INTO Submission to the Department of Education

Consultation on a revised Digital Strategy for Schools

Bealtaine 2021

Introduction

Rapid digitalisation over the past decade has served to transform many aspects of daily living. This digital revolution, driven by innovation and technological evolution, is reshaping society, the labour market, and the future of work. At primary school level, our curriculum must reflect the changes in society and strive to equip our younger generation with required ICT skills to engage confidently, responsibly and safety in an ever-changing, digitised world. It is timely that National Digital Strategy is being reviewed at this juncture, taking into account the exceptional circumstances that schools experienced over the course of the 2020-2021 academic year due to the Covid-19 pandemic. The educational, economic, and social context in which the digital strategy for schools was published in 2015 was vastly different from the current 'living with Covid-19' context. Technology has been utilised at an unprecedented scale in education to allow teaching and learning continue during extended periods of school closure, accelerating the change in the digital space. It is important that lessons learned from the Covid-19 crisis and schools' experience of engaging with digital technology over the last fourteen months are used to inform future planning and policy.

The INTO welcomes the opportunity to contribute to this important consultation on the development of a new Digital Strategy - one of the commitments within the Programme for Government which asserts that all of us should be ambitious for education. This ambition and determination must be harnessed in the current review of the primary curriculum which must strive to equip pupils with the necessary skills to navigate a digital world and prepare them for living and working in a modern society. Elements such as critical thinking, problem-solving and communication must be central to a revised primary curriculum. We must strive for high-quality, inclusive, and accessible digital education in Ireland, in line with European Digital Education Action Plan 2021-2027. To realise this ambition in the programme of government a Digital Education Strategy will require investment in infrastructure, intensive professional development and ongoing ICT support for schools. Apart from being an engine of sustainable economic growth, education is at the heart of a more cohesive, more equal, and more successful society.
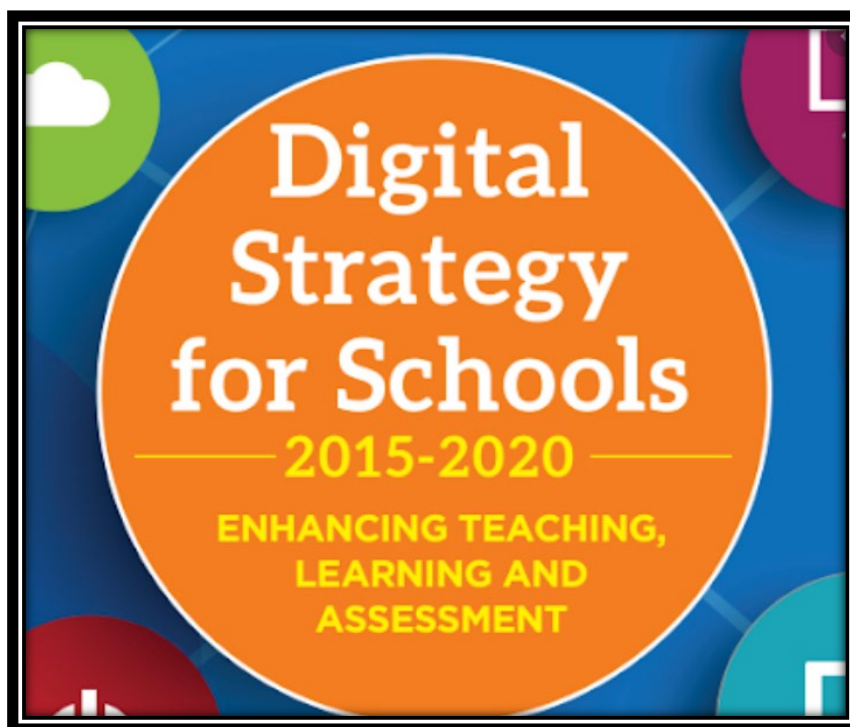
Question 1:

Please outline your observations and comments on how the existing Digital Strategy for Schools 2015-2020 has supported the integration of digital technologies into teaching, learning and assessment practices in schools.

The Digital Strategy for Schools outlined a government action plan for the integration of ICT into teaching, learning and assessment practices, developed around four interdependent themes:

- Teaching, Learning and Assessment using ICT,
- Teacher Professional Learning,
- Leadership, Research and Policy; and
- ICT Infrastructure.

Some of the ways in which the existing Digital Strategy for Schools 2015-2020 has supported the integration of digital technologies into teaching, learning and assessment practices in schools are outlined below.

Tools to enhance teaching and learning:

The Digital Strategy for Schools (2015-2020) demonstrated an awareness of the skills that would be required in the future for educators and was notable for its move away from a "technocentric" (Selwyn, 2019) view of technology in education, to a focus on the pedagogies associated with effective technology integration.

As the learning environment reflects changes in society, tools for teaching evolve, as do pedagogies and methodologies. The Digital Strategy for Schools (2015-2020) had a core pedagogical focus. Many classrooms have become multi-modal with various elements of ICT woven into daily classroom activity and a key tool in teachers' toolkit. Videos and audio-visual presentations can enhance a lesson and certain 'apps' and 'platforms' are useful in teaching specific subjects. Rather than relying on posters for lessons and a 'chalk and talk' approach to teaching and learning, technology is now being used widely to create and share resources.

The way in which teachers and students use technology for teaching, learning and assessment has complemented traditional methods and allows teachers to provide exciting opportunities for children to enhance their learning. Students have moved from consumers of ICT content to creators of it. An overwhelming majority of respondents to an INTO survey in 2017 (85%) indicated an overall agreement with the statement that students are more motivated when using computing resources in the classroom.

Assessment

Technology also has the power to transform assessment practices in schools with many teachers shifting the balance from Assessment of Learning to Assessment for Learning. Tools such as *Kahoot!* And *Socrative* provide teachers with a platform to design and share quizzes that can be reused over time. The creation of e-portfolios though the use of an app such as Seesaw (which has grown in popularity owing to the prevalence of its use during the Covid-19 crisis) allows students to record images/audio/video of their work as well as saving links to work or projects they may have created online. Each student can develop their own e-portfolio that is stored online and can grow with them as they progress through classes in the school. This portfolio can also be added to the suite of material that teachers can share with parents/guardians to provide an insight into their child's learning.

Communication

Schools have embraced technology using it for communication and administration (e.g., Aladdin). The vast majority of participants to an INTO survey in 2017 indicated that their school used "Text-a-parent", a school website and school administration software. Smaller numbers were using a school blog and a class email to communicate. Respondents reported that their school used a variety of social media platforms including Facebook, Twitter, and Instagram. Engagement with these mechanisms has increased in recent years and can provide a positive forum via which schools can share news stories, celebrate achievement and highlights partnerships with local groups and community. Many initiatives that schools are involved in (such as Active School Flag) require a dedicated section on a school website to host material that charts progress in these projects.

Technology has also revolutionised how students communicate with each other as well as their teacher. Various platforms specifically designed for the education setting (such as Class Dojo) facilitate effective and safe interaction between pupils and their teachers both within and outside the classroom environment. They allow teachers to assign and grade tasks, share resources and links to useful websites. Teachers can design activities such as quizzes and polls that are relevant to students' learning. These virtual environments allow students to work at their own pace and enable them to complete work over a number of days or weeks/within an agreed timeframe if required. Traditionally collaborative learning happened in a group around a desk in the classroom but now there are endless possibilities beyond the classroom walls. Children can work together on projects both at school and at home and can also collaborate with students from other schools in Ireland and around the work.

School Planning

Many schools have adapted their planning practice to capitalise on the benefit of using cloud-based platforms (such as Microsoft Teams). This online facility was instrumental in facilitating collaboration and communication between staff members during periods of school closures over the course of the last fourteen months. School leaders and teachers could meet online and review documents where in-person meetings were not permitted.

In a longer-term context, cloud-based programmes can be incorporated into school planning by allowing teachers to store files, lesson plans and reports and collaborate on work. That substitute teachers can access teachers' plans where they are covering an unexpected absence is also effective in ensuring continuity of learning for pupils. The benefit of using such online facilities can already be seen in many schools and as teachers' confidence in digital technology strengthens, so too will the potential to transform how schools are run and how teachers plan and interact with each other. INTO are currently undertaking a comprehensive research on the topic of workload and one of the factors identified by school principals as contributing to workload is the proliferation of paperwork. Using online systems, streamlining documents and/or templates and ensuring that correspondence to school leaders comes from a verified source may help to tackle this element of teacher workload. The positive engagement with cloud-based platforms for planning has been driven by the investment by the Department of Education in hardware for schools and by the requirements of remote learning due to Covid 19, however this further funding for schools is necessary to enable the use of technology for planning and administration be a fundamental feature in all school settings.

Science, Technology, Engineering and Mathematics (STEM)

The STEM Report 2020 noted that where high-quality STEM teaching was observed it was often characterised by an openness to multiple solutions, the incorporation of digital tools to support

teaching and learning and the use of enquiry-based methods and engagement with an engineering design process.

It is critical for learners at all levels (early learning and care, primary and post-primary) to have opportunities to make tangible links with real-life problems in order to advance their STEM learning in a meaningful way.

At system level considerable work in STEM education is underway in areas such as curriculum and assessment, teacher professional development and the embedding of digital technologies in all classroom activities. The STEM Education Policy Statement commits to ensuring that "teachers and early learning care practitioners will have engaged with professional learning opportunities and will embed STEM into their teaching practice to include the use of digital technologies". As part of the Inspectorate's review of the implementation of the Digital Learning Framework it was reported that this use of technology enhanced learners' experiences overall in 63% of those lessons.

Assistive Technology

The use of assistive technology has contributed to a transformation of the learning experiences of children with special educational needs (SEN). Equipment that can be used to improve the functional capability of a student with special educational needs and is of direct educational benefit to them. Funding is provided to schools by the Department of Education towards the purchase of equipment for pupils with physical or communicative needs who have been assessed as having a special educational need that requires specialist equipment in order to access the curriculum. This pupil-specific scheme reflected the child-centred nature of the curriculum and seeks to allow pupils with SEN an alternative way to access teaching and learning. INTO believes that in an increasingly digitised world, enhanced access to assistive technology for pupils with special educational needs is paramount to support inclusion.

Digital Schools of Distinction

An exciting and innovative method against which the future development of ICTs in the primary school can be assessed can be found in the Digital Schools of Distinction (DSoD) programme. The DSoD is a flagship programme which aims to promote, recognise, and encourage excellence in the use of technology in primary schools. On successful completion of a structured 3 step programme, schools receive a nationally recognised Digital School of Distinction Award, accredited by the Department of Education and Skills. Digital Schools of Distinction also receive free hardware and software and ongoing practical support and resources as part of the community of digital schools in Ireland. This nationally accredited DSoD Award (supported by the Department of Education and INTO among others) is unique in Europe. Consisting of Registration, Self-Evaluation, and Validation processes, it enables, supports and helps schools in developing into Digital Schools, recognising and validating the knowledge, skills and competences of the teachers.

Question 2:

From your understanding of the current Digital Strategy for Schools 2015-2020 what challenges did schools face in the integration of digital technologies into teaching, learning and assessment practices?

Technology available to primary school teachers in their classrooms varies in terms of quantity and quality. The Digital Strategy (2015 – 2020) acknowledged the importance of access to technology for all teachers and provided grants for the purchase of necessary equipment. The need to improve broadband connectivity for primary schools was also identified as one of the key objectives (p. 41). However, discrepancies still exist and the capacity of schools to create an appropriate rich digitally learning environment is impeded by the quality and availability of resources.

Connectivity, resources and infrastructure

Quality of connectivity and speed of broadband varies across schools. Whilst connectivity has improved significantly in recent years, the level of inconsistency that remains leads to inequity in the use of digital technology with teachers experiencing delays in uploading content and sharing material with pupils. This can also impact on classroom management and present additional challenges where teachers are already under time pressure. Reliability in this regard would instil more confidence in teachers to use technology in the classroom and could elicit more engagement from pupils.

Despite the vision and goals of Digital Strategy for Schools (2015-2020) there was an absence of suitable hardware, software, and infrastructure to support digital learning environments. Capitation grants to schools are insufficient to cover operational costs of schools and in many cases, schools are forced to engage in fundraising events to bridge the gap between income and essential expenditure to allow the purchase of devices for pupils.

A survey of INTO members in October 2020 revealed that almost 90% of respondents agreed that the State should ensure that all areas of Ireland have high quality broadband and 81% believe that all teachers should be provided with a device to support pupils' learning remotely.

Digital divide

The Digital Strategy for Schools (2015 – 2020) focused on the school as the singular site of learning, aspiring to improved connectivity to all primary schools during the lifetime of the strategy so that schools have improved access to the internet and wi-fi access would provide new opportunities to increase access to online resources for learning throughout a school (DES 2015, p.42). However, the notion of school and learning solely focused and conducted in a physical classroom place has been severely disrupted by the pandemic. Teachers' and pupils' experiences of remote learning has illuminated the challenge of equity and, as noted by Fullan and Quinn (2020), not every individual or system had the same experience of this abrupt change.

Despite the prevalence of digital technology in our world, the reality (as emphasised through the pandemic) is that there is an inequity that exists within our society and where online learning is used, there are cohorts of children who will lose out. Even before the crisis, evidence shows that almost one third of the world's young people were already digitally excluded (UNESCO, 2020). School closures served to exacerbate this digital divide, and those who were already disadvantaged were further behind as is borne out by the findings of research carried out by Maynooth University on the impact of COVID-19 and school closures at primary level.

Class size

Ireland's large class sizes – the highest in Europe - present a barrier to the integration of digital technology at primary school level. The current child-centred curriculum promotes the active involvement of children in a learning process that should be both imaginative and stimulating. While teachers support the aspirations, the ideals and the principles of the Primary School Curriculum 1999, it is impossible to implement it effectively and fully in the large classes that are the norm in so many schools today. Class groups of thirty or more are not conducive to practical modern teaching methods using various digital devices.

Posts of Responsibility

The moratorium on promotion resulted in middle management structures in many schools being largely dismantled and, in some schools, this meant that there was no longer an ICT coordinator to lead the integration of modern technologies in teaching and learning at school. Since 2018, there has been *some* flexibility in this regard. Clear leadership by schools in terms of how they can provide an enriched learning experience, be that through exclusive or targeted use of technology across the whole school, tailored to suit the needs of their students and teachers. Such leadership, facilitated through middle-management roles, would promote open and healthy dialogue to create a policy which could be reflected upon cyclically and adjusted according to the needs of the school community. INTO emphasise the need to ensure that all teachers receive professional development in the area of ICT across the course of their career to meet the evolution of digital technology and the emergence of new strategies. However, it is important to stress that any teacher who assumes a specific role as 'ICT Co-ordinator' within their school completes appropriate specific CPD in digital technology.

ICT Maintenance

Another factor that inhibits the use of technology in a teaching and learning environment is lack of access to technical support. It is apparent that despite having technology in a classroom, there are shortcomings in maintenance of that technology. A lack of technical support had been noted in the Digital Strategy for Schools (2015) where "the challenge of attaining reliable and timely technical support" (p. 43) continues to be a major issue for schools. INTO would welcome a centralised high-quality service for schools to provide consistent, reliable support in the maintenance of ICT equipment.

This may take the form of clustered/regional support for schools within a particular catchment area and would greatly alleviate the workload on school leaders as well as facilitating timely support for teachers, reducing the waiting time for repairs thus minimising disruption to teaching and learning. INTO members teaching in Northern Ireland shared their positive experience of a centralised system. Among the benefits identified are the management of internet connectivity, installation and updating of new programmes, enforcing security limits to deny access to inappropriate online material as well as the upkeep of equipment (and replacement where required). Assigning responsibility for technical issues and maintenance of devices to a company (approved by the Department of Education) offers reassurance to school leaders as such work demands a specific skillset. Those who specialise in Information and Communications Technology can also provide invaluable support in the storage of data and are best placed to advise teachers and principals on how best to back up their files. As digital technology advances and becomes sophisticated, support from qualified ICT staff is important to protect teachers, school leaders, pupils and the entire school community.

Cyber-bulling

Burns and Gottschalk (OECD, 2019) noted that while access to digital technologies was useful, such access presented many "pressing challenges", including cyber-bullying, internet addiction, exposure to harmful content and excessive use concerns, in a digital age. The increased use of social media platforms in recent years requires teachers to exercise caution for pupils and teachers alike. Privacy issues can arise for teachers and inappropriate comments may be posted online. School Management have a duty of care to teachers to ensure that they are not exposed online, and this concern was articulated by some principals who engaged with INTO's survey of members in 2017.

Pupils also need to be informed of the perils of internet usage and educated on the precautions to be taken to ensure online safety. Many teachers address cyber-safety through SPHE with 'Internet Safety Week' one of the key events in the school calendar where the topic comes under sharp focus. Social media interactions of a bullying nature can present a challenge to teachers who are often expected to deal with the fallout. In order for pupils to engage effectively and safely with technology, to develop proficiency in digital literacy, they must be taught to be responsible digital citizens and made aware of measures to ensure better cyber safety.

The issue of safe online activity was a concern raised by many schools during the initial period of school closure in spring 2020. Many teachers and school leaders who were engaging with educational platforms and online programmes for the first time felt that there was a lack of guidance on appropriate use of such systems, and it was challenging to communicate a code of conduct for online activity to pupils and parents/guardians in the absence of clear, unambiguous policies. Official templates, approved by the Department of Education, for Acceptable Usage Policies and compliance with GDPR, for example, would be beneficial and would offer reassurance to principals and teachers. Although most schools managed to maintain contact with the majority of pupils and continued to provide learning opportunities within agreed parameters, not all experiences were entirely positive. Certain schools reported problematic issues including incidents where children recorded live online class sessions and shared the recording on social media or meeting links/invites were circulated to friends/others from outside the school who then had access to online sessions. In order for digital technology to be embedded within a revised curriculum and to allow goals of a new Digital Education Strategy be realised, INTO highlight that cyber-safety is a critical component of digital literacy and so must be taught to all children from an early age, with appropriate professional development for teachers. However, it is important to acknowledge that whilst online safety will be an essential element of a revised primary curriculum that promotes digital learning, parents must be provided with information and resources to foster and support correct internet usage in the home setting. Schools alone cannot address the issue of cyber-safety and this message should be communicated clearly to parents/guardians and entire communities through public awareness campaigns.

Inclusion/Assistive Technology

The potential of technology to help promote inclusion within the school setting should be maximised and a revised Digital Strategy should seek to ensure that appropriate supports are offered to schools in line with the needs of their pupils. Funding for digital devices, and assistive technology equipment for children with special educational needs should be available to schools where it is identified that such technology would allow a pupil or pupils to engage in classroom-based activities which are otherwise not accessible to them. Some schools report difficulty in attaining grants/funding for assistive technology in the absence of reports from an occupational therapist or other professional assessment. Teachers are best placed to understand the ability of their pupils and through a continuum of assessment will identify situations where technology may be beneficial to allow the child to progress. Therefore, INTO would welcome a clear application process for schools where the professional judgement of teachers and principals is recognised and forms part of any decision to make assistive technology available to certain pupils based on their individual needs.

Question 3

Comments and observations on the key areas and priorities that should be addressed in the development of the new Digital Strategy for Schools.

If the goals of a reviewed Digital Technology Framework are to be realised to ensure our school-going children become digitally literate, investment in ICT is imperative. Initiatives to support increased teacher collaboration needs to be encouraged and systemised, encompassing existing pedagogical practices and new teaching and learning methods made possible by the use of ICT.

Infrastructure, connectivity, and resources

Appropriate investment in connectivity, equipment, and school capacity in terms of technical support should ensure that everybody has access to digital education. Quality, inclusive education, and lifelong learning underpin the first principle of the European Pillar of Social Rights. The Department of Education must ensure that the introduction and implementation of a new digital framework is supported by adequate investment and availability of requisite resources so that all pupils have access to a rich digital learning environment. Connectivity in schools is essential with consistency across all geographical areas on the island of Ireland. The provision of digital equipment for all teachers and pupils is important to enable access to e-learning applications and platforms which have proven invaluable during periods of school closure and are now considered important elements of future education, enhancing children's digital literacy skills. Lack of access to devices and technology is a barrier to digital learning at primary school level, and the events of recent months have served to underscore the inconsistencies and inadequacies in the availability of resources for children. In an INTO survey of members in 2020, over one third of schools (36%) provided devices to pupils for use throughout the closure. There was an acknowledgment from both principals and teachers who participated in these surveys that access to devices and technology was a barrier to pupil engagement.

CPD for teachers – digitally competent and confident teachers

Investment in teacher education and ongoing professional development is important.

Hammond, Reynolds, and Ingram (2011) drew attention to the factors that influence how and why teachers use ICT and found ICT use was seen as emerging from a mix of factors, namely: "teachers access to ICT; their feelings of self-efficacy when using ICT and their belief that ICT had a positive impact on learning" (p. 191).

All teachers should be digitally competent, and technology should be embedded in all areas of teaching education including initial teacher education. Tondeur et al. (2012) argued that teacher training institutions should be acting as agents of change and are still lacking in this regard. Teacher education programmes needed to integrate technology in a way that was not superficial but was meaningful and the authors suggested that digital learning should permeate teacher education at all levels; but were quite vague as to the specifics of how this would happen. In Ireland, for example, the "Digital Strategy for Schools" (Butler et al., 2015) primary objective was to "ensure that ICT is embedded in the planning, design and delivery of all teacher education courses", and the influence of teacher education on pre-service teachers' technological skills cannot be underestimated.

Irish Primary School Teachers are highly skilled professionals who need the confidence and skills to use technology effectively and creative to engage and motivate their pupils, support the acquisition of digital skills, and ensure that digital tools and the platform used are accessible to all pupils. Teachers should have access to continuous professional development, be empowered to adopt innovative methods, engage in peer learning, and share their experiences. The Professional Development Service for Teachers (PDST) offer high-quality professional development for teachers which schools could opt to engage with. INTO believes that a systemwide, structured approach to continuous professional development should be developed to ensure that upskilling courses are available to all teachers and all schools in an evolving digital landscape. Teachers have exhibited admirable enthusiasm and willingness to engage with new methods of providing learning opportunities and interacting with pupils in recent months. Many teachers enrolled in CPD courses as an emergency response to the Covid-19 and often struggled to access equipment and basic devices that are necessary for teaching using online platforms and digital methodologies. As a revised primary curriculum is developed that encompasses skills required for our twenty-first century society, including digital literacy, the Department of Education must ensure that all primary school teachers are afforded the hardware, software and CPD to allow them to achieve the learning outcomes within a revised Digital Strategy.

A centralised hub supporting the development of policy and practice and monitoring the development of digital education in Europe should be a feature of such an approach to ensure that Irish primary school teachers' digital skillset is progressing in line with European counterparts and our pupils are being equipped with the digital literacy skills that they need.

Inclusion

A reviewed framework should build on cultural and creative diversity.

As mentioned earlier in this submission, assistive technologies are a key element of education for those students with general learning difficulties, accessing and attending educational courses. The concept of digital literacy for those with general learning difficulties is defined as "the creation, communication and interpretation of meaning through multi-modal digital formats, leading to fuller participation" and ensures those with learning difficulties are assured of their own ability to make choices thereby allowing full participation in all aspects of an educational setting. Assistive technology can refer to low technology (laptop stands), medium technology (adapted computer peripherals such as keyboards) and high technology (sophisticated voice activated computer control systems, audio readers and voice recognition tools, NCSE). All of these technological tools have a specific purpose, and are based on a strong pedagogical need, and benefit those with learning difficulties in a positive manner (Valencia, Rusu, QuiÒones, & Jamet, 2019).

Cyber Safety

Safety in the online space is essential. Schools must be equipped with secure platforms and use of online tools should respect privacy and uphold ethical standards. A trusted digital education ecosystem necessitates high-quality content, user-friendly tools, value-adding services, and secure platforms that maintain privacy and uphold ethical standards.

McGarr and McDonagh advocate a strong pedagogical focus to technology integration, they also argue that an "awareness and understanding of cyber-ethics" in any teacher education technology course is imperative, similar to DigCompEdu's (2017) competence in relation to responsible use of technology. Exposure to a wide range of technologies should also be accompanied with explicit examples of how those technologies can be integrated safely and securely in a classroom setting.

The internet has evolved to become so readily accessible and easy to navigate and ensuring safety for users is paramount. It is especially critical for teachers and parents to be well-informed of the potential risks of children's engagement with the internet and ensure their safety. When used appropriately, the cyber world can be an enriching and valuable tool for information, learning, and connection. Along with all these possibilities, there is also the potential for harm, but with the proper protection, it is possible for parents to ensure that their children learn to be safe. The constant launch of new apps and social media sites leave children exposed to new things on a regular basis and as such regular professional development for teachers and information updates to parents / guardians is essential to allow children the opportunities to use appropriate tools safely.

As part of a revised Digital Strategy, the Department of Education should develop a new programme for Online Safety and appropriate behaviour online for children at Primary level, especially relating to the prevalent issue of bullying. The afore-mentioned annual Internet Safety Week campaign promoted by Webwise, Stay Safe resources and other SPHE material deal with the topic of cyber safety but it is not sufficient given children's access to technology from an early age.

Addressing the Digital Divide

The recognition of a possible 'digital divide' (in terms of student access to ICT) towards the end of the 20th century drove many governments, including the Irish government, to address the problem through school-based interventions. In 1998, Ireland began to seriously invest in ICT infrastructure for schools (Marcus-Quinn and McGarr, 2013), followed by large-scale investment in broadband for schools (McCoy et al., 2016). However, in more recent years the digital divide considers more than access to technology and is more focussed on the digital content that learners have access to and how they are using this content (Buckingham and Willet, 2013). Not only does the term 'digital divide' capture the fundamental matter of accessing hardware and online connectivity, but as borne out by the recent periods of remote learning, the new 'digital divide' refers to digital content and how it is being delivered and consumed.

In a revised Digital Strategy, equity of access for all pupils must be a priority. Lessons may be learned from Northern Ireland in this regard where all schools have an allocation of computers and equipment which is based on the number of pupils in the school. Removing this barrier for primary school pupils will help to address inequality within the education system, will promote inclusion and will be a precondition to integrating digital literacy into a restructured primary school curriculum that is designed to meet the needs of a twenty-first century population.

School self-reflection and evaluation

Schools may decide to focus on Digital Learning as part of the School Self-Evaluation (SSE) process to enable a thorough review of their existing policies. The SELFIE (Self-reflection on Effective Learning by Fostering the use of Innovative Educational technologies) tool is an effective mechanism which can support schools in embedding digital technologies into teaching, learning and assessment. SELFIE has a strong basis in research and was developed based on the European Commission framework on promoting digital age learning in educational organisations and anonymously gathers the views of students, teachers, and school leaders on how technology is used in their school. Based on this input, the tool generates a report which provides a snapshot of a school's strengths and weaknesses in their use of technology.

The Department of Education must support schools in their decision-making, perhaps through providing a roadmap showing what successful technology use looks like. Schools must be encouraged to learn from each other's experiences (the successes and the failures) and from their best practice through the facilitation of collaborative professional learning. If the benefits of ICT are to be maximised, the potential of ICT and other developments will require a willingness and enthusiasm to share and learn expertise, insight, and vision within and across school contexts, supporting leaders within schools. Educators should be empowered to evaluate what educational technologies they can use in their school or teaching environments. This can be done by allowing them the time and space to share their experiences using technology with each other, and for national policies to listen to their voice.

Embedding technology across the curriculum

The Draft Primary Curriculum Framework identifies 'Being a digital learner' as one of seven key competencies which seeks to support children to become "curious, creative, confident and critical users of digital technology" (NCCA, 2020, p.8). Being a digital learner fosters children's ability to collaborate and thrive in a world increasingly immersed in technology. Children develop their knowledge, skills, concepts, attitudes, values, and dispositions through problem-solving, experimenting and creating. As children develop this competency, their confidence in using a range of digital technology to harness their imagination and expand their creative thinking and creative expression increases. Where digital skills are interwoven into all domains of the primary school curriculum, children will be empowered to become active digital citizens, they will develop responsible, safe and ethical use of technology and will be enabled to critically engage and contribute to a digitally connected world.

An example of effective integration of technology can be found in the Nordic countries where ICT is well grounded in educational policy documents. The Norwegian approach to technology integration was to include technology in all subjects as a means of improving the teaching of that subject, and to open up new methods of teaching. Hence, technology was not seen as adjunct or separate but was seen as a competence required of teachers.

Concluding comment

As we look forward to the future of our society and the increasing influence of technology in our everyday lives, digital learning will be a vital element in a redeveloped primary curriculum. However, there are several foundational issues that must be in place to enable our education system to serve the digital learning needs of our pupils. The State should have a role in providing and upholding high-quality broadband to all schools within the country, there must be a commitment to ensuring all teachers have access to a device for use in their teaching and opportunities should be afforded to all teachers to engage in professional development and upskilling in digital competence.

The overall aim of digital technology in education should be to ensure that ICT becomes an integral part of the teaching and learning process in every classroom of every school, embedded across every area of the curriculum, aligned with the approach adopted in numerous other European countries [as outlined in Education International's report entitled 'A Review of Technology in Teaching and Learning' (2020)] including in Norway where technology is not viewed as an additional subject but is considered to be "a basic skill to be a teacher" (Egan, 2020, p.14). Similarly in a Swedish context, it has been noted by Gu (2011) that technology has been included in education for almost three decades and teachers are afforded autonomy to integrate technology into subjects, dependent in class sizes and teachers' own competence in the use of technology. Both issues – class size and teachers' competence – are critical factors to consider when working towards the integration of technology in an Irish primary school context. In Ireland, the vacuum regarding implementation and support for teachers in the development of technology skills coupled with the largest primary school classes in Europe must be addressed to enable technology to be assimilated into the curriculum. Within the Digital Strategy for Schools (DES, 2015) was a recognition of the essential skills with which teachers must be equipped, based on consultation with Irish primary school teachers. Subsequent action plans for education (DES 2016, 2017) state the requirement for technological pedagogies to enable teachers incorporate digital skills effectively in their classroom. This view resonates with the central messages of technology frameworks in other European countries, and it is crucial that the Department of Education address the need to provide adequate, ongoing support for teachers in all primary schools across the country. To realise the key aim of enabling technology to be considered "integral to the process of teaching and learning" (Egan, 2020, p.15), all schools must have the capacity to provide such learning opportunities with well-equipped, fully-resourced digital learning environments with digitally competent and confident teachers. In the absence of these solid, foundational blocks, the building of digital knowledge and skills cannot be achieved, as reiterated in 'A Review of Technology in Teaching and Learning which notes, as one of its four key recommendations, that "technology should not be introduced to an educational environment if the pedagogical reasons for it are not clear". (p.1)

In conclusion, to support the development and progression of digital technology in primary schools the INTO recommends that a revised Digital Strategy addresses the following:

- the need for increased investment in ICT at primary school level to ensure all schools are equipped with the necessary infrastructure to allow pupils access to all required devices;
- the provision of high-speed broadband to all primary schools, with a reliable network that extends to all areas of the school;
- the development of digital content both in English and as Gaeilge by the National Council for Curriculum and Assessment (NCCA) to support the redeveloped primary curriculum and meet the diverse needs of pupils in Irish primary schools;
- the adequate resourcing of the Professional Development Support Service for Teachers (PDST) to provide a range of upskilling opportunities for teachers in ICT including sustained support, enabling them to engage with digital technology and to provide digital learning opportunities for their pupils;

- the provision of assistive technologies and ICT resources (with the relevant continuous professional development) by the National Council for Special Education (NCSE) to facilitate the inclusion of children with special educational needs;

- the re-establishment of middle-management posts in primary schools to enable a coordinated approach to the integrated development of technology usage across the curriculum in all classrooms;

- the development of an integrated approach to procurement and technical support for all primary schools.

ICT has an immense potential to enhance and enrich teaching and learning, but a robust structured approach and cross-agency vision is essential to ensure that the required conditions are in place. INTO recommends that the Department of Education learn from the challenges experienced by primary school teachers in recent years as outlined in this submission, and to consider the recommendations outlined above. Adequate and reliable hardware, software, digital content, ICT infrastructure, continuous professional development and technical support are basic tenets to promote digital learning as espoused by the primary school curriculum. Addressing these issues in a revised Digital Strategy for Schools would greatly enhance the possibilities of technology within our primary schools.

"Technology will not replace great teachers, but technology in the hands of great teachers can be transformational".

– George Couros.

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