and how best to further support this will be considered.

While the spirit of partnership is already in place in many schools across the country, the Education (Student and Parent Charter) Bill, once enacted, will provide a mechanism for enhanced consultation on such matters in schools. One of the key concepts of the Bill is the need for a school to consult with learners and their parents on individual school plans, policies and activities. This legislation will provide for the development of charter guidelines which will set out a clear framework for engagement between schools, parents/guardians, learners and the wider school community.

The charter guidelines will also set out requirements in relation to consulting with the school community and how schools invite and respond to feedback and comments from the school community on an ongoing basis. The charter guidelines will be published following full consultation with the education partners, including bodies representing learners and parents/guardians. The consultation process will help ensure that the charter guidelines address how schools engage on the plans, policies and activities that are of particular interest to learners and their parents/guardians, including on the use of digital technology in schools.

[71] https://www.gov.ie/en/publication/655a4-adult-literacy-for-life-a-10-year-literacy-strategy/

3.5. Communication and Consultation with Industry

The development of a knowledge-driven and digitally-enabled society is central to Ireland's economic and social progress and is an integral component to key national strategies such as Future Jobs Ireland[72]. Throughout the consultation process the importance of digital skills was raised for both general life skills and for future employment and career options. Industry representatives participating in the focus group and through their submissions reported encountering skills shortages in technology vacancies and yet technology firms are among the fastest growing industries in Ireland. By providing learners with the opportunity to learn key foundational skills at a young age, this will provide them with the basis to continue to develop these skills.

It was considered that a holistic approach to the use of digital technologies and facilitating learners' engagement with interesting and interactive learning environments will lead to collaborative approaches which are crucial in developing relevant skills for the future of work in this industry.

The potential for industry to support digital transformation and capacity building in schools, and their willingness to engage on that basis with the Department and with schools, emerged during the consultation process. It is intended to establish an Industry Consultation Group to harness that input and provide a formal means of communication between the Department and key industry stakeholders to support the implementation of the Strategy.

In terms of industry engagement directly with schools, guidelines developed by the Department in conjunction with business/industry are available to advise on partnerships whereby schools and business/industry can form quality, inclusive and relevant educational links, to improve STEM/digital learning experience[73]. It is evident from the consultation process that a lot of good work is underway in this area already but the levels of engagement can vary across the country. The means by which a more consistent approach can be developed will be further considered in the Implementation Plan.

[72] https://www.gov.ie/en/campaigns/33b78d-future-jobs-ireland-preparing-now-for-tomorrows-economy/
[73] https://www.gov.ie/en/publication/756dd-stem-partnerships/

3.6. Research and Innovation

By definition, the use of digital technologies in teaching, learning and assessment is a dynamic and progressive area, with ongoing innovation and the potentially disruptive impact of emerging technologies, requiring flexible and innovative policy responses. Supporting, capturing, promoting and sharing the innovative use of digital technologies across the system, and demonstrating how this can enhance teaching and learning is also very important. As an example of one aspect of how innovative practices are currently shared, the PDST TiE have an online library of effective practice videos[74] and this Strategy will continue to support the further development of these to include new and emerging technologies.

When used appropriately, technology can be leveraged to enhance access, participation, engagement, and the development and application of skills in the classroom. The OECD strategy Innovating Education and Educating for Innovation[75] outlines why educational innovation matters, citing four reasons namely, educational innovations can:

i improve learning outcomes and the quality of education,
ii contribute to the enhancement of equity and equality,
iii have positive effects on efficiency, and iv
iv update the educational system to keep track and not lose pace compared to societal and economic changes that are occurring simultaneously.

Research-informed innovative pedagogy constitutes a key focus within this Strategy. Here, the potential of digital technologies to transform the way in which learners engage with curricular content is recognised and valued. Such innovative approaches to teaching, learning and assessment can lead to increased learner engagement, building capacity for learners to be more selective and self-motivated in growing their knowledge as well as providing for an improved inclusive learning experience for all learners. Through the life of this Strategy, professional learning opportunities will continue to be provided to teachers to enable them to better understand, engage with and embed digital technologies as well as to develop understanding for new and emerging technologies, all of which can help inform their classroom practice.

A strong research base, which will continue to be developed, will ensure that the supports and initiatives envisaged under this Strategy remain relevant and impactful and can be enhanced as required so that schools and practitioners can obtain the best supports to inform their own embedding of the use of digital technologies.

The 2018 Digital Strategy Action Plan saw the establishment of the School Excellence Fund (Digital & STEM), to encourage collaboration between schools operating in clusters on innovative projects demonstrating the use of digital technologies in teaching and learning. This programme will conclude in 2022 and an evaluation will be published, which will inform how best to support innovative and collaborative practice among schools going forward and how effective practice and the learning from this initiative can be disseminated to all schools.

In 2021, the Department launched a two-year action research project aimed at supporting small rural schools to encourage small schools to cluster together in local groups, enabling them to collaborate and identify common challenges and trial innovative solutions. This project was developed by a working group of school management bodies and teachers' unions with the Department of Education, as part of the

[74] https://www.pdsttechnologyineducation.ie/en/Good-Practice/Videos/
[75] (OECD, 2016, pp. 13–15). https://www.oecd-ilibrary.org/education/innovating-education-and-educating-for-innovation_9789264265097-en

programme of work of the Primary Education Forum (PEF). The Department will provide the necessary supports and advice to any of the projects considering undertaking work in the digital technology area, including technical support provision, through that mechanism during the implementation of the Digital Strategy. Any findings from this will be disseminated to the wider school system.

3.7. Emerging Trends

There are several key areas which are relevant to the effective use of digital technologies in our schools which require further consideration and many of which arose in the consultation process and in the Baseline Report.

Some of these have already been identified as priorities both within the Department and its support services as well as by other Departments and Government as a whole. While specific projects and pilots are underway in certain areas, some will also require additional research and this will be addressed in the Implementation Plan.

All of the findings will in turn inform the development of appropriate and relevant guidelines and supports for the school system, so that they are equipped to understand and interpret their potential impacts.

> "The evolution of digital technologies and ubiquitous access to the internet has radically changed the way information and news are produced, consumed and communicated."

> Disinformation and "fake news" is a broad societal issue recognized across all jurisdictions. Findings from PISA 2018 show "that when students undertook literacy tasks which required them to understand implicit cues pertaining to the content or source of the information, an average of just 9% of 15 year old students in OECD countries were able to successfully distinguish facts from opinions".

- **Disinformation**
  In 2021 the EU Commission established an Expert Group on Tackling Disinformation and Promoting Digital Literacy through Education and Training. This group will "assist the Commission in the preparation of comprehensive guidelines for teachers and educators on tackling disinformation and promoting digital literacy through education and training."[76] The outputs from this group and other relevant research will inform the further development of appropriate resources for school leaders and teacher professional learning to support young people in developing the critical skills necessary to negotiate the online world and identify "fake news".

- **Big data**
  Companies that provide services online, and in particular social media services, are collecting valuable data about the user. As noted in an article on the Digital Age of Consent on Webwise, user data gathered includes: where you are, who you are with, what you search for, what articles you read, and what you buy[77]. Harvesting these data

[76] https://ec.europa.eu/transparency/expert-groups-register/screen/expert-groups/consult?lang=en&groupID=3781
[77] https://www.webwise.ie/parents/gdpr-digital-age-consent/

for all users creates big data, which when analysed using automated tools becomes a valuable commodity for marketing in particular. In navigating the online world, awareness of what is being agreed to in providing personal information is important and a key component of digital literacy at an individual level.

If using services such as cloud-based services, which may involve third party access to their data, it is important that schools put in place appropriate Data Processing and Sharing Agreements, in line with school policies and parental consent. Comprehensive advice on this is available through the Department supported online portal for data protection information.[78]

- **Artificial Intelligence (AI)**
  AI as a concept has become inescapable within the everyday lives of teachers and learners, yet the merits and potential of AI within the field of education remains somewhat under-researched. As referenced earlier in this Pillar, Ireland's first national AI strategy 'AI-Here for Good' sets out a roadmap to ensure that Ireland has a future-oriented workforce and population with the skills to drive the development, deployment and use of AI to increase productivity and benefit society. The embedding of digital and technical skills in teaching and learning at school level will help to address this deliverable.

  However as highlighted in the AI Strategy, it is important that teachers and school leaders understand the strengths and limitations of AI as part of their teaching methods – taking advantage of how AI can augment learning, but also addressing the ethical considerations and risks involved. AI-based educational tools may bring benefits such as the ability to provide customised learning and personalised feedback, as well as specialised products that can assist non-traditional learners and children with diverse needs. As policy around the use of AI in education is developed, it is important that children are given the opportunity to build familiarity and ease with AI solutions from an early age.

  The EU DEAP integrated specific actions for the improvement of AI related skills into the larger context of promoting digital skills. Furthermore, at EU Level, a review of the DigComp Framework is underway, which will also include consideration of big data/AI as key knowledge and skills for the updated Framework, due in 2022[79]. An expert group to assist in the development of ethical guidelines in the field of AI and data in education and training has also been established.[80]

  The outcome of these EU initiatives, and the participation of teacher support services in European level AI pilot projects such as AI4T (Artificial Intelligence for Teachers Erasmus+ Project) will provide clarity regarding the application of AI and big data in education and will result in the dissemination of high-quality resources developed amongst European partners, which will subsequently be applied where appropriate within the Irish context.

- **European Green Agenda.**
  The EU DEAP underscores the importance of digital technologies as powerful enablers for the green transition whilst, at the same time, facilitating a move towards sustainable behaviour in both the development and use of digital products. There is a focus on the green and digital transition both nationally and at European level with a call under the European Education Area[81] for education and

[78] http://www.dataprotectionschools.com/en/Data-Protection-Guidelines/Third-Party-Service-Agreements/
[79] https://ec.europa.eu/jrc/en/digcomp
[80] (https://ec.europa.eu/education/news/first-meeting-expert-group-on-artificial-intelligence-and-data-in-education-and-training_en
[81] https://education.ec.europa.eu/focus-topics/improving-quality-equity/key-competences-lifelong-learning#:~:text=The%20Council%20Recommendation%20provides%20a%20common%20European%20reference,approaches%2C%20assessment%20methods%20and%20support%20for%20educational%20staff.

training policies to be geared towards inclusive green and digital transitions for future resilience and prosperity.

Digital technologies can enhance learning and sustainability when used effectively. The proposal for Council Recommendation on learning for environmental sustainability[82] recommends that teachers be supported to use both traditional and new tools and materials to teach environmental sustainability in a range of indoor and outdoor, and digital and non-digital, settings. Technology also has an environmental impact, which learners need to be aware of. Applying innovative methods alongside more traditional approaches can further promote learning for environmental sustainability. This can include harnessing the potential of digital technologies.

Overall the role of digital technologies in supporting learning for sustainability is currently underexplored and there is a clear call at EU level for further research and sharing of good practice in this field.

Schools as public sector bodies have particular obligations to implement energy efficiency measures and green procurement, in the context of the European Green Deal and other relevant national policies, and how to support this is explored in Pillar 2 in this Strategy.

- **Gender gap in digital skills**.
  The fact that there is an under representation of women in technology sector jobs is evident and was raised in the consultation process. The STEM Education Policy Statement and associated implementation plans contain specific measures to address the gender gap in the uptake of STEM subjects, and this Strategy, through its Implementation Plan will reinforce and complement existing and future actions in this important area. Gender Balance in STEM recommendations,[83] as published in March 2022, will ensure STEM education in Ireland is improving gender balance, equity and inclusion effectively for children and young people.

[82] https://education.ec.europa.eu/focus-topics/green/education-for-environmental-sustainability
[83] https://www.gov.ie/en/policy-information/4d40d5-stem-education-policy/#gender-balance-in-stem

- **Coding and Computational Thinking:**
  Coding is now a key aspect of using digital technologes in many schools, with support from the NCCA's Coding in Primary Schools initiative, the Short Course in Coding for junior cycle and Computer Science at senior cycle. Ongoing innovation in the area of coding and computational thinking at European level will also be researched, the learning from which will be disseminated to schools in Ireland via the support services. Ireland's performance in coding will also be promoted on a European scale through, for example, effective engagement with annual EU Code Week activities.

- **Augmented Reality (AR) and Virtual Reality (VR)**
  AR and VR resources offer teachers the possibility of extending learning experiences beyond the walls of the classroom to provide an immersive learning experience for their learners. Building on the success of initial projects in this area, research will continue in order to develop accessible and practical supports for teachers (e.g. webinars, summer courses, etc.).

- **Digital technologies supporting creativity**
  Digital technology is being used increasingly to support creativity across various elements of school life. One example is the FÍS Project[84] which encourages primary schools to engage in cross-curricular filmmaking and enter their short film into an annual awards ceremony. This project is supported by the PDST TiE team and the Dún Laoghaire Institute of Art, Design and Technology. PDST TiE also design and deliver PDST filmmaking and animation-making summer courses as well as providing digital storytelling webinars.

The Creative Ireland Plan 2023-2027, particularly the Creative Youth Pillar, will support the ongoing design, development and use of digital technologies, including Creative Technology for children, young people and teachers in order to enhance creativity and creative engagement as a core element of the education system. Enhanced access for hard to reach children and young people to existing and new creative digital technologies will continue to support the timely design and delivery of a curriculum that encourages and supports participation, teaching and learning in creativity across the broad spectrum of the education system.

3.8. Data Protection and General Data Protection Regulation (GDPR) for Schools

Concerns were expressed during the consultation, in particular by school leaders and teachers, as to the increased obligations under data protection and GDPR that arise when using digital technologies in the school environment. This relates both to internal and external usage as well as in relation to the rules around the use of copyright and copyright infringement.

The Department's School Governance area have supported the school management bodies in the provision of bespoke advice, which is available online for schools on all relevant aspects of data protection legislation, to support them to comply with all requirements.[85]

In providing resources and information to schools on the use of digital technologies in teaching, learning and assessment, clear linkages to these resources will be included. As necessary, there will be engagement with the management bodies on the content and accessibility of these resources during the implementation of the Strategy.

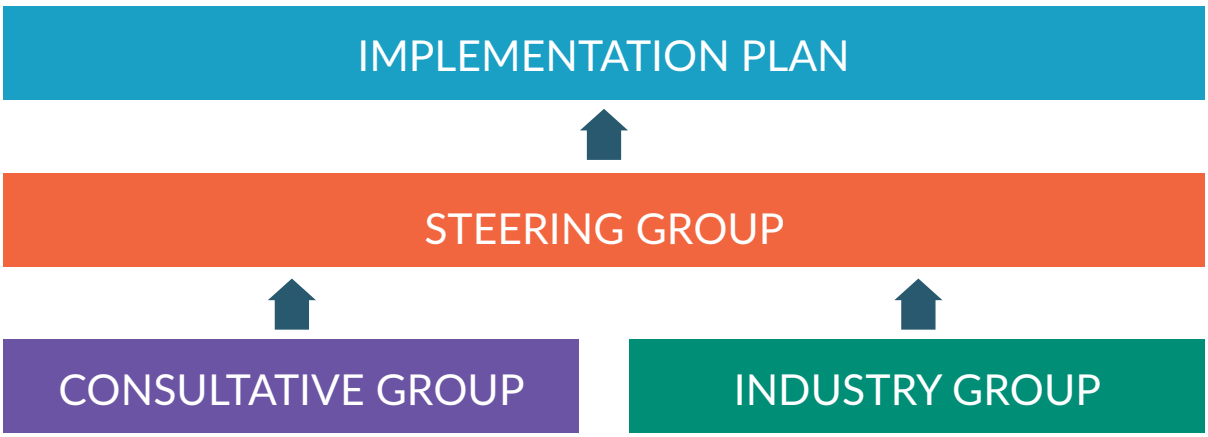
[84] www.fisfilmproject.ie
[85] www.dataprotectionschools.com and www.gdpr4schools.ie,

Oversight and Measurement of the implementation of the Digital Strategy for Schools

The implementation of this Strategy will be underpinned by the continued development of oversight mechanisms to assess and measure outcomes and impacts at a system level, as well as supports to measure progress at school level through school self-evaluation processes and for teachers in their own self-reflective practice. The enhanced learner experience should also become more tangible during the implementation of this Strategy, and the Department will consider how to capture this experience and the student voice more broadly going forward.

It is intended to establish oversight and consultation structures to assist in the overall implementation of this Strategy in addition to establishing measurement mechanisms focusing on its impact.

Strategy Governance and Oversight Implementation Structures



A Steering Group will be established to oversee and provide guidance on the implementation of this Strategy. This group will include representation from relevant internal policy areas of the Department with a role in delivering on actions under the Strategy as well as representatives from the PDST TiE, the Inspectorate and the NCCA.

The valuable input obtained throughout the consultation process to inform this Strategy illustrates the importance of such engagement. A number of contributions to the consultation also highlighted the benefits of ongoing interaction. To facilitate this continued input and engagement from the wider sector and stakeholders, a Consultative Group will also be established comprising key stakeholders including parent/guardian and learner representatives, and education partners, many of whom were on the Consultative Group as part of the development of this Strategy.

The potential for industry to support digital transformation and capacity building in schools, and their willingness to engage on that basis with the Department and with schools has already been referenced and in order to bring a stronger, more coherent focus on this, an Industry Group will also be constituted to harness that input.

Should additional sub-groups be required on particular topics in response to emerging needs this will be provided for as directed by the Steering Group.

Review and Measurement

Over the lifetime of the Strategy, to ensure that it continues to effectively support the aim of embedding the use of digital technologies in teaching, learning and assessment, it is proposed to undertake an interim review mid-way during the period covered. As detailed in the introduction, the first Implementation Plan will run from 2022-2024 and towards the end of this phase a midterm review will be carried out to provide an evidence informed basis for the next Implementation Plan from 2025-2027.

This review will be informed by all available relevant sources and may also comprise surveys of schools and other stakeholders as well as other forms of data gathering to assess the efficiency and effectiveness of its implementation. To aid this, evaluation planning will take place as part of the development of the Implementation Plan so that data needs are identified early.

International Studies to support measurement

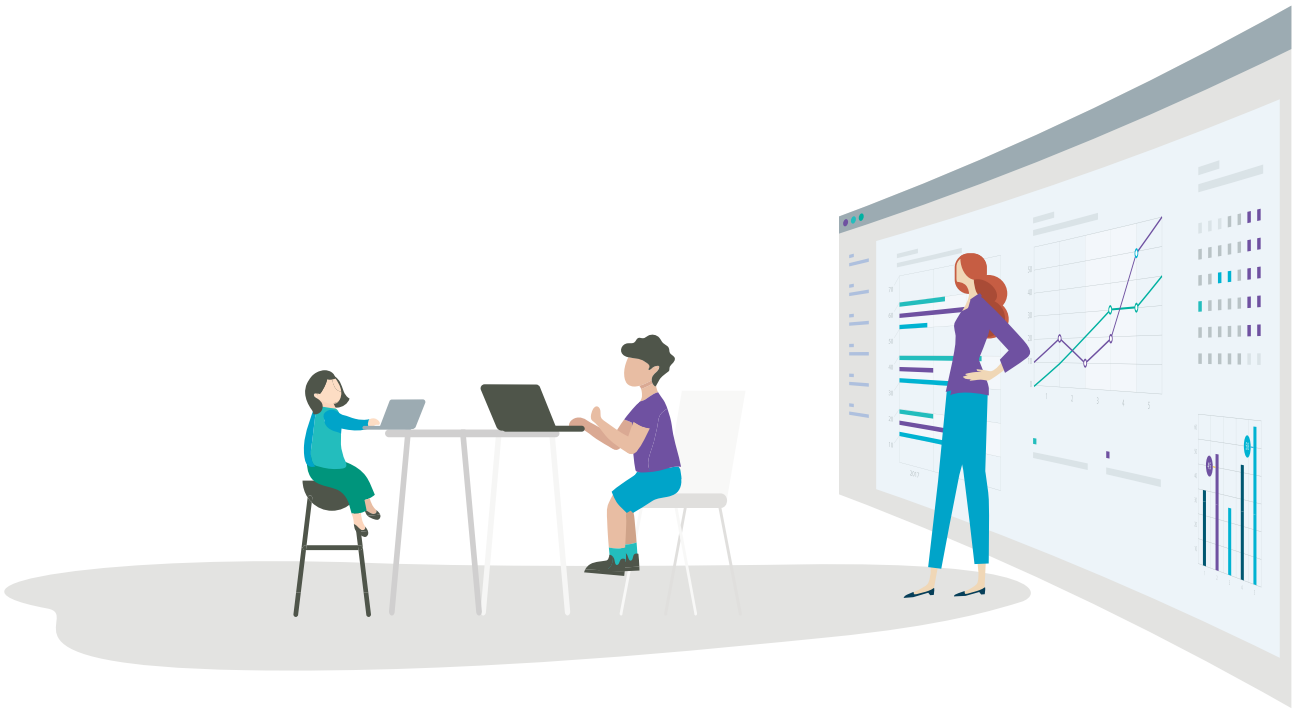
Ireland participates in some large scale international assessments including PISA (Programme for International Student Assessment)[86], PIRLs (Progress in International Reading Literacy Study) and TIMMs (Trends in International Mathematics and Science Study)[87]. Both PISA and PIRLS include some indicators on ICT/digital literacy. A new PISA Digital ICT Framework[88] has been developed and will form part of the preparation of the digital assessment elements going forward.

While these indicators give useful data on progress in terms of digital literacy a more focussed and specific survey is the ICILS - *International Computer and Information Literacy Study*[89] first undertaken in 2013, and now taking place every five years. The distinct advantage of the assessment framework for the ICILS study is that it directly evaluates learners' digital skills. The Commission makes funding, through Erasmus+, available to member states participating in the study. Ireland does not currently participate in this study.

The EU Council passed a Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030)[90]. This contains a target in relation to the proportion of learners in the eighth grade (approximately 14/15 year olds, equivalent to 2nd year) who are underachieving with regard to digital skills. This target is an EU-level target for achievement by 2030. The data for this target will be drawn from the ICILS study. In EU reporting (for example in the Education and Training Monitor and in other publications), the Commission will present the overall EU level progress and will compare it to other member states. The final reporting on this target will be based on data from the 2028 study.

Notwithstanding this EU target, Ireland's participation in the ICILS study would also provide objective data on Irish learners' digital skills and capabilities that would be useful in the development of our own evidence informed policy context. Establishing indicators for future progress would be a positive outcome, as would benchmarking against international comparators. In the context of the capacity building that has been undertaken through the previous Strategy and to be progressed under this Strategy, it would seem timely for Ireland to participate in ICILS in 2028. Consideration for participation will be undertaken during the implementation of this Strategy in consultation with relevant areas of the Department.

86 https://www.oecd.org/pisa/
87 https://timssandpirls.bc.edu/timss-landing.html
88 https://www.oecd.org/pisa/sitedocument/PISA-2021-ICT-framework.pdf
89 https://nces.ed.gov/surveys/icils/
90 Council Resolution on a strategic framework for European cooperation in education and training towards the European Education Area and beyond (2021-2030) 2021/C 66/01



Department and School Level Measurement and Evaluation

During the first Implementation Plan of this Strategy, evaluation reports on the Digital Learning Framework and the School Excellence Fund Digital and STEM will be finalised and the findings of those reports will help inform the midterm review. The outcome of the review will provide an evidence base to inform any new actions required to be implemented in the second Implementation Plan.

Under the previous Digital Strategy, foundational supports were provided to allow schools to plan for the embedding of digital technologies in teaching, learning and assessment. The implementation of this Strategy will see further progression from planning to individual practice and the realisation of impacts on teaching, learning and assessment. To ascertain the effectiveness and impact of this Strategy and its various supports, additional methods of measuring its impact and observing outcomes will be required. These will be developed by the Department in conjunction with the inspectorate over the implementation period.

School self-evaluation and digital learning planning should also be used by schools to establish and measure their own progress. Such reviews should include participation by school leaders, teachers, learners and parents. The DLF is a planning tool that can also assist schools in this process, while the SELFIE tool (referred to under Pillar 1) can support teachers and schools in assessing their levels of competence. Specific information will be developed as required and disseminated to schools to support this process. Schools can determine how best to apply this information depending on their own context and digital learning plan.

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Acronyms, Abbreviations and Initialisms

AI	Artificial Intelligence
AR	Augmented Reality
AUP	Acceptable Use Policy
BYOD	“bring your own device”
CPD	Continuous Professional Development
DFHERIS	Department of Further and Higher Education, Research, Innovation and Skills
DLF	Digital Learning Framework
DLP	Digital Learning Plan
EPA	Environmental Protection Agency
EPS	Education Procurement Service
ERC	Educational Research Centre
ETBI	Education and Training Boards Ireland
EU DEAP	EU Digital Education Action Plan
Gbps	Giga-bit per second (unit for broadband speed)
GPP	Green Public Procurement
HEAnet	National education and research network of Ireland
ICILS	International Computer and Information Literacy Study
ITE	Initial Teacher Education
Mbp	Mega-bit per second (unit for broadband speed)
NBP	National Broadband Plan Intervention Area
NCCA	National Council for Curriculum and Assessment
NCSE	National Council for Special Education
NDA	National Disability Authority
NIPT	National Induction Programme for Teachers
OECD	Organisation for Economic Co-operation and Development
OGP	Office of Government Procurement
PCK	Pedagogical content knowledge
PDST	Professional Development Service for Teachers

PDST TiE	Professional Development Service for Teachers - Technology in Education Team
PEF	Primary Education Forum
PIRLs	Progress in International Reading Literacy Study
PISA	Programme for International Student Assessment
SEAI	Sustainable Energy Authority of Ireland
SELFIE	Self-reflection on Effective Learning by Fostering the Use of Innovation Educational Technologies
SEN	Special Educational Needs
SII	SaferInternetIE
SPHE	Social Personal and Health Education
SPU	Schools Procurement Unit
SSE	School Self-Evaluation
STEM	Science, technology, engineering and maths
TCK	Technological content knowledge
TIMMs	Trends in International Mathematics and Science Study
TPACK	Technological, pedagogical and content knowledge
TPK	Technological pedagogical knowledge
TPL	Teacher Professional Learning
UDL	Universal Design for Learning
VR	Virtual Reality
XK	Contextual Knowledge

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