DIGITAL LITERACY REPORT TEMPLATE

DIGITAL LITERACY COUNTRY COMPARISON REPORT

MeLDE

MeLDE:

Media Literacy in the Digitalised Era: supporting teachers through a whole-school approach

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DIGITAL LITERACY COMPARATIVE COUNTRY REPORT

PROJECT INFORMATION

PROJECT ACRONYM: MeLDE

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1. ABOUT THE MELDE PROJECT

Digital advances have brought new challenges for Europe's pupils, students and teachers. Algorithms used by social media sites and news portals can be powerful amplifiers of fake news, while data privacy has become a key concern. EU citizens, but above all young students are vulnerable to cyberbullying and cyberharassment, predatory behaviour or disturbing online content. Everyday exposure to digital data - driven largely by inscrutable algorithms - creates clear risks and requires, more than ever, critical thinking and the ability to engage positively and competently in the digital environment.

The ability to read many types of media has become an essential skill in the 21st Century. Media literacy is the ability to access, analyse, evaluate, and create media. Media-literate citizens are better able to understand the complex messages we receive from television, radio, Internet, newspapers, magazines, video games, music, and all other forms of media. Media literacy empowers citizens with knowledge, skills and ability to critically access information online, to critically analyse online information and media content and to engage with media and other information providers for social, civic and creative purposes. In this context, the MeLDE project promotes:

- The development of relevant and high quality skills and competences (accessing media, analysing media content, understanding and evaluating media messages, and the ability to create media content for communication and self-expression and using media as a tool for life-long learning), which are not often included in formal education.

- Open education and innovative practices in the digital era, by offering open and free access to the tools to be developed both for participation in the MeLDE programme and for online assessment and validation of the skills acquired.

- Support the professional development of teachers by creating an educational pack to support teaching and learning of media literacy for digital citizenship. This will also be achieved through the introduction of evidence-based data, benchmarks and indicators built into our innovative framework to be developed during this project, and constant monitoring procedures to ensure acquisition of competences and skills. In addition, quality youth work will be promoted through the new interactive material, as well as the assessment tools, which will follow students' progress.

There are two main target groups:

- Direct - SECONDARY SCHOOL TEACHERS whose profiles will be upgraded and strengthened through the professional development programme to be developed to acquire essential media literacy skills to support, protect and educate students in the topics identified above.

- Indirect - SECONDARY SCHOOL STUDENTS who will be the end beneficiaries of media-literate teachers introducing various innovative activities in their teaching.

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Based on the effects of digitalisation around the world, it is essential for the project to be implemented transnationally, as such a diverse and multi-level challenge demands sharing and exchanging of good practices, transfer of innovation and creation of alliances to support students to become responsible citizens of the connected world we are living in.

The MeLDE consortium brings together partners from 4 European countries: Germany, Greece, Cyprus and the UK that will contribute to the following 5 key project outputs (4 IOs and a learning and teaching activity):

1. Comparative FRAMEWORK with details of the current situation in the partner countries, students' and teachers needs, and benchmarks and indicators against which students' learning will be assessed.

2. An EDUCATIONAL PACK which will include (a) MeLDE TOOL BANK - numerous resources and tools to be collected and created to promote specific aspects of the FRAMEWORK to be developed, (b) MeLDE ACADEMY - an UPSKILLING PROGRAMME for TEACHERS for the acquisition of digital and media skills (later to be used at C1 JSST and as a KA1 Learning Mobility).

3. A dynamic and interactive ePLATFORM, which will serve a range of purposes: (a) TOOL BANK with learning modules, resources, materials and good practices, (b) ACADEMY where Teachers' Training Course will be offered online (along with information about relevant offline courses), (c) Forum and downloadable start-up pack for use by MeLDE COMMUNITY groups. The TOOL BANK will include an ASSESSMENT and VALIDATION TOOL for monitoring, recording, evaluating and validating the acquisition of media literacy skills for digital citizenship. Procedures, methods, endorsement, badges selection etc. will be designed and a link into the provider website will be initiated to introduce VISIBILITY, RECOGNITION AND TRASFERABILITY, as recommended by the EU. This will be based on the Framework.

4. A TOOLKIT to support schools to develop their own 'WHOLE SCHOOL APPROACH' for promoting media literacy for digital citizenship. This will include strategy templates, good practices, guidelines for creating synergies, monitoring tools, implementation tips, exploitation mechanisms to support teachers and schools to integrate media literacy in their practice.

5. The DIGITAL AND MEDIA LITERACY SUMMER SCHOOL FOR TEACHERS which will be pilot-tested to offer blended learning opportunities for the acquisition of media literacy skills for digital citizenship to support students. This professional development course will be valuable for teachers as an in-service training.

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2. ABOUT THIS REPORT

This report is part of Intellectual Output 1 and offers an overview of teachers' digital skills and the digital technologies used in teaching based on a detailed examination of research conducted in four countries: Germany, Greece, Cyprus and the UK. The report reveals the state of research in the partner countries, it reviews Digital Literacy initiatives, sheds light on the current levels of digital literacy in the partner countries and highlights common problems that teachers and students are facing in all partner countries. The aim of this comparative report is to outline the current digital skills gaps in European secondary schools that will inform a cross-national framework and an educational pack designed to support and encourage teachers to use digital technologies in teaching to better communicate and educate new generations of pupils.

The report is structured in 9 sections, followed by a bibliography. The first two sections introduce the MeLDE project and explain the purpose of the present report, section 3 provides a snapshot of the European research on digital literacy, section 4 presents a summary of the findings, section 5 explains the methodological approach adopted by the consortium, section 6 provides a detailed comparative analysis of the data collected in each of the partner countries and section 7 discussed implications for practice, limitations of the present study and presents our recommendations for further research.

3. EUROPEAN RESEARCH ON DIGITAL LITERACY

ICTs are a structural component of modern societies and have decisively influenced many aspects of daily life of citizens in a wide range of areas such as administration, economics, culture, entertainment, education etc. The rapid growth and diffusion of ICTs, the huge volume and multiplicity of digital information available today, combined with the rapid production of new knowledge, form a new social, cultural and educational environment that require a new set of skills. The amount of information available online is often overwhelming and citizens need a new set of skills that will enable them to select, analyze and evaluate online information. This can easily be achieved if societies embrace new technologies and encourage citizens to find out more what can be achieved using new technologies.

In modern educational environments, ICT is seen as a factor of great change in schools that can lead to better educational results. Many argue that if used wisely, ICTs can help students develop the knowledge, skills and attitudes they need in order to succeed in modern societies. The ultimate goal of any education provider is to prepare all students for further life and a successful career, as well as for an active participation in the modern knowledge-based society. The great potential hidden like a treasure behind digital technologies must be discovered and exploited in schools.

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In this context, digital literacy is not an option but a fundamental life skill (Bawden, 2001; Markless & Streatfield, 2007; Martin & Madigan, 2006). Considering the rapid rate of change of digital technology and the rapid adoption of digital technologies in modern society, digital literacy has become a key factor in enabling participation in education (Martin, 2006). The importance of digital competencies was also recognized by the European Parliament and the European Council in 2006 as one of eight key competences essential for all individuals in today's knowledge economy and information society. Digital competence was defined as follows: 'Digital competence involves the confident and critical use of information Society technology (IST) for work, leisure, learning and communication. It is underpinned by basic skills in ICT: the use of computers to retrieve, access, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet.' The European Commission's 2010 Digital Agenda for Europe devoted an entire pillar to digital literacy, skills and inclusion.

European research on digital literacy is abundant in all EU member states and mostly consists of cross sectional studies. We have also identified numerous country reports but only a few cross-country reports. National studies are contributing to setting a national and local research agenda but are rarely contributing to the global debates because 'without a comparative perspective, national studies risk two fallacies – that of assuming one's own country is unique when it is not, and that of assuming one's own country is like others when it is not' (Hasebring, Livingstone, Haddon, Kirwil & Ponte, 2007: 5). Our comparative report is informed by a review of the research literature in the field and offers a comparative exploration of digital skills in secondary schools based on a detailed analysis of data collected in four countries: Germany, Greece, Cyprus and the UK. The report contributes to flagging up common tendencies in the use of digital technologies in the classroom and discusses a series of issues most European countries are facing in the digital era.

Before presenting the results of our research it is important to establish a working definition for the term digital literacy. Media Literacy and Digital Literacy are both relatively new and inter-related concepts as without the former one cannot achieve the latter. Media literacy generally focuses on teaching people to be critically engaged consumers of media, while digital literacy is more about enabling people to participate in digital media in a wise and safe way. Digital literacy builds on media literacy skills while incorporating new concepts. According to the European Commision (2003), 'The ability to use ICT and the Internet becomes a new form of literacy – "digital literacy". Digital literacy is fast becoming a prerequisite for creativity, innovation and entrepreneurship and without it citizens can neither participate fully in society nor acquire the skills and knowledge necessary to live in the 21st century (European Commission, 2003: 3)'.

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There is a plethora of definitions put forward by scholars, Since the 1980s when the term 'digital literacy' started being widely used (Mohammadyari & Singh, 2015), some are very broad, others too narrow. So far definitions have been focusing on a few key elements that combined together make a person digital literate, such as: Internet access, the ability to find, edit, create, evaluate and disseminate online information, or the ability to use digital devices. For example, Glister (1997: 290) defines digital literacy as 'a set of skills to access the Internet; find, manage and edit digital information; join in communications; and other wise engage with an online information and communication network. In simple terms, digital literacy is the ability to properly use and evaluate digital resources, tools and services and apply it to their life long learning process'. Littlejohn, Beetham & Gill (2012: 547) offer a broad definition of the term asserting that digital literacy is a set of capabilities designed to help individuals thrive in and beyond education in a digital world. Other scholars like Hall, Nix and Baker (2013) divide digital literacy into: '- Information literacy (IL), defined as the ability to find and make use of information, including searching for, evaluating and referencing information. - Information and communication technology (ICT) skills, defined as the skills needed to organize, present or share information using a computer, by means of e.g. word processing, spreadsheets, email and presentation software' (Hall, Nix & Baker, 2013: 208).

Digital literacy is considered an umbrella concept that is understood and defined in a variety of ways depending on the discipline, context, scholar's experiences and background. A commonly used definition is the one provided by the European Commission, according to which digital literacy means 'confident and critical use of ICT for work, leisure, learning and communication' (European Commission, in JISC InfoNet, 2012). We believe digital literacy rests upon elements of literacy and expands the concept of media literacy and have therefore formulated our own digital literacy definition based upon the key elements that this broad concept should include. Unlike existing definitions, we have included safety in our definition. We define digital literacy as an umbrella term that combines a set of competences (like: the ability to access, communicate, successfully manipulate, analyse and assess information from a wide array of media sources, skills to access knowledge using any digital device, create and share content online (from text to video and audio files), communicate with others in full awareness of digital risks, as well as skills of inquiry and political engagement) that will enable individuals to perform a variety of tasks and live safely in a digitalised world. Furthermore, digital literacy requires critical thinking, builds an understanding of the role of digital technologies in the society and enables individuals to foster online collaboration and participation. In an education context, digital literacy involves a set of competencies connected to reading and authorship situated in a classroom culture of teaching practices that value, model, scaffold, and facilitate aspects of inquiry, analysis, collaboration, creation, reflection, and social action (Buckingham, 2007; Hobbs, 2010a; Leu, Kinzer, Coiro,& Cammack, 2004, Hobbs and Coiro, 2018). For teachers, Hall, Atkins and Fraser (2014) propose the following working definition: 'Digital Literacy refers to the skills, attitudes and knowledge required by educators to support learning in a digitally-rich world. To be digitally literate, educators must be able to utilise technology to enhance and transform classroom practices, and to enrich their own professional development and identity. The digitally literate educator will be able to think critically about why, how and when technology supplements learning and teaching.'

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4. STATE OF DIGITAL LITERACY EDUCATION IN THE PARTNER COUNTRIES

In the UK, there is a great focus on preparing young people for a digital future. The past decade has brought a number of educational policy changes that aim to make sure that the changes and demands brought by the digital era are reflected in schools. The National Curriculum introduced in 1988 was reformed in 2008 (Details of the National Curriculum for England, Wales and Northern Ireland can be found at: curriculum.qca.org.uk) to replace an out of date ITC programme of study and to allow schools to flexibly plan and manage their own curriculum. Through a greater focus on life-long skills that better reflect the needs of the 21st century societies, the aim of this important reform was to support young people gain industry-relevant skills and become confident internet users and active citizens able to shape the digital future of their communities. The secondary National Curriculum's 'functional skills are those core elements of English, mathematics and ICT that provide individuals with the skills and abilities they need to operate confidently, effectively and independently in life, their communities and work. Individuals possessing these skills are able to progress in education, training and employment and make a positive contribution to the communities in which they live and work' (From the National Curriculum, Key Stages 3 and 4, Functional Skills curriculum.qcda.gov.uk/key-stages-3-and-4/skills/functionalskills/index.aspx).

Children are beginning to learn valuable basic digital skills from the age of five. Primary school pupils are being taught what algorithms are, how to design and write programs to accomplish specific goals and how to apply logical reasoning to detect and correct errors. Secondary school pupils (11-16 or 18) are taught to use at least two programming languages to solve a variety of computational problems, and to design, use and evaluate computational abstractions of real-world problems and physical systems. Students are also being taught how instructions are stored and executed within a computer system. These skills will support young people to adapt and make the most of future technologies.

The new reformed curriculum is designed to help all young people gain the knowledge and skills to succeed in a very challenging digital world and aims to foster participation in education and to encourage more students to study technology-related qualifications. Backed by industry experts, in 2014 Computing has been included as a statutory national curriculum subject at all four key stages (alongside just four other subjects: English, Maths, science and P.E) and computer science GCSE is now included in the EBacc as a science. As a result, since 2013, the number of students studying computer science GCSE has increased from 4,021 in 2013 to 33,500 in 2015 (see http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/science-and-technology-committee/digital-skills/written/27045.html)

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Germany is a federation and consists of 16 Bundesländer (federal states) each having areas of responsibility of their own. Therefore, the German system of education is not centrally organized. The regional ministries of education and culture are responsible for schools, in which the range of subjects, curricula or certificates can be regulated in different ways depending on the state. For many years the increasing importance of media education is highlighted and promoted within and by the curricula. Twenty years ago a written document about media education- Medienkonzept- was put together with the aim to include media learning as a mandatory part of the school curriculum.

In Germany, computer science as a school subject is taught from the age of 10/12 (it depends on the type of secondary school and the Bundesländer aka federal states) and is mandatory in only nine of 16 federal states in Germany. Additionally, in those nine Bundesländer (federal states) IT classes are not offered in all types of schools and quite often they are only part of a broader curriculum. In the remaining federal states such classes are up to the schools or teachers. The students from Rehabilitation Studies of the Technical University Dortmund organise an All Digital Week campaign. It is about inhabitants of Germany acquiring new digital skills and competences and then supporting others in their learning process of digital media. Everyone is invited – senior citizens, refugees, educators and volunteers – to take part in various training sessions for different target groups.

Media education in Cyprus has been established and students take it as a compulsory lesson in the curriculum of Modern Greek in secondary education. In particular, at the first grade of the secondary education, students have a topic “The world through the screen-image”. During this topic, students will have the ability to create an electronic album which they will work in groups to demystify the fake news of many media today. At the second grade, students are learning about the topic ‘I am observing, I will be informed and entertained from different sources’ (mass media, internet etc.). During this topic, students will discuss the information and the entertainment they receive from mass media and the Internet. In addition, students have to choose an important event and to present it through the collection of different material from a variety of sources as well as evaluating the reliability and the validity of this material. The material can be from newspapers, the Internet, television and radio broadcasts. Finally, another topic at the third grade named “Ahead of the future” aims for students to understand what they have learned about media literacy. They need to present all the advantages and disadvantages about the topic and as a consequence they will improve their critical thinking skills.

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Secondary Education (ages 12-18) in Greece is divided into Gymnasium and Lyceum, each of which have three grades. Gymnasium is part of Compulsory Education whereas Lyceum is not. In Gymnasium students attend Informatics lessons for one hour per week. Computer Science courses in the Gymnasium follow the same logic and thematic content axis as in elementary school but at a more advanced level. Students build on previous knowledge acquired in elementary school on how to use multimedia applications, how to navigate and interact with computers, how to browse the Internet and how to use appropriate software in their various lessons and in other activities. Furthermore, students approach concepts such as data and information as well as the means and techniques used to process, assess, transmit and download any information that may be presented in digital form. They learn about the general structure of computer systems and approach the concept of security, understand the necessity of having and keeping rules while using computers and especially when going online.

As already mentioned Lyceum is not part of compulsory education in Greece. Nevertheless, the vast majority of students continue their education and attend Lyceum and hence it is important to study its curriculum as well. In Greece, Lyceum has three grades. The purposes of teaching Computer Science in Lyceum are the expansion of general computer literacy of students with emphasis on the development of competences and skills in the use and utilization of computer and network technologies as learning and thinking tools, the rise of awareness of students about computer applications in the modern world, and in particular about the opportunities and perspectives they create in the industry/direction they are going to choose to study. Finally, perhaps the most important purpose is the rise of awareness and the development of students' critical thinking competence about social, moral, cultural, etc. issues raised by the "invasion" of computer and network technologies into all areas of human activity.

In the first grade of Lyceum, Computer Science is not compulsory but it is one of four courses which students can choose. Students that actually choose the course attend lessons for two hours weekly. In the second grade, the Computer Science course is compulsory and students attend lessons for one hour per week. In the third grade of Lyceum students attend a number of core courses and the rest of the courses they attend depend on the orientation they choose. The orientation students choose depends on the studies they want to follow due to the fact that in the end of Lyceum Greek students take the “Panhellenic Exams” with which they enter higher education. In two of the orientations that mostly concern science and economics students attend a programming course for two hours weekly. The main aim of the course is to develop students' analytical and synthetic thinking, to help them acquire methodological skills and to teach them how to solve simple problems in a programming environment.

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4. SUMMARY OF FINDINGS

New ICT environments radically change the way people access, compile, analyse, represent and present information, communicate and collaborate with each other. They shape and define new types of skills that students need to cultivate in their core curricula so they can use ICT effectively, creatively and ethically. The aim is to enhance the learning outcomes and the continuous and lifelong development of students.

National governments' efforts to improve the level of digital literacy is seamless in all four countries, outlined in a robust digital literacy strategy (Digital strategy in the UK, Digital strategy for Cyprus (2012), National Digital Strategy in Greece and Medienkonzept in Germany) and all four countries are implementing a series of digital literacy projects, like:

- Lloyds Bank UK - Consumer Digital Index (2016); Tinder Foundation / GO ON UK: The economic impact of Basic Digital Skills and inclusion in the UK (2015), eTwinning, EUKidsOnline in the UK,
- DigitalPakt#D, School Cloud, Firewall Line Preventative Project, Gute Schule 2020 in Germany
- CyberSafety, NENTEP, EUKidsOnline, eTwinning, IdentifEYE in Cyprus,
- The New School Project, MedeaNet, Meizon Project, eTwinning, teachers4Europe, School-Lab, Digital Skills for All in Greece.

Our results show that despite the sustained efforts to digital capabilities of individuals in all four countries there is still a lot to be done. Our results show that despite each Government's efforts to bridge the digital gap and make sure all people have Internet access and equal chances to understand and use digital technologies, digital divide is still high in all four countries. One of the most common forms of digital exclusion in all partner countries is the inability to access and use ICTs. Concentrated and focused actions are being implemented but more needs to be done to eliminate this digital gap and provide access to the Internet for all, which is something all the European governments are working on through massive investments in infrastructure.

Compared with previous research this report shows a slightly improvement regarding teachers' levels of digital literacy but there is still a lot to be done. This report highlights a series of measures that institutions must put in place in order to ensure teachers and students are benefiting from access to Internet, quality WiFi, relevant technology.

Digital technology usage in schools has also improved with more than 80-90% of teachers using digital technology in teaching and all schools encouraging the use of new technologies in the classroom. However, despite encouraging staff to use digital technologies in the classroom, the majority of schools to not provide regular training for their staff. We argue that the lack of regular mandatory training can inhibit education and will have a major impact on teachers and students alike. We detected a lack of confidence when it comes to making the most of digital technologies in teaching associated with the lack of relevant regular training.

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In all partner-countries media literacy is not identified as an autonomous object of study but mainly as a cross-curricular, interdisciplinary subject and within ad hoc school projects. Moreover, digital literacy education is not part of teachers' education, working with digital technologies in the classroom seems to be of one's own free choice and the efforts to include digital technologies in teaching are disparate. This does not mean that there are no training opportunities for teachers. On the contrary, there are national and local training initiatives (for example, the Greek training programme for all teachers and educators named "Training of teachers in the use and utilization of ICTs in the educational teaching process"). In addition, each school runs its own staff development scheme. However, because ITC training is not compulsory for teachers, these disparate attempts to train teachers do not build a solid foundation that will lead to the successful integration of ICTs in teaching in the future. In addition, there's no formal accredited school training framework for in-service teachers on media education as a core subject.

Current practice in all four countries shows that digital technologies are used in teaching mostly as secondary tools to reinforce knowledge, set up homework/tasks, or disseminate resources. Teachers have an inclination to use digital technologies in teaching and our report shows that students welcome this and would like their teachers to use more digital devices and technologies in the classroom. Most teachers are trying to make the most of digital technologies but feel they are not using them to their full potential because they haven't got appropriate training and up to date facilities. However, most schools still have to deal with an immense amount of adversity from teachers who do not see the benefits of the ICTs and are not interested in using digital technologies in teaching. That is why we believe that continuous training of teachers is becoming imperative and digital literacy education should be a mandatory element of teachers' training that will open the horizon and show teachers the immense educational potential that the digital world is offering.

The challenges that schools face in all partner countries are all congregated in the area of online safety, both target groups indicating that they are not sure what happens with the information they post online, they do not know how to report a fake website or how to spot fake news. E-Safety training should be mandatory for both teachers and students

In all partner countries the majority of teachers and students have had computer training but this was not mandatory, and it is not a compulsory element of their education. Moreover, they are not benefiting from regular training to keep them up to date with the new technological developments. Training on digital technologies is still seen as being the responsibility of the individual and not the institution, the decision to have training pertains to the individual and it is only at their initiative.

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Smartphones have become ubiquitous, all teachers and students own a smartphone and our results show that the extensive use of smartphones had resulted in other digital devices becoming obsolete (e.g. Ipods/MP3/Tablets). The popularity of smartphones had also led to both teachers and students having Internet access everywhere (using either mobile data or free WiFi). There is still a considerable number of individuals who only have Internet access at home or at work, with the exception of Germany and Greece where the percentage of teachers and students who access the Internet in schools is lower, respectively only 12% and 13% of teachers have Internet access at school.

Teachers and students are adamant about their ability to find, use or share online information. Google, email and YouTube are the most used Apps for both target groups. The most used devices in teaching are: laptops, smartphones, tablets and white boards. We believe that knowing how to use various digital devices is not enough, European schools need a new model of education, a new way of designing lectures and an entirely new teaching approach that won't focus as much on the quantity of information passed on to students but more on how that information is useful to them and how can it be applied in real contexts and re-used it in the future.

There is a constant drop in teacher's use of social networking sites (a high percentage of teachers are not using SNSs at all) juxtaposed with a generational shift in the use of social networking sites, our research found that teachers tend to use Facebook and Twitter, while the majority of students are using Snapchat and Instagram and have never had a Facebook or Twitter account.

European schools still have to consider investing in their infrastructure and in maintaining the equipment up to date. Our data show that the most common problems teachers face when trying new technologies in the classroom, are: poor WiFi or Internet access, lack of budget or appropriate facilities or lack of technical support. Teacher's efforts to include digital technologies in teaching are further restrained by the lack of time and lack of training.

5. METHODOLOGY

For the survey that took place as part of Intellectual Output 1, the Consortium decided to create and distribute questionnaires electronically using Google Forms. The questionnaires were distributed to each partner country through available media. In all partner countries the survey was distributed electronically to teachers working in secondary schools. The target groups were:

- Direct target group: Secondary education teachers
- Indirect target group: Secondary education students

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The consortium designed two (2) separate questionnaires, one for secondary school teachers and one for secondary schools pupils. Both questionnaires contained closed type questions such as single and multiple choice and open questions, such as please give as an example of how you are using digital technologies in teaching. Data was collected through Google Forms and exported as an Excel file. Descriptive statistics were used in order to analyse the results. The graphs were taken from Google Forms. The two (2) questionnaires can be found in the following links:

Teachers Questionnaire:
https://docs.google.com/forms/d/e/1FAIpQLSftZrqLeZeFaCF9DvDsgqHMqpNM4krAVjbpeh4hr730I2I8ZQ/viewform?usp=sf_link

Students Questionnaire: https://docs.google.com/forms/d/e/1FAIpQLSeUKUawYWKg00OIFH-76OW54h9EL9VmD0FA-lUGUlocK1UTlQ/viewform?usp=sf_link

Giving the relatively limited number of responses, data was processed and analysed manually. The use of manual methods to code data is seen as equally valid as electronic methods, scholars concluding that 'the choice will be dependent on the size of the project, the funds and time available, and the inclination and expertise of the researcher' (Basit, 2003: 143). In fact, analyzing data manually brought us closer to the data and allowed us to analyze and discuss each individual response and look for, correct and eliminate any errors in the data set. We also used Google Drive to analyze data. As well as Microsoft Excel, Google drive provides a decent software widely used for quantitative data analysis, being capable to run basic descriptive statistics as well as a range of more complex statistical analyses for small samples.

Table 1: A snapshot of the participants

	61 secondary school teachers and 176 students from the UK took part in this research.
	50 secondary school teachers and 25 students from Germany took part in this research.

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	50 secondary school teachers and 25 students from Cyprus took part in this research.
	61 secondary school teachers and 34 students from Greece took part in this research.

6. KEY FINDINGS: COMPARATIVE COUNTRY LEVEL ANALYSIS

a. DIGITAL TECHNOLOGIES USAGE

In all four countries the majority of teachers have been using computers for more than 10 years and most of them have had some sort of computer training. However, it is worrying that 20% of teachers form each country, have never had any training at all. Despite this, results show that all teachers are active Internet users, spending on average at least 5 hours a day online (see Table 2 for a detailed comparative analysis).

In all countries teachers' access to Internet is overall very good, most of them having Internet access at home and a growing number of teachers have Internet access everywhere. However, a source of concern is that results show that Internet access in schools seems to be scarce in some partner countries, like Greece for example, where the vast majority of teachers (78,7%) seem to have access to a computer at home, and only 13,1% who have computer access at work. This shows the need of providing computer infrastructure ain Greek schools as only one in five teachers seems to have access to a computer at work.

Comparative analysis shows that 15%-30% of teachers do not use social networking sites (SNS) at all and of those who do, most do not have a Snapchat or Instagram account.

The most popular digital devices used by teachers are: smartphones, laptops, desk computers and the most popular APPs are Google, Email and YouTube (see Table 2 below).

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TABLE 2: DIGITAL TECHNOLOGIES USAGE - TEACHERS

				
Computer Usage	- 91.8% of the participants having used computers for more than 10 years - 8.2% have been using computers for 6-10 years	98% have been using computers for more than 10 years	56% have been using computers for more than 10 years	- 88,5% have been using computers for more than 10 years - 8.2% have been using computers for 6-10 years - 3.3% have been using computers for less than 6 years.
Computer Training	- 80% have had computer training, - 20% are self-taught	75% have had computer training	81.6% have had some training	- 82% have had training - 18 % are self-taught
Time spent online every day	- 21.3% are online all the time - 26.2% spend 6-10 hours online - 31.1.% spend 0-5 hours - 21.3% spend more than 10 hours online	- 43% spend online not more than 5 hours a day - 39% between 6 and 10 hours - 6% more than 10 hours - 12% are always or almost always online	- 52% spend more than 5 hours a day online	- 60.7% spend at least 5 hours a day online - 19.7% spend between 6-10 hours a day online - 4.9% spend more than 10 hours a day online - 14.8% are always online
Internet Access	- 72.1% have Internet access at work - 65.6% have Internet access at home - 30% have Internet access everywhere	- 62% have Internet access at home - 12% at school - 6% almost everywhere	-72% have Internet access at home and 22% have Internet access at work	- 78.7% access the internet at home - 13.1% have internet access at work - 8.6% go online from other places (public libraries, Internet Cafes, etc.)
Use of Social Networking	- 43.3% have been using social	- 44% have been using social networking sites for	- 92% use social networking sites	- 65.6% have been using social

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Sites (e.g. Facebook, Twitter etc.)	networking sites for 6-8 years - 31.7% for more than 10 years - 10% have started using social networking sites 3-6 years ago - 15% do not use social networking sites	more than 10 years - 26% between 6 and 8 years - 12% between 3 and 5 years - 16% of teachers do not use social networking sites	- 74% have been using social networking sites for at least 3 years.	networking sites for more than 3 years - 24.6% for more than 10 years - 31.3% do not use social networking sites.
Finding out about new technologies	- 63.9% work colleagues, - 57.4% friends - 54.1% family - 41% social media - 37.7% radio/TV - 23% professional networks - 21.3% IT colleagues - 9.8% newspapers - 8.2% books (8.2%) - 3.3% librarians.	82% - friends, 62 % - work colleagues, 52 % - social media 48% - family, 24% - radio/television.	- 62% work colleagues - 58% through social media - 40% through professional networks - 32-34% through friends and family.	-52.5% social media, -41% work colleagues, -39.3% friends -32.8% professional networks -18% radio/TV -14.8% IT colleagues -11.5% family -9.8% newspapers -4.9% books
Popular digital devices	- 100% own a smartphone - 50% have a desk computer - 4.8% (3 teachers) do not have a laptop	- most popular devices are: computers, laptops and smartphones. - most teachers do not have notebooks, digital cameras or iPods/MP3 players	- 100% own a smartphone - 2% do not have a laptop - 42% do not have a desktop computer	-96.7% own laptops -96.7% own a smartphone -70.5% own computers - 45.9% own a tablet -37.7% own a digital camera -26.2% own a notebook -24.6% own an iPod/MP3 Player -21.3% own an eReader
Use of APPS	- 100% use Google, email and YouTube. –	- email, google, Dropbox and	Email, Facebook, Google and	- 63.9% use Skype -96.7% use Google

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	74% do not use Snapchat - 63% do not use Instagram	YouTube are the most commonly used Apps, - teachers do not use Snapchat, LinkedIn, Twitter or Viber	YouTube were the most answered choices. Most of them for work and social networking	-93.4% use Youtube -73.8% use Mobile Apps -65.6% use Facebook -54.1% use Dropbox -47.5% use Wikis -41% use LinkedIn - 31.2% use WhatsApp -24.6% use Twitter - 16.4% use Snapchat

In all partner-countries students are very confident in using any digital device, almost all of them having used computers for 6-10 years or more than 10 years (see Table 3 for a detailed comparative analysis).

A large number of students have never had any computer training (68% in Germany, 49% in the UK, 41.7% in Cyprus, 23.5% in Greece). Despite this statistical fact all of them appear to be digitally literate and very confident in using new digital technologies. This can be a result of the fact that they were born in the digital era when computer training is mostly done at home by parents and other members of the family who own and use more than one digital device. Students are fascinated by keeping up with new technological developments but when it comes to finding out more about digital technologies teachers are not the first persons they go to. Results show that the majority of students are informed about digital technologies through social media, friends or family.

The vast majority of students spend at least 5 hours a day online at home, at school or everywhere. Contrary to the popular perception that all students spend a lot of time on social networking sites, our results show that, in reality, a small percentage of students do not use social networking sites at all (see Table 3 below), while a similar small percentage have been using social networking sites their entire life.

Students favour mobile digital devices and value social connectivity and the quality of their online communities. The most frequently used devices by students are smartphones, laptops and Ipads/Tablets that they use to play games, watch programmes, read news, listen to music and study. The most frequently used APPs are Instagram, Snapchat, Google, YouTube, and WhatsApp.

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TABLE 3: DIGITAL TECHNOLOGIES USAGE - STUDENTS

				
Computer Usage	- 64.8% have been using computer for 6-10 years - 24.4% for more than 10 years - 10.8% for at least 6 years	- 60% have been using computers not longer than 5 years - 32% between 6 and 10 years - 8% for longer than 10 years	76% have been using computers for more than 6 years	- 55.9% have been using computers for 6-10 years - 35.3% for 0-5 years - 8.8% for more than 10 years
Computer training	- 49% have never had computer training - 51% have had training	32% have had computer training	58.3% have had training	- 76.5% have had computer training - 23.5% have never had training
Time spent online every day	- 47% spend 6-10 hours a day online - 25% spend 0-5 hours a day online - 9% spend more than 10 hours a day online - 19% are online all the time	- 36% spend online not more than 5 hours a week - 32% between 6 and 10 hours - 16% more than 10 hours - 16% are always or almost always online	60% spend at least 6 hours a day online	- 76.4% spend at least 5 hours a day online - 14.7% spend 6-10 hours a day online - 5.9% spend more than 10 hours a day online - 2.9% are always online
Internet Access	- 96% access the Internet at home - 58% have access to the Internet at school - 20% have Internet access everywhere (mobile data or WiFi)	- 84% usually have access to the Internet at home - 28% access the Internet at school	-96% have Internet access at home -40% at school & coffee shops	- 94.1% have Internet access at home - 14.7% go online at school
Use of Social Networking Sites (e.g. Facebook, Twitter etc.)	- 54% have been using social networking sites for 3-5 years - 31% for 6-8 years - 3.4% do not use social networking	- 46% use social networking sites for no longer than 2 years - 25% from 3 to 5 years - 21% do not use	- 48% of respondents use social networking sites between 3-5 years -24% 0-2 years -20% 6-8 years	- 47% have been using SNS for up to 2 years - 44.1% for 3 to 5 years - 5.9% do not use social networking

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	sites - 11% my whole life	social networking sites	-8% do not use social networking sites	sites
Finding out about new technologies	- 76% find our about the latest technology on social media forums and networks - 68% from friends - 49% from family - 31.3% from teachers and radio/television	64% - friends, 64% - family, 28% - social media	-76% online forums, books 72% friends -48% family -28% radio/TV -20% teachers/educators	- 70.6% through social media -64.7% from friends -41.2% from other media (TV and radio)
Popular digital devices	98% own a smartphone or/and a laptop 85% own an Ipad/Tablet 53% do not have an ebook reader 50% do not have a digital camera 42% do not have an Ipod/MP3 22.7% have a desk computer	- most popular devices are: smartphones, laptops and computers - most students do not have notebooks, eBooks, digital cameras or iPods/MP3 players	98% owns a smartphone using it primarily for contacting friends and entertainment, as well as reading and finding information -85% owns a laptop -62% owns a desktop computer -94% do not own eReaders/Kindles -50% owns a tablet	- 97.1% have smartphones (only 1 student does not have a smartphone) - 67.7% also use tablets - 64.8% own a desktop computer - 61.8% have laptops - 94.1% do not use e-readers
Use of APPS	Instagram (95%), Snapchat (91%) and WhatsApp (85%). - 54% have never used Twitter - 29% have never used Facebook	- mobile APPs, Instagram, YouTube, Facebook and Snapchat are the most commonly used, - students do not use LinkedIn, Viber or Blogs/Vlogs.	-96% Facebook -88% YouTube -80% Instagram -76% use Google for studying/reading	-94.1% use Youtube -91.2% use Instagram -91.2% use Google - 79.5% use Viber - 73.5% use email - 70.5% use other mobile Apps - 29.5% use Facebook

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b. DIGITAL TECHNOLOGIES USAGE IN SCHOOLS

Digital technologies usage in schools is high, the majority of teachers using them or having used them in teaching (see Table 4 for a comparative analysis). All schools encourage teachers to use digital technologies in teaching but only a few provide regular training to support teachers in their quest.

The most used digital devices in teaching are laptops, smartphones, desk computers, tablets and interactive white boards that teachers use for visualisation of power point presentations or YouTube videos, surveys and collaborative quizzes, collecting and assessing student work, etc. (see Table 4).

There are several common reasons that teachers identify as main reasons that prevent them from using digital technologies in teaching, as follows: the lack of budget/appropriate facilities, lack of time, WiFi problems, lack of training and the lack of technical support.

TABLE 4: DIGITAL TECHNOLOGIES USAGE IN SCHOOLS

				
Use of digital technologies in teaching	94% use digital technologies in teaching 6% don't	98% of teachers use digital technologies in teaching	90% use of digital technologies in teaching	86.9% use digital technologies in teaching 13.1% have never used digital technologies in teaching
Schools attitude towards the use of digital technologies in teaching	100% say that their school encourages the use of digital technologies in teaching	88% say that their school encourages the use of digital technologies in teaching	77% say that their school encourages the use of digital technologies in teaching	60.7% said that their school encourages the use of digital technologies in teaching
Digital literacy training in Schools	59% of schools offer regular training 41% of schools do	57% of schools/organisations provides regular staff	Only 26% say that their school provides regular	83.6% schools don't offer constant training

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	not provide regular training on the use of new technologies	development training on the use of new technologies to better support teaching	staff development training on the use of new technologies	on new technologies
Most used digital devices in teaching	The digital devices most frequently used in teaching are: laptops (50 teachers declared they use laptops in teaching), smartphones (23 teachers are using smartphones in teaching), desk computers (13 teachers use them in teaching) and tablets (only 10 teachers use tablets in teaching).	62% use smartphones in teaching 38 % use Interactive White boards 32% use VLEs 22% use interactive online platforms 20% use Tablets/Ipads 8% use laptops in teaching 6% use open badges	77% use laptops in teaching	Laptops are used to browse online, network (social media), read news or e-shopping. Laptops are also the most used digital device in teaching.
Digital technologies usage in teaching	- Power Point presentations - surveys, quiz collaboration, mini tests on Kahoot or Socrative.com - use of Google Docs to collaborate and share notes - show my homework - online video clips - social media posts and videos - research and class activities (mentinetre.com) - group tasks using	- showing explanatory videos, - visualization – PowerPoint presentations, - learning vocabulary with an Interactive Whiteboard and a dictionary on a smartphone, - homework via email, - short quizzes (Kahoot), online tests, creating surveys, - making videos with smartphones and cameras, - using audio recorders for practicing – practical tasks for students, - checking the	-Educational games -PowerPoint Presentations -Blackboard/moodle -Online Quizes -Edmodo platform -Voice recordings -Kahoot evaluation application	- use of Moodle platform - use of Interactive Tables - use of Power Point presentations - use of email - use of Edmodo / Geogebra / Kahoot / Euclidea / Photomath - use of Google Drive - use of laptops and tablets for teaching

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	tablets and smartphones - using VLE to set students a task in class or homework and audio feedback - ePortfolios	knowledge of the students via Moodle and/or open badges, - communicating with students through apps, - collecting and evaluating seminar papers.		
Reasons not to use digital technologies in teaching	- 70% lack of time - 60% lack of budget/appropriate facilities - 43% WiFi problems - 43% lack of technical support - 29% lack of training	- 63% WiFi problems - 40% lack of time - 28% lack of training - 20% no technical support - 18% lack of budget/appropriate facilities	- 50% lack of training - 29.2% because of lack of time	- 78.7% lack of budget/appropriate facilities - 44.3% poor access to Internet - 44.3% lack of time - 34.4% lack of technical support

b. DIGITAL LITERACY SKILLS (teachers and students)

The self-assessed level of digital literacy for both target groups is high, all the participants declaring that they can find information online very easily, they are confident they know how to use various types of digital devices, or how to search for information or persons online. Although they seem confident in talking about new technologies and do not feel left behind when others talk about digital technologies, all the participants believe that it is important to improve their digital skills and learn more about digital technologies (see Table 5 and 6 below).

Both target groups also consider that they should have regular training on how to use digital technologies.

The biggest skills shortage for both target groups is in the area of online safety. Teachers could also use more training especially on how to teach safety issues.

TABLE 5: DIGITAL LITERACY SKILLS - TEACHERS

				
Learning about Digital	97% strongly agree or agree that they	78% agree or strongly agree that they would	90% strongly agree that they are willing	54.1% do not feel they know how to

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Technologies	are willing to learn more about digital technologies 82% would like to learn more and use digital technologies more in teaching	like to use technologies more often in teaching 56% agree and 44% strongly agree that they are willing to learn more about digital technologies	to learn more about digital technologies	make the most of digital technologies in teaching
Digital Skills	100% agree that it is important to improve their digital skills	68% agree and 32% strongly agree that it is important for them to improve their digital skills	58% and 50% strongly agree and agree that it is really important for them to improve their digital skills	Most believe that it is important to enrich their digital skills
Finding Information Online	54% very easy 45% relatively easy	60% consider finding information they need online very easy and 40% think it is relatively easy	44% very easy 40% easy 14% difficult 2% very difficult	62.2% know how to access, use, create and share information online
Using digital devices	100% know how to use various types of digital devices	86% know how to use various types of digital devices	68% know how to use digital devices and social media platforms 32% do not know	16.4% know how to use various types of digital devices
Keeping up to date with new technology developments	95% do not feel left behind when other talk about digital technologies	51% feel left behind and 31% do not feel left behind when others talk about digital technologies	Overall, the consensus (66%) do not feel left behind when others talk about digital technologies	70.5% do not feel left behind when other talk about digital technologies
Generational skills gap	90% disagree with the statement 'do you feel students are better than you at using digital technology'	- 39% are not sure if their students know how to use technologies better then them - 31% disagree with the same statement	60% of teachers feel that there is a generational skills gap between them and their students, with their students being more digitally aware.	36.1% disagree with the statement 'do you feel students are better than you at using digital technology'
Online information	73% know what happens with the information they post/share online	62% know what happens to the information they post/share online and 48% are not sure of it	56% know what happens with information they post/share online, while 20% don't and 24% they are uncertain	40.9% do not know the use of information they share online

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Finding information or someone online	98% of teachers know how to finding someone online (a well-known scholar or teacher).	88% know how to find someone online (e.g. a well-known scholar in their field)	72% know how to find/track someone online (e.g. author) while 20% they are uncertain.	86.8% know how to find someone online
Legally usage of online information	66% do not know what online information can legally be re-used	54% know what online information they can legally re-use	58% know how to use online information in a legal context, while the remaining percentage feel uncertain and/or they do not know.	47.5% do not know or aren't sure about what online information they can legally re-use
Accessing online databases	82% know how to use an online database to find resources for teaching	74% know how to use an online database to find useful resources for teaching (e.g. the library's online catalogue)	64% know how to use an online database and find resources/information about teaching	40.9% don't know or aren't sure how to use an online database to find resources for teaching
Use of blogs	92% do not have a blog	86% do not have a blog	72% do not own or know how to use blogs, while a small 15% knows how to use blogs	77% do not have a blog
Citation of online sources	100% know how to cite an online source in their lectures	90% know how to cite an online reference in their lectures	66% know how to cite an online reference	75.4% know how to cite an online source in their lectures
Fake news	56% do not know how to identify fake news	40% know how to identify fake news and another 40% are not sure how to do it	62% know how to find and report fake news while a noticeable percentage do not know or are uncertain of how to spot and report fake news	52.4% cant recognise fake news
Fake websites	70% do not know how to report a fake website	44% are not sure how to report a fake website and 30% do not know how to do it	50% are not aware of how to spot a fake website while the rest 50% know how to report a fake website	70.4% do not know how to report a fake website
Creating content	56% do not know how to use media capture devices to	62% know how to use media capture devices to record or	32% do not know how to use media capture devices to record or	34.4% do not know how to use media capture devices to

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	record or edit a podcast or a short video	edit a podcast or a short video	edit a podcast or short video	record or edit a podcast or a short video
e-Safety training	55% have not had training on how to stay safe online in the last year	84% did not have any training on how to stay safe online in the last year	50% said that they have been trained on how to stay safe online, while the rest 50% didn't had any training on e-safety	72.1% have not had training on how to stay safe online in the past year
Protecting personal data	98% know how to change the privacy settings on Facebook	68% know how to change their privacy settings on Facebook	77% know how to change the privacy setting on Facebook	62.3% know how to change the privacy settings on Facebook
Cyberbullying	50% are not sure they can recognise a student that is a victim of cyberbullying	40% of teachers are not sure if they can recognize if a student is a victim of cyberbullying	49% do not know or they are uncertain if their student is or has been a victim of cyberbullying	72.1% do not know or aren't sure they can recognise if a student is being bullied online.
Recognizing reliable sources	45% are not sure or do not know how to identify or report a fake website	46% know how to recognize if an online source or website is reliable and 32% are not sure of it	46% are not certain and/or they do not know how to identify fake websites or news on the internet	70.5% are not sure or do not know how to identify or report a fake website
Sharing online files	100% know how to legally share files with students and other teachers	84% know how to legally share files with students and other teachers	68% know how to share files online in a legal context, with their students and/or other colleagues	44.3% know how to legally share files with students and other teachers
Online promotion	48% do not know how to promote themselves or an event online	72% know how to promote themselves or an event online	56% of the teachers know how to promote themselves through the internet	54.1% know how to promote themselves or an event online
Using social networking sites	70% feel they know how to make the best of online networking tools (Facebook, Twitter, etc.)	63% feel they know how to make the best of online networking tools (Facebook, Twitter, etc.) and 37% do not know how to do it	68% feel that they know how to make the best of social networking tools (Facebook, Twitter, etc.), while 32% do not know how to do it	54.1% feel they don't know how to make the best of online networking tools (Facebook, Twitter, etc.)

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Training	95% of teachers consider that they should have regular training on how to use digital technologies	79% agree or strongly agree that teachers should have regular training on how to use digital technologies	An overall of 93% of the teachers agreed on the fact that they should have regular training on how to use digital technologies and the want to learn more through training	75.4% of teachers consider that they should have regular training on how to use digital technologies

The majority of students would like their teaching to use digital technologies in teaching because they strongly believe that they learn better and faster with the aid of technology (see Table 6 below for a detailed comparative analysis).

TABLE 6: DIGITAL LITERACY SKILLS – STUDENTS

				
Using digital devices	64% enjoy using digital devices	44% agree that they enjoy using digital devices and they like to keep up with the new technological discoveries	Over 70% of students feel comfortable and are enjoying the use of digital devices	88.2% enjoy using digital devices
The use of digital technologies in teaching	46% think teachers should use digital technologies more	56% agree that their teachers should use digital technologies more	70% of students agree that their teachers should use digital technologies and tools more often	50% would like their teachers to enrich learning activities by using digital technologies
Learning with and about digital technologies	- 80% agree or strongly agree that they like learning with digital tools - 85% would like to learn more about	- 78% agree or strongly agree that they like learning while using digital tools - 56% strongly agree and 44% agree that	81% of respondents agree that they enjoy and like learning more on digital technologies through the use of	-82.4% agree or strongly agree that they like learning while using digital tools -97.1% strongly agree and 44%

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	digital technologies	they are willing to learn more about digital technologies	them	agree that they are willing to learn more about digital technologies
Confidence in using digital technology	60% do not feel left behind 40% are not sure	69% disagree or strongly disagree that they feel left behind when others talk about digital technologies, 25% are not sure	75% disagree that they feel like being behind in conversations related to digital technologies	85.2% agree that it is important for them to develop digital skills
Confidence in using digital devices	77% feel confident using any digital device	40% agree that they feel comfortable using any digital device	83% feel very comfortable and confident when using digital devices	88.2% feel confident talking about digital technology
Finding information and people online	88% find it relatively easy to find information or people online 70% know how to find someone (e.g. a well-known researcher) online	56% consider finding the information they need online easy and 36% relatively easy; 12% find it not easy 48% agree that it is important for them to improve their digital skills 76% know how to find someone online	88% of students consider finding information online easy and they do not have any problem with it	76.5% find it relatively easy to find information or people online
Sharing information online	73% think they know what happens with the information they post/share online e	60% know what happens to the information they post/share online	72% think that they know what happens with the information they share online	52.9% are not sure about the use of information they share online
Re-using online information	35% do not know what online information can legally be re-used	50% do not know what online information can be legally re-used and 40% know it	58% do not know or are uncertain which online information can be legally re-used	55.8% do not know or aren't sure about what online information can be legally re-used
Using online resources for learning	53% do not know how to use the library's online catalogue to find useful resources	48% know how to use the library's online catalogue to find useful resources to support their	52% do not know or are uncertain on using online resources for learning. This is	50% don't know or are not sure they know how to use online library

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	to support their studies	studies and the another 48% do not know how to do it	indeed a high number of students that do not know, or they are not certain on how to use online resources for learning	catalogue
Blogs	82% do not have a blog	76% do not have a blog and 20% have a blog	88% do not own/have a personal blog	85.3% do not have a blog
Citation of online sources	54% do not know how to cite an online source in an essay	60% do not know how to cite an online source in their essays and 28% know how to do it	60% know how to cite online sources in their assignments	74.2% do not know how to reference online sources in their essays
Fake news	42% do not know how to identify fake news	44% do not know how to identify fake news and 39% know how to do it	34% do now know or are uncertain on how to identify fake news	52.9% do not know how to identify fake news
Fake websites	50% know how to report a fake website	64% do not know how to report a fake website	51% know how to report a fake website	73.5% do not know how to report a fake website
Creating content	40% do not know or are not sure how to use media capture devices to record or edit a podcast or a short video	80% know how to use media capture devices to record or edit a podcast or a short video	74% know how to use media capture devices to record/edit or create a podcast/short video etc.	61.8% do not know or are not sure how to use media capture devices to record or edit a podcast or a short video
e-Safety training	70% have had training on how to stay safe online	68% had a training on how to stay safe online	80% have had previous e-safety training	64.7% have had training on how to stay safe online
Protecting personal data	81% know how to how to change privacy settings on Facebook and 19% are not sure.	68% know how to change privacy settings on Facebook and 32% do not know how to do it	84% know how to change their privacy settings on Facebook.	67.4% do not know how to change privacy setting on Facebook
Digital citizenship	68% strongly agree and 32% are not sure or disagree with the statement "I	39% strongly agree and 35% strongly disagree with the statement "I	36% strongly agree and 52% agree with the meaning of digital citizenship	75.3% understand what it means to be a responsible digital

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	understand what it means to be a responsible digital citizen"	understand what it means to be a responsible digital citizen"	and what is means to be a digital citizen.	citizen

c. **SKILLS GAP**

Our report brings forward a series of challenges that must be addressed by secondary schools. Skills gap for each target group is listed in the table below.

Table 7 – Skills Gap Teachers and Students

TEACHERS	STUDENTS
Identifying and reporting fake news	
Reporting a fake website or recognizing if an online source or a website is reliable	
Recognising victims of cyberbullying	
Legally re-using online information	
Staying safe online and knowing what happens to the information posted/shared online	
Innovative ways of using digital technologies in teaching	
Online self-promotion and event promotion	
Creating audio and video content using digital devices	
	Understanding the idea of being a responsible digital citizen
	Using the library's online catalogue to find useful resources to support studies
	Citing an online reference in essays

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4. CONCLUSION

Technology has run way ahead of society. The speed of innovation is now much faster than the speed at which scholars, educators and governments can move, which means that new technology is often in widespread use long before we all come to think about its impact, the changes we need to make and how to adapt to the new business and economic models. We urge European governments to act with expediency and make training on digital technologies a mandatory part of teachers' training to enable them to cope with the rapid change of technology. Training should be mandatory and continuous to help teachers update their knowledge and keep up with the new technological developments. The consortium understands that not all pupils have an appetite for technology but believes that only by training our teachers will we be able to make sure that all pupils have basic digital skills that will enable them to lead a normal life in a digitalised world. Opening teachers' horizons will help rejuvenate education and will lead to new ways of including digital technologies in the curriculum.

A prerequisite for building a digital literacy mind-set in schools is the investment in infrastructure and technological equipment. European schools have to re-evaluate their priorities and understand that investing in digital infrastructure, maintenance and technical support is vital. We recommend allocating extra budget to schools to invest in infrastructure, technical support, new technology and training for staff and students. Moreover, as far as digital literacy in schools is concerned, it is crucial to bear in mind the skills mismatch that is observed between education and the labor market. Stronger links between schools and the industry must be cultivated and students should be educated from an early age to cope with tomorrows' demands in their professional life.

In all the European countries there are fragmented digital strategies and actions that have been implemented so far, with mixed results. The need for continuity of a digital strategy and a specific structured action plan for digital actions are of great importance. Online safety campaigns are also a priority, police and schools should work together to prepare students for a life online and to tackle online crime. More attention should be given to preparing both teachers and students to protect their data and recognise and combat the digital threats that they might encounter online.

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We are not advocating for a digital education model only because it is undeniable that students must be exposed and encouraged to learn by exploiting both traditional and modern technologies that shape the world in which we live. The National Curriculum must be geared towards the cultivation of skills such as collaboration, experimentation, development of critical and computational thinking, abstract thinking, and structured problem solving. The computer as a tool should complement and not completely replace other teaching methods or tools that are proven to help students' mental development. Teachers must be able to keep the balance between traditional and modern educational approaches to produce multilaterally developed students.

Implications for practice

A key implication of our research is the importance of a new digital mind-set in schools. Creating and nurturing an organisational culture of good practices exchange in schools, and constant making sure teachers have access to up to date training should be a priority for all European countries. For those sceptical or agnostic about using digital technologies extra support should be in place to open their horizons and through training give them time to understand that the advantages of using digital technologies in teaching outright the disadvantages. We believe that the reluctance of some teachers to use of digital technologies in the classroom derives fundamentally from their lack of knowledge.

Further research

Our report identified a number of gaps in our knowledge around digital literacy that would benefit from further research. Future studies should focus on:

- In-depth exploration of how digital technologies enrich teaching and transform students' learning experience, Have digital technologies really reinvigorated teaching?
- More longitudinal studies are needed to test the long-term effect of using digital technologies in teaching,
- Research on cost-benefit analysis of training teachers to identify what is the best way of training teaches in the use of digital technologies,
- More research is needed to capture teachers' and students' experiences with digital technologies in the classroom.
- Research on more efficient and educative usage of social media is also needed.

The main limitation of our report is that it is based on the participants' self-report of the use of digital technologies. We asked secondary school teachers and students to reflect on and self-assess their use of digital technologies in the classroom and in personal life and we are aware that their self-assessment may be bias. Future research should also test teachers and students digital skills and compare their perceived assessment to their actual level of digital literacy.

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