



Need analysis research
on educational innovation and digital skills
development in school curricula in the Covid 19 and
post-Covid 19 era

BET! Intellectual Output 1
EU Report





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Introduction

The digital revolution has transformed and is transforming our daily lives and the way people interact and organize to reach common goals. This is particularly true for younger generations: the way they interact, access information, communicate with each other and learn has tremendously changed. But so far, the majority of school classrooms have not been at the forefront nor the main stage of this revolution. Especially in the countries touched by the BET! project, teaching and learning processes in the formal education sector remain largely untouched by this transformation. According to a 2018 OCDE study¹, less than 40% of the teachers felt ready to use digital technologies in the teaching process, with big differences from one EU country to another.

Today, 20 years after the Internet entered massively in EU households, “Generation Z” digital natives experience a recurrent discrepancy in the way they use and value digital technologies to learn and increase their knowledge and skills outside schools and the way these technologies are (not) used nor valued in the formal educational system. Making sure educational and training processes are structured to integrate and exploit the full potential of opportunities given by the digital age is not a new issue in the educational debate. However, for some time the focus has been more on granting schools the equipment and hardware needed to step up to this challenge, rather than intervening on the human side of the equation, i.e., reinforcing the development of digital skills in teachers and educators working in the formal education sector.

If digital natives – particularly those coming from diverse backgrounds or with special educational needs - are not necessarily able to effectively use technology in educational settings, and instead would greatly benefit from learning meaningful ways to use technology for learning purposes and collaborative knowledge creation, educators at large need to be supported to embed digital competence in their teaching techniques. This is particularly true in the countries touched by the project, whose teaching staff is senior compared to other EU countries and has had poor or snatchy access to recurred and structured lifelong learning opportunities provided by the national authorities. The abrupt lockdown called across most EU countries - including Italy, Spain, Greece, and Portugal - with the sudden deployment of distance digital learning for schools of all levels has suddenly highlighted the extreme difficulties experienced by a large section of teachers to manage the digital environment and to effectively engage students, and particularly those with disadvantaged backgrounds, in online learning processes.

The BET! project wants to intervene on this issue by creating a digital framework to guide and help teachers in designing personalized digital and blended learning programs fit to reach the most vulnerable students. This will be done with a strategy combining action-oriented research, the development and testing of innovative digital tools, and by stimulating the policy dialogue on the future of education in the digital era between school practitioners and local, regional, national and EU authorities responsible for education.

The BET! project

The BET! project contributes to innovate the professional practices, skills, and knowledge of European teachers to respond properly at the challenges of the future of a global and digital society, by specifically:

1. delivering a **needs analysis research** on educational innovation and digital skills development in school curricula in the COVID-19 and Post COVID-19 era in the 4 countries involved. The research aim is to assess digital competences gaps emerged during 2020 lockdowns and identify common needs of teachers and schools (IO 1 Betting on research).

¹ TALIS 2018 Results (Volume I), Teachers and School Leaders as Lifelong Learners
https://www.oecd-ilibrary.org/education/talis-2018-results-volume-i_1d0bc92a-en

2. **designing a European Digital Curriculum** aimed at identifying the best learning strategies and the most appropriate digital and technological tools to address the formative needs of socially, economically, culturally disadvantaged students, or cognitive/emotionally vulnerable students (IO2 Betting on teachers).
3. implementing an **EU BET! Academy** (IO3 Betting on our future): a comprehensive set of online and in presence training courses and webinars for teachers on the issues of Agenda 2030, inclusive education, and ICTs applied to learning environments.

These outputs will focus on:

- A. improving teachers ICTs skills to guide and teach their students to use digital technologies creatively, responsibly, and cooperatively.
- B. providing digital resources and tools on the cross-cutting issue of Agenda 2030 – a theme chosen because of the role that the agenda 2030 can contribute to the understanding of the present and future implications of the COVID-19 pandemic.

The BET! project aims to produce the following lasting impacts at local, national and EU level:

- strengthening the schools' management and the teachers' skills to innovate the learning and teaching processes.
- innovating the regional and national strategy for the promotion of GCE into the curricula.
- reinforced connections and networking among CSOs, schools, municipalities, and other local entities to guarantee the sustainability and wider implementation of the digital practices.
- provide a unified framework at EU level to build a transnational community of teachers (the BET! Community) that would have a digital space to interact on the specific challenges.
- entailed with adapting their teaching styles and methods to the digital environment.
- inform EU-level decision makers (namely, MEP) with the BET! Project results to stand as example of a fruitful adaptation of teaching to the new digital era.

IO1 - A new era for teaching? Need analysis research on educational innovation and digital skills development

Within the BET! project, the first Intellectual Output that was developed was the need analysis research on educational innovation and digital skills development in school curricula in the COVID-19 and Post COVID-19 era. The aim of the research was to collect tailor-made information helpful for the development of the Digital European curricula (IO2) but also to provide evidence to influence policy at local, national, and European level.

The research axes were the following 8, each of them presented in a respective chapter in this report:

1. The impact of COVID-19 into the educational system, with a focus on formative needs of vulnerable students.
2. Teacher competence frameworks and learning field of digital education.
3. Digital education approaches and practices into the curricula at European level.
4. The formative needs of teachers and educators and their training habits (most used platforms and channels).
5. Relations between digital technologies and teaching; risks and new opportunities.
6. Development of effective digital learning environments for vulnerable students.
7. Examples and good practices of digital tools and materials and cutting-edge pedagogies for the digital environment.
8. National/ European policies in the field.

Research was conducted through a mixed-method approach and sequential explanatory design, including quantitative data and qualitative data collection. This variety of methods allowed us to both measure and explain digital education gaps and opportunities in the four countries involved. With regards to the research tools utilized, the online questionnaire designed was the main tool of the research, while the desktop research and the interviews were used to deepen and contextualise the findings of the online survey.

The questionnaire was prepared on a non-formal basis and the answers are given on a personal perspective and do not necessarily reflect the view of the schools.

A. The BET! Online Survey - Questionnaire

The use of a quantitative research tool was decided to allow for highlighting general trends². More specifically a cross-sectional study research type was applied due its suitability for researching opinions and attitudes of specific groups on an area of interest or a topic³. The online survey was used to gather a significant number of responses (expected: 100 per country), to measure the digital gaps and practices in each of the project countries and compare country results.

Educators in formal education, including teachers and school directors, and educators in non-formal education, working with students from 11 to 15 years old, were the target of the online survey.

Data collection

A structured electronic questionnaire was developed as the main research tool for the purpose of the BET research. The questionnaire consisted of 8 sections. The first section is utilized for the gathering of demographic data for the sample, while the other 7 sections derive from the respective research axes of the BET research. The online survey was launched on the 25th of June 2021 and closed on the 20th of August 2021.

Data analysis

Qualtrics software was used for the analysis of the data collected. After data collection, a data cleaning process followed, excluding from the analysis all responses with a questionnaire completion rate <60%. As the number of responses gathered in each of the four participating countries was not balanced, especially for the analysis of the responses for the EU report, the answers of the individual countries were weighted, so that all countries weigh the same, irrespective of the number of participants in each country.

Survey Sample

Cumulatively for the 4 countries of the project, after data cleaning, 515 responses to the online survey were gathered. 109 of them were from Italy, 100 from Greece, 205 from Romania and 101 from Portugal. With regards to the demographic of the participants in our survey, 85.4% of them were teachers, 10.3% were head teachers/managers/members of the leadership team, 3.8% were non-formal educators and 3.1% identified as “other”. 90.8% of the respondents worked in the public sector and 9.2% worked in the private sector. Furthermore, 43.9% of the respondents worked in primary education and 71.4% of the respondents worked in secondary education. Responses from different regions of the 4 countries were collected, with a big percentage of the respondents working during the last school year in Toscana region for Italy (75.2%), in Attica region for Greece (48%), Sud-Est for Romania (35.1%) and Área Metropolitana de Lisboa for Portugal (54.5%).

Other demographic characteristics of the sample include age distribution, with almost half of the respondents (45%) being 45-54 years old, 24% being over 55 years old, 24% being 35-44 years old and 8% being 18-34 years old, and respectively years of working experience on that role, with almost half of respondents, 47.8%, having more than 20 years of experience, 14.7% having 16-20 years of experience, 15% having 11-15 years of experience, 12% having 6-10 years of experience and 10.4% having less than 5 years of experience.

Finally, with regards to educational attainment, 1.9% of the respondents had something lower than a bachelor degree, 39.5% of the respondents had a bachelor degree, 53.1% of the respondents had a master degree and 5.6% of the respondents had a PhD degree.

² Creswell, J. (2016). *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research*. Athens: Ion [in Greek]

³ Fraenkel, J. R., & Wallen, N. E. (2007), *How to design and evaluate research in education* (6th ed.). McGraw-Hill international edition.

B. The BET! Desktop Research

The desktop research was divided in two main phases:

- **Preliminary:** a preliminary analysis of main sources of knowledge, related projects and research about digital needs and skills for schools and teachers in Europe, to develop the questionnaire.
- **Final:** a comprehensive review of published research, policies, best practices to contextualize the online survey findings.

C. The BET! In-depth Interviews

Qualitative 1-to-1 semi-structured interviews helped explain underlying reasons of quantitative data through detailed descriptions of teachers' and stakeholders' experiences, feelings and perceptions and deepen on best practices.

The interviews of the BET research were conducted during September - October 2021. We would like to cordially thank for their participation:

- Dragos Apostu, Digital Expert of the “Digital Teacher Program” (Romania)
- Theodora Asteri, Coordinator at Department A - Educational Innovation and Inclusive Education - Special and Inclusive Education Unit, Institute of Educational Policy (Greece)
- Andrea Benassi, Researcher at INDIRE - National Institute for Documentation, Innovation and Educational Research (Italy)
- Isabel Catarino, Teacher in secondary education (Portugal)
- Laura Fedeli, Associate professor -Department's delegate for e-Learning -Department of Education Science, Cultural Heritage and Tourism University of Macerata (Italy)
- Alessandro Fusacchia, Deputy of the Italian Parliament and member of Culture and Education Commission (Italy)
- Rita Giancotti, School manager of the Istituto Comprensivo Statale di Poppi (Italy)
- Dimitris Gkatzos, Head of Environmental Education, Directorate of primary education of NW Athens (Greece)
- Dimitris Kolokontronis, President, Scientific Association for the Promotion of Educational Innovation (Greece)
- Vasileios Makrakis, University Professor of ICT in Education, Department of Primary Education, University of Crete, UNESCO Chair on ICT in Education for Sustainable Development (Greece)
- Catalina Neagu, Director of Secondary School of Nuci Village, Ilfov County (Romania)
- Jorge Nunes, Former school manager (Portugal)
- Gratiela Petcu-Director of Secondary School ”N.I.Jilinschi” of Vernesti Village, Buzau County (Romania)
- Luísa Paixão, manager of a teachers training centre of a teachers' union (Portugal)
- Alexandra Rodrigues, Teacher in secondary education (Portugal)
- Filipe Santos, Digital education expert (Portugal)
- Panagiota Souridi, Educator of Philology, 3rd Gymnasium of Argiroupoli, (Greece)

Chapter 1

The impact of Covid-19 into the educational systems

The impact of Covid-19 has been a catalyst for countries' education systems, acting as an accelerator to the adoption of digital education practices. In this first chapter of this report we will try to analyse this impact, focusing more on the needs of students, especially vulnerable students.

However, the interpretation of the conclusions of this chapter should be done with care, taking into account the differentiation of the terms "distance learning", a term that is closer to the Covid-19 school experience, and "digital education", that acts as an umbrella term. More specifically, in the context of this research, we define as *distance learning* a mode of teaching and learning characterized by separation of teacher and learner in time and/or place for most part of the educational transaction, mediated by technology for the delivery of learning, while we define as *digital education* the use of digital tools and technologies during teaching and learning, both at school and for homework.

The impact of Covid into the educational systems

More than 188 countries, encompassing around 91% of enrolled learners worldwide, closed their schools as an effort to eliminate the spread of Covid-19⁴. On average across the 30 countries with comparable data for all levels of education, pre-primary schools were closed for 55 days, primary schools for 78 days, lower secondary schools for 92 days and upper secondary schools for 101 days between 1 January 2020 and 20 May 2021⁵. Especially for Western Europe from March 2020 to February 2021 schools were fully closed for 52 days, partially closed for 37 days and fully open for 87 days, while for Eastern Europe and Central Asia schools were fully closed for 59 days, partially closed for 43 days and fully open for 62 days (weighted average).⁶

Recognising the serious impact of school closures on the learning and well-being of students, many countries adjusted their strategies concerning school closures as the pandemic evolved.⁷ At least 463 million – or **31 per cent** – of schoolchildren worldwide could not be reached by digital and broadcast remote learning programs enacted to counter school closures.⁸

Challenges during the transition to online/distance learning

From the BET survey it came up that teachers faced a wide range of **challenges** when switching to online/distance learning, with the most commonly stated ones being keeping all **pupils motivated and engaged** selected by 41.5% of the respondents, **increased workload and stress working from home** that followed with 40.1%, involving pupils from **socially disadvantaged homes** with 29.9%, pupils' **access to digital tools** (devices, computers, softwares...) with 29.1%, pupils' **access to a stable internet connection** with 27.8% and tiredness/fatigue of students with 26.3%.

Tapping into relative data to explain the result on pupil's access to a stable internet connection, we see that according to the [International Telecommunication Union \(ITU\) World Telecommunication ICT Indicators Database](#) in all the survey countries smaller percentages of the population are using the internet, compared

⁴ OECD (2020), *The impact of COVID-19 on student equity and inclusion: Supporting vulnerable students during school closures and school re-openings*, OECD Policy Responses to Coronavirus (COVID-19), OECD Publishing, Paris, <https://doi.org/10.1787/d593b5c8-en>.

⁵ OECD (2021), *The State of Global Education: 18 Months into the Pandemic*, OECD Publishing, Paris, <https://doi.org/10.1787/1a23bb23-en>.

⁶ Unicef (2021). *COVID-19 and School Closures. One year of educational disruption*. Available at: <https://data.unicef.org/resources/one-year-of-covid-19-and-school-closures/>

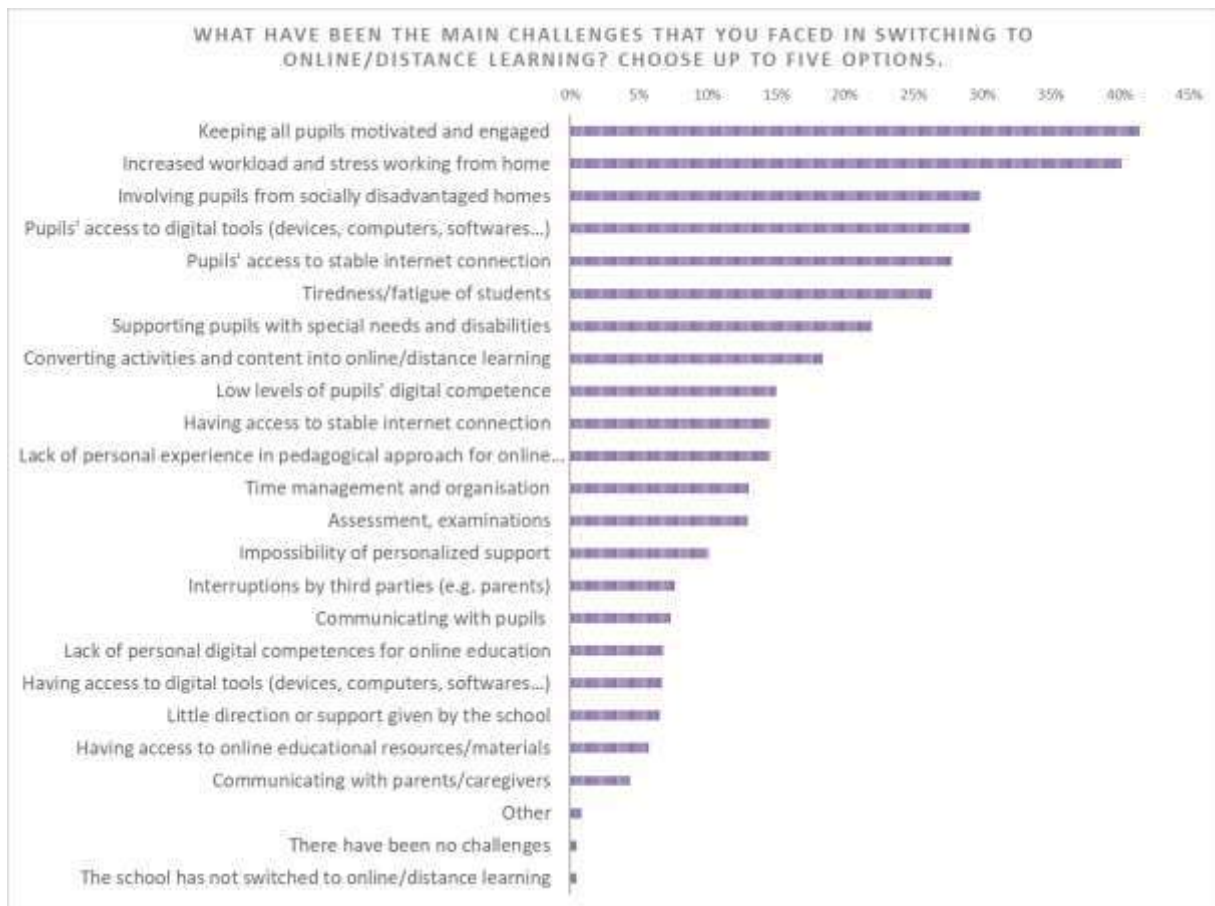
⁷ OECD (2021), *The State of Global Education: 18 Months into the Pandemic*, OECD Publishing, Paris, <https://doi.org/10.1787/1a23bb23-en>.

⁸ United Nations Children's Fund (2020). *Covid-19: Are children able to continue learning during school closures? A global analysis of the potential reach of remote learning policies using data from 100 countries*. UNICEF, New York.

to the average of the Euro area. In more detail, 74% of the population in Italy (2018 data), 74% of the population in Romania (2019 data), 76% of the population in Greece (2019 data) and 75% of the population in Portugal (2019 data), are using the internet, compared to the 87% average of the Euro area (2019 data).

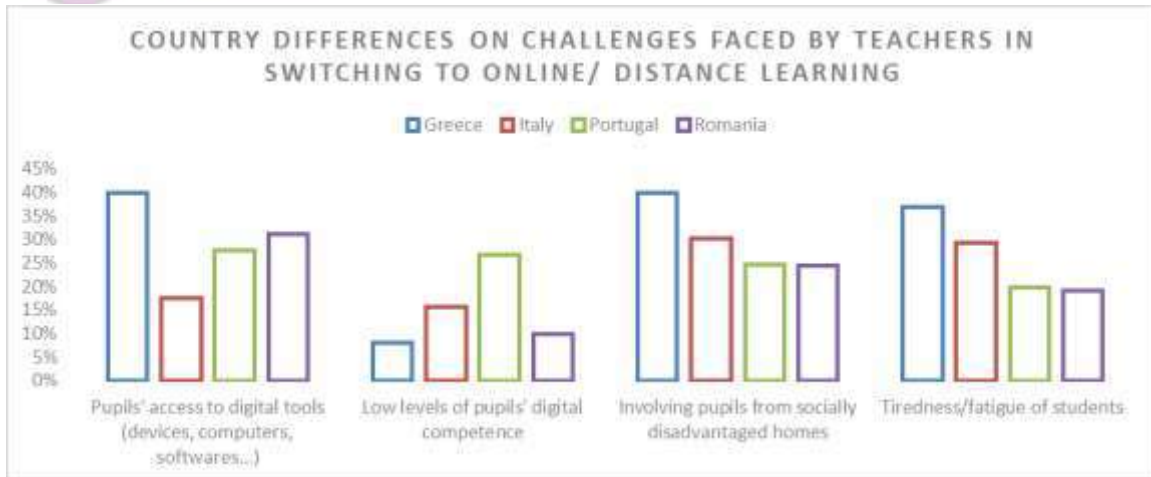
Furthermore, with regards to internet speed, according to the [Speedtest Global Index](#) (October 2021 data), in two of the survey countries, Greece and Italy, the average fixed broadband speed is lower than the global average (29.68 Mbps for Greece, 49.27 Mbps for Italy, 93.59 Mbps for Portugal and 122.3 Mbps for Romania, compared to the global average of 56.09 Mbps. With regards to the average mobile speed, the situation seems to be better, with all survey countries performing better than the global average global average of 28.61 Mbps (33.52 Mbps for Romania, 35.31 Mbps for Italy, 39.10 Mbps for Portugal, 48.88 Mbps for Greece).

<https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20201221-1>



Graph 1 – Challenges faced by teachers in switching to online/distance learning

In the following graph some interesting variations observed among the four countries of our survey are presented with regards to challenges faced by teachers in switching to online distance learning. Pupils' access to digital tools, involving pupils from socially disadvantaged homes and tiredness/fatigue of students are selected as a challenge by more teachers in Greece compared to the other countries. Same goes for low levels of pupils' digital competence, which is selected by more teachers in Portugal as a challenge compared to the other countries

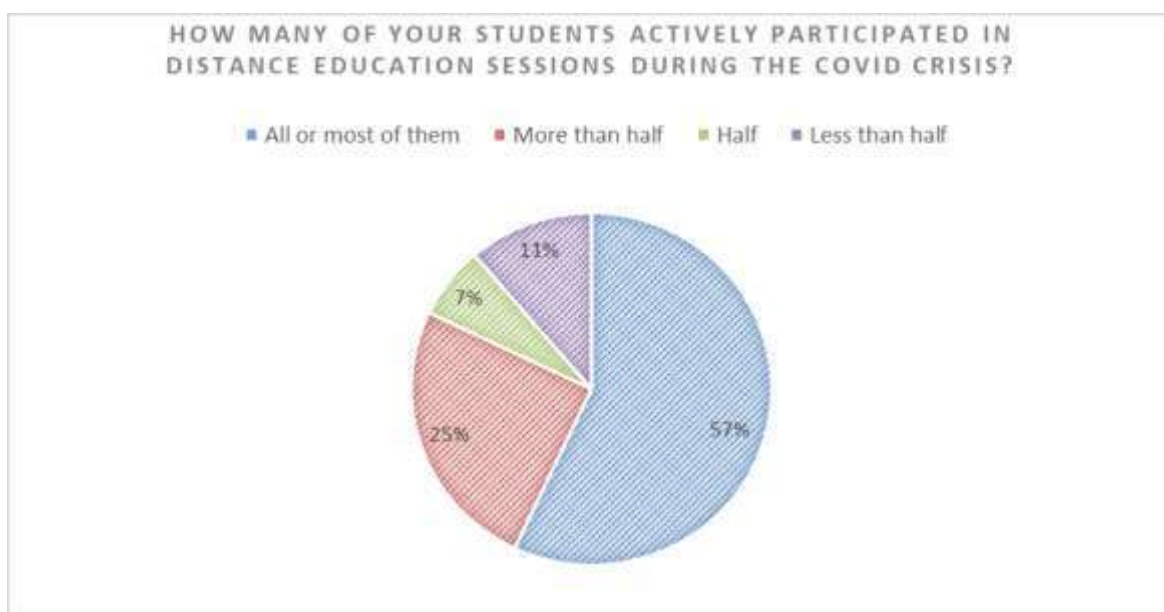


Graph 2 – Country differences on challenges faced by teachers in switching to online/ distance learning

In responding to the challenge of involving students in distance education, only 17.6% of teachers participating in our survey indicated to have promptly received guidance (support, advice, training). 50.7% indicated that they received guidance, but after having to deal with the new distance education reality and 31.7% indicated that they did not receive guidance. Interestingly, the percentage of respondents who answered that they did not receive any guidance was higher for respondents with less than 5 years of experience (42%).

When asked by whom they received guidance, 34.7%, stated that they received guidance by colleagues, 24.4% stated that they receive guidance from head teachers/ managers, 14.4% from educational authorities, 13.1% from other educational institutions and 6.4% from various other sources.

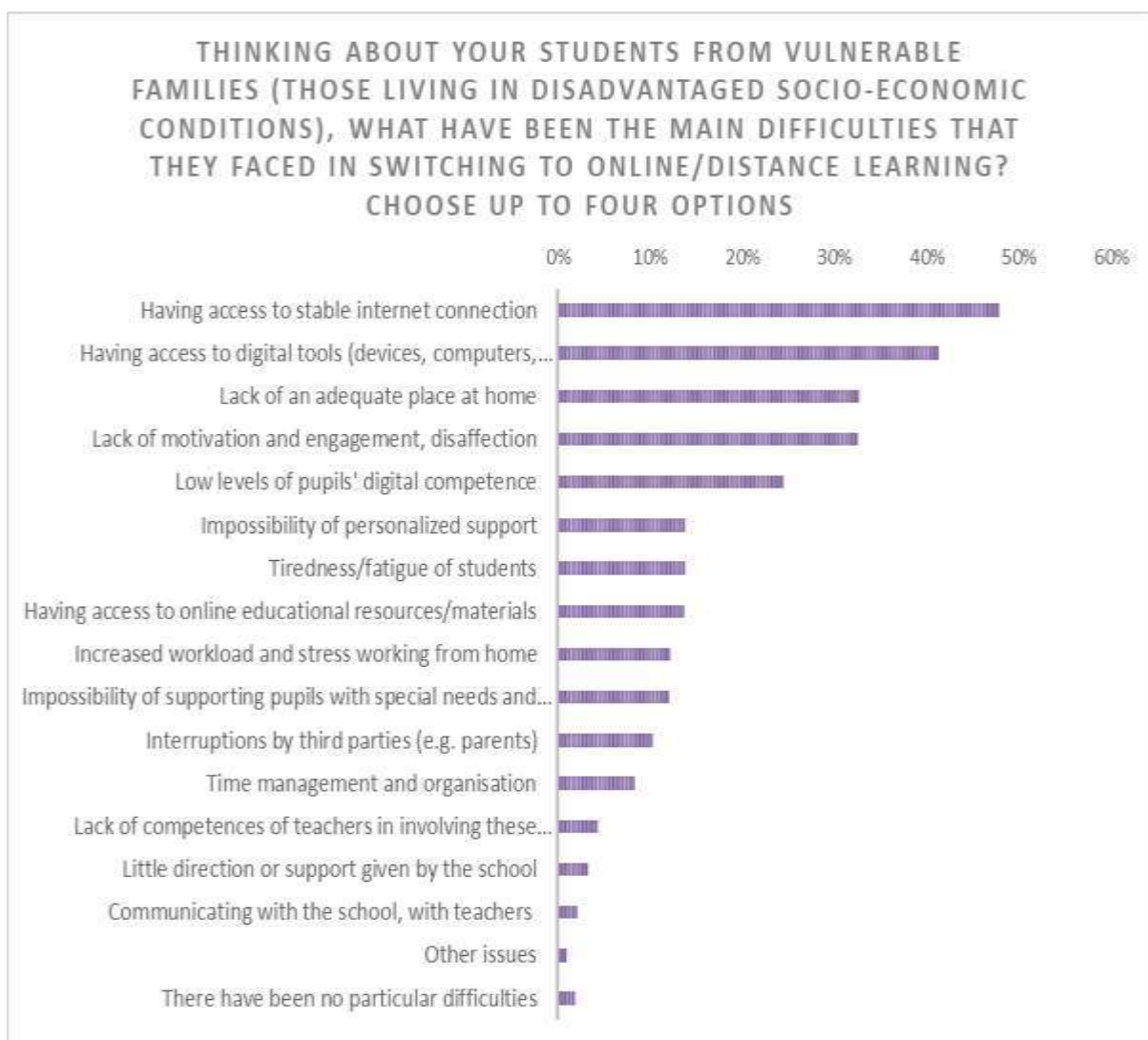
Furthermore, with regards to student participation, unfortunately not all students seemed to be actively participating in distance education, with 57% of the teachers participating in our research stating that all or most of them actively participated in distance education sessions during the covid crisis. This percentage had some variations across the survey countries (43.7% for Greece, 56.3% for Italy, 63.3% for Portugal, 64.8% for Romania). **More than 1 out of 10 respondents (11.3%) indicated that less than half of their students actively participated in distance education sessions during the covid crisis.**



Graph 3 – Percentages of students actively participating in distance education sessions during the covid crisis.

Focusing more on **students from vulnerable families** (those living in disadvantaged socio-economic conditions), the most commonly identified **challenges** by the teachers participating in our survey were having access to **stable internet connection** (47.2%), having **access to digital tools** (devices, computers, software...) (41.3%), and **lack of an adequate place at home** (32.7%). This is also in line with PISA findings regarding discrepancies among advantaged and disadvantaged students with regards to the availability of a quiet place to study at home and a computer to use for schoolwork, as on average across OECD countries, more than 90% of advantaged students but only 69% of disadvantaged students reported having a quiet place to study at home and a computer that they can use for schoolwork.⁹

Lack of motivation and engagement, disaffection (32.5%) and low levels of pupils' digital competence (24%) followed in popularity in our survey. Only 1.8% of respondents stated that "There have been no particular difficulties". Furthermore, interestingly enough, only 4.3% chose lack of competences of teachers in involving these students and only 3.3% chose little direction or support given by the school.



Graph 4 - Challenges faced by vulnerable students in switching to online/ distance learning

⁹ OECD (2019), PISA 2018 Results (Volume II): Where All Students Can Succeed, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/b5fd1b8f-en>.

With regards to **whether the issue of vulnerable students' inclusion in distance education was tackled effectively in their school**, almost half (48.6%) of the teachers indicated that the response was partly effective, 32.3% indicated that it was very effective. On the other hand, there was also an average of 15.7% who indicated that the response was not effective, with the percentages having some variations amongst the participants of the different countries (15.8% for Italy, 25.6% for Greece, 14.4% for Portugal and 6.9% for Romania). Interestingly, only 3.4% indicated that this was not a concerning issue in their school.

Chapter 2

Teacher competence frameworks and learning field of digital education

The **European Framework for the Digital Competence of Educators** (DigiCompEdu)¹⁰ is a framework for the development of educators' competencies needed to seize the potential of digital technologies for enhancing and innovating education. The framework is aimed to help Member States in their efforts to promote the digital competencies of their citizens and boost innovation in education, whilst it is also offering a common frame of reference, language and logic.

The DigiCompEdu proposes 6 areas of competencies that fall into 3 larger categories, educators' professional competencies, educators' pedagogic competencies and learner's competencies. For the needs of BET we will focus on the main DigiCompEdu category, educators' pedagogic competencies and the 4 skill areas it includes: Digital resources, Teaching and Learning, Assessment, Empowering Learners.

The following figure represents the 6 areas of the DigiCompEdu. The circle in the centre contains the areas which are of main interest for the BET project.

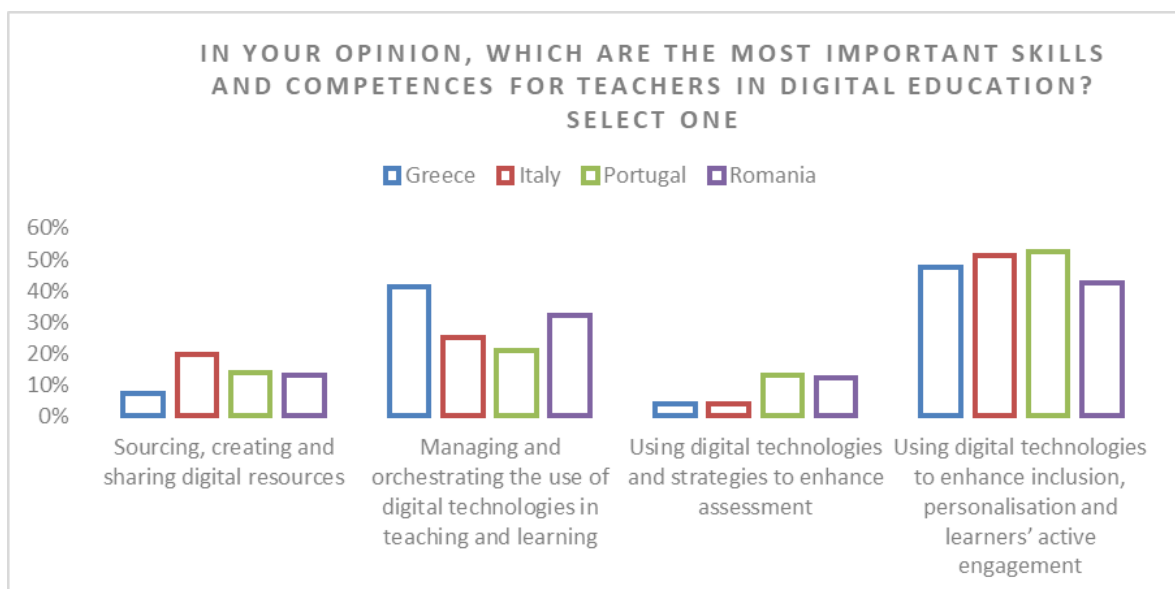
¹⁰ Punie, Y., editor(s), Redecker, C., European Framework for the Digital Competence of Educators: DigCompEdu, EUR 28775 EN, Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-73718-3 (print), 978-92-79-73494-6 (pdf), doi: 10.2760/178382 (print), 10.2760/159770 (online), JRC107466. <http://dx.doi.org/10.2760/178382>



Figure1. The European Framework for the Digital Competence of Educators (DigiCompEdu)

Important teacher competencies in digital education

When the participants in our research were asked to select **which teacher competencies they consider being the most important in the field of digital education**, the most popular choice was the use of **digital technologies to enhance inclusion, personalisation and learners' active engagement**, with a percentage of 48.5%. Managing and orchestrating the use of digital technologies in teaching and learning followed with a percentage of 29.8%, while the other two skill areas gathered smaller percentages. Sourcing, creating and sharing digital resources was chosen by 13.5% of respondents and using digital technologies and strategies to enhance assessment by 8.2% of respondents.



Graph 5 – Most important skills and competencies for teachers in digital education

When asked about specific skills in the skills areas that they had selected, **differentiation and personalisation**, defined as using digital technologies to address learners’ diverse learning needs, by allowing learners to advance at different levels and speeds, and to follow individual learning pathways and objectives, was chosen as the most important skill (22.3%), followed by **accessibility and inclusion**, defined as ensuring accessibility to learning resources and activities, for all learners, including those from disadvantaged backgrounds and vulnerable students (16.8%) and **teaching**, defined as planning for and implementing digital devices and resources in the teaching process, so as to enhance the effectiveness of teaching interventions and experimenting with and develop new formats and pedagogical methods for instruction, followed with 13.6%.

Teacher trainings on digital education

The majority of the participants in the BET survey (58.3%) had participated in a training on the use of digital technologies in teaching and education during the last year, while 24.8% had participated in a training on digital technologies. 28.8% indicated that they did not attend any training on these topics. Some interesting variations were observed amongst the different countries, with 76% of the participants of Greece having participated in a training on the use of digital technologies in teaching and education during the last year, compared to 47.7% of the participants in Italy, 54.5% in Portugal and 55.1% in Romania.



Graph 6 - Participation in digital training courses during the last year

Especially for Portugal, as comes up from the BET National Report for the country, half of the teachers have started to introduce these tools in the classrooms and overall, 90% of teachers intend to continue investing in more digital education, introducing new pedagogical methodologies that motivate students.

These trainings were provided by an Educational Institution - Ministry of Education or related authorities, agencies (45.2%), or by a private training organisation (15.7%), by an NGO (10.1%) or by other stakeholders (5.9%). Once again, some interesting differentiations among the countries were observed, as presented in the following graph, with educational institutions (Ministry of Education or related authorities, agencies) undertaking a bigger percentage in the case of Greece comparatively to the other countries (70% for Greece, 33% for Italy, 41.6% for Portugal, 36.1% for Romania). Also the role of NGOs seemed to be more enhanced for Romania, compared to the other countries (22.4% for Romania, 5% for Greece, 11% for Italy, 2% for Portugal).

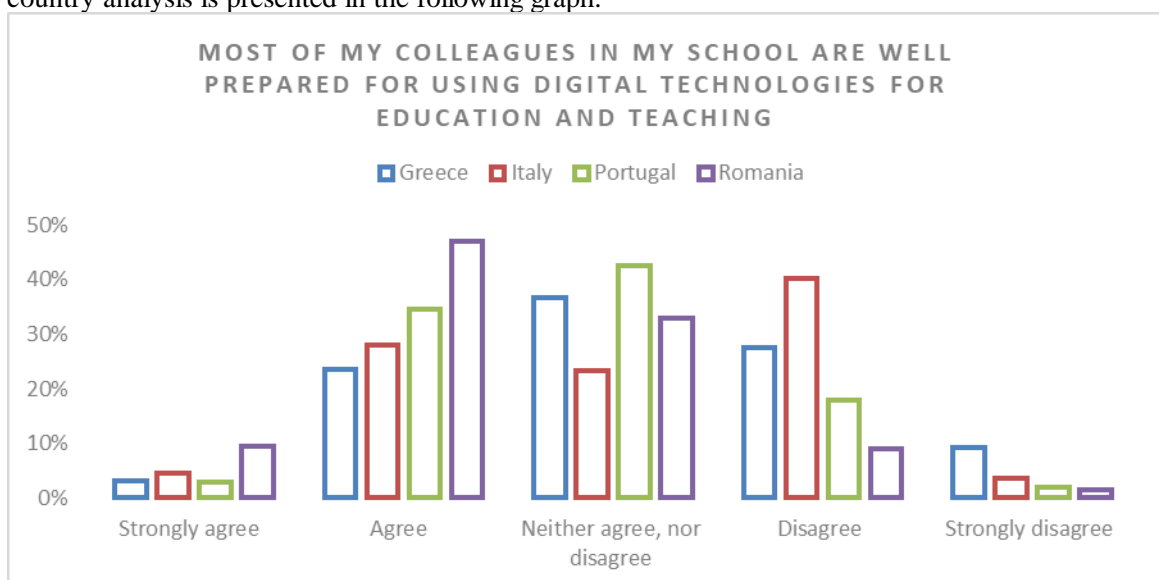


Graph 7 - Digital training courses providers

Teacher preparedness for digital education

But how prepared do teachers actually feel for using digital technologies for education and teaching? **More than half of the participants in our survey (51.5%) agreed that they feel well prepared for using digital technologies for education and teaching**, and 22.4% even strongly agreed to this statement. 18.6% neither agreed nor disagreed, 6.5% disagreed and 1.1% strongly disagreed. Interestingly though, when confronted with the question “Most of my **colleagues** in my school are well prepared for using digital technologies for education and teaching”, the agreement percentages drop. In this case, 33.3% agreed with the statement and only 5.1% strongly agreed, while 33.9% neither agreed nor disagreed. In this case **almost 1 out of 4 (23.7%) disagreed** and almost 4.1% strongly disagreed.

While in the case of their own preparedness, no important country differences were observed, when asked about their colleagues, teachers from Romania seem to be more confident about their colleagues. The country analysis is presented in the following graph.



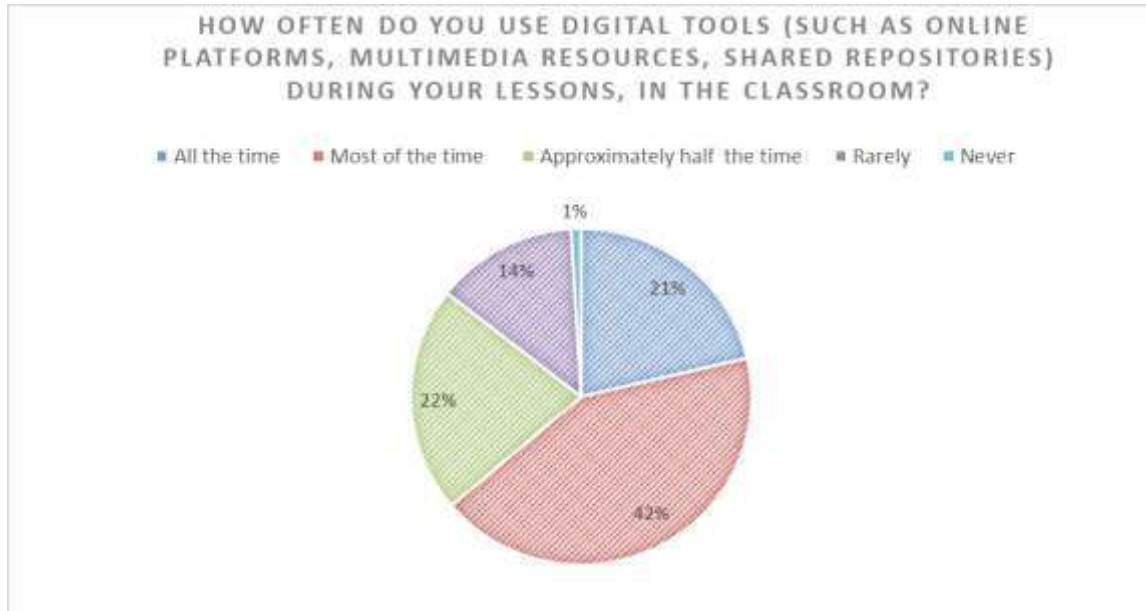
Graph 8 – Teachers’ colleagues’ preparedness to use digital technologies for education and teaching

Chapter 3

Digital education approaches and practices

Use of digital tools inside the classroom

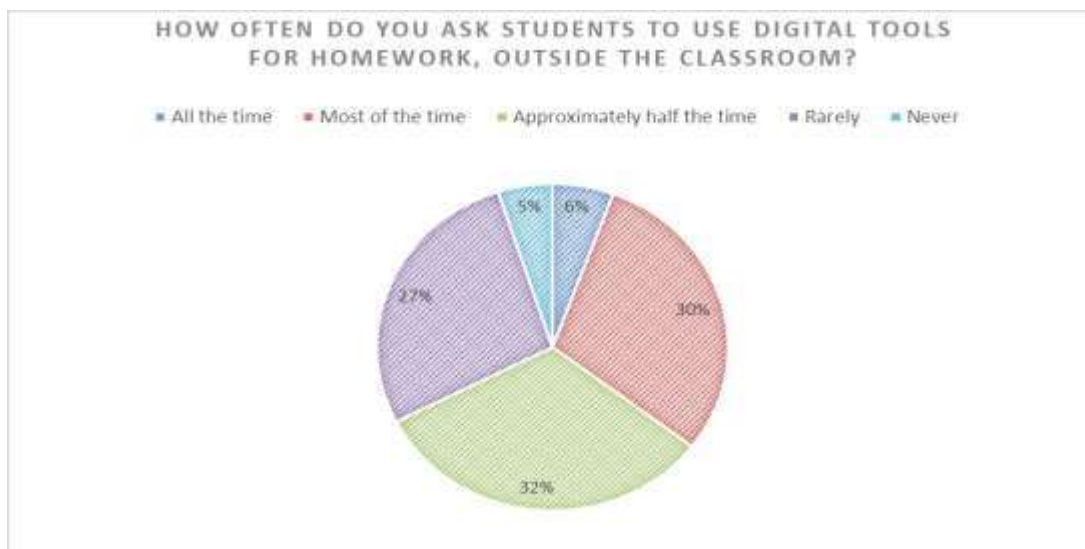
The use of digital tools seemed to be widespread among the participants in our survey, with **more than half of them** (63%) indicating that they **use digital tools inside the classroom** (such as online platforms, multimedia resources, shared repositories) **most of the time or all the time**. This percentage was even higher in the case of Romania (71.2% compared to Greece-Italy-Portugal average of 61.3%).



Graph 9 - Percentages of digital tools utilization in the classroom

Use of digital tools outside the classroom

Comparatively, for asking students to **use digital tools for homework**, outside the classroom, these percentages were lower, with **more almost one third of them** (35.4%) indicating that they do it **most of the time or all the time**.



Graph 10 - Percentages of digital tools utilization outside the classroom

Most frequently used digital tools by teachers

When teachers from the different survey countries were specifically asked to indicate which digital tools/platforms/ channels they use the most an impressively long list was compiled.

In this list we can find platforms that are unique to each survey country, such as:

- the electronic register, Mondadori Education and Rai Scuola for Italy,
- the various platforms provided by the Greek state (like dschool.edu.gr, photodentro, etc) for Greece
- Escola virtual, #EstudoEmCasa, Inovar and Aula Digital for Portugal
- Edu.ro, Manuale Digitale, Adservio, Livresq, platforms for religion classes (such as e-religie.ro, Red-religie.ro etc) for Romania.

Other tools that were popular among the teachers were Google Suite for Italy and Romania, Google Classroom for Portugal and Cisco WebEx for Greece. Of course, the participants in our research also mention the use of other communication platforms such as Zoom, Microsoft Teams and Skype. YouTube was also popular in all project countries. E-Twinning and the platform Twinspace were mentioned in Romania, Greece and Italy. Moodle was also mentioned in Portugal and in Greece.

Finally, in this list there are also digital books, tools for creating materials (like Canva and Learning Apps in all survey countries and Microsoft Office in Portugal and in Greece), tools for creating a digital board (like Padlet in all countries and Whiteboard in Greece). And we also come across many online tools for creating quizzes and polls (like for example Kahoot in all survey countries and Mentimeter in Portugal and Romania).

Most frequently used digital tools by students

Likewise, when teachers from the different were asked what are the digital tools that students use most, they mention most of the above tools that they also use.

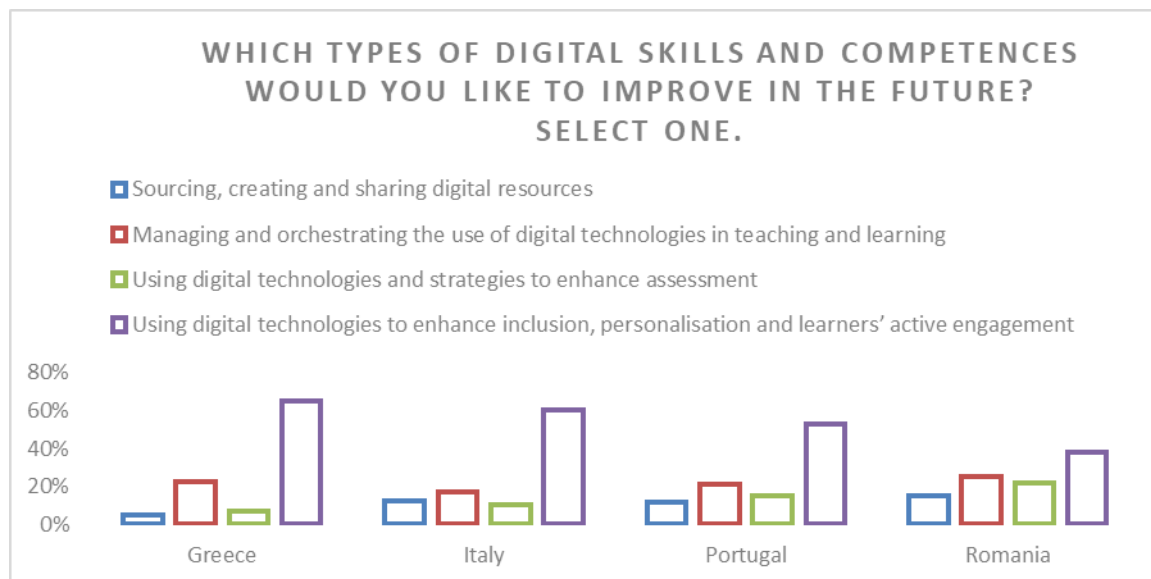
An exception is the reference to the smartphones as a communication tool by teachers in Italy and the use of social media (Instagram, Tic Toc, Viber) that was mentioned by the teachers in Greece.

Chapter 4

Formative needs of teachers and educators and their training habits

Teachers' formative needs

When asked what types of digital skills and competencies teachers would like to improve in the future, more the majority of them (53.9%) responded they would like to improve using digital technologies to enhance inclusion, personalisation and learners' active engagement. Managing and orchestrating the use of digital technologies in teaching and learning followed with a percentage of 21.4%, while using digital technologies and strategies to enhance assessment was chosen by 13.6% and sourcing, creating and sharing digital resources, chosen by 11%. This trend was followed in all participating countries, except for Romania, where the responses were a bit more balanced among the 4 skill areas.



Graph 11 - Digital skill areas teachers would like to improve

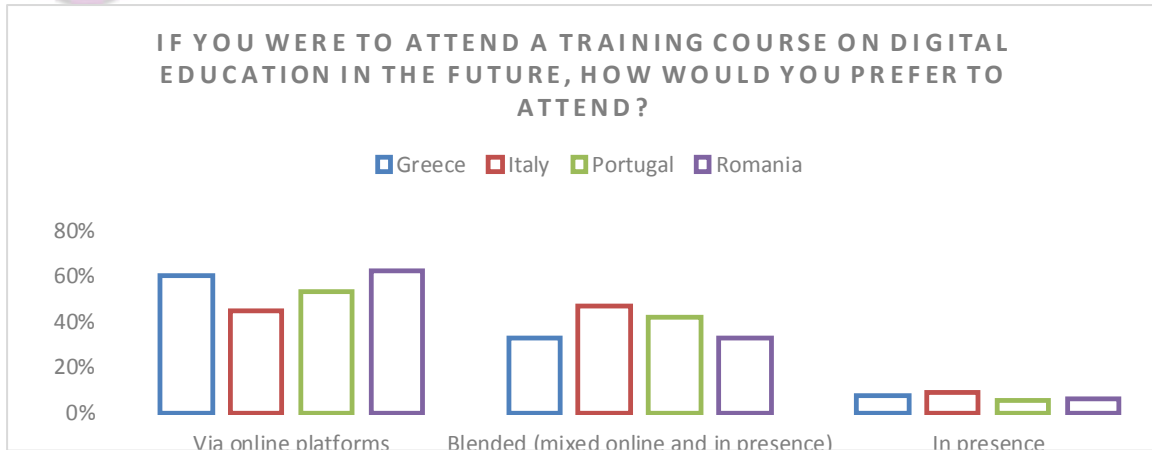
Furthermore, when asked about **specific skills** they would like to improve, within the skill areas they selected, **differentiation and personalisation** (22.1%) and **accessibility and inclusion** (19.7%) were the most popular ones. Actively engaging learners followed with an average of 12.5% and a varying popularity among the survey countries (11.5% for Greece, 21.7% for Italy, 7% for Portugal, 9.8% for Romania). Other skills that participants in specific countries seemed to be interested in were:

- self-regulated learning, defined as using digital technologies to support self-regulated learning processes with 7.3% for Greece,
- teaching with 8,5% and collaborative learning with 7.5% for Italy,
- teaching and assessment strategies, both with 8% for Portugal
- assessment strategies with 12.9%, collaborative learning with 9.3%, teaching with 8.2% and creating and modifying digital resources with 8.2% for Romania.

Teacher training habits/preferences

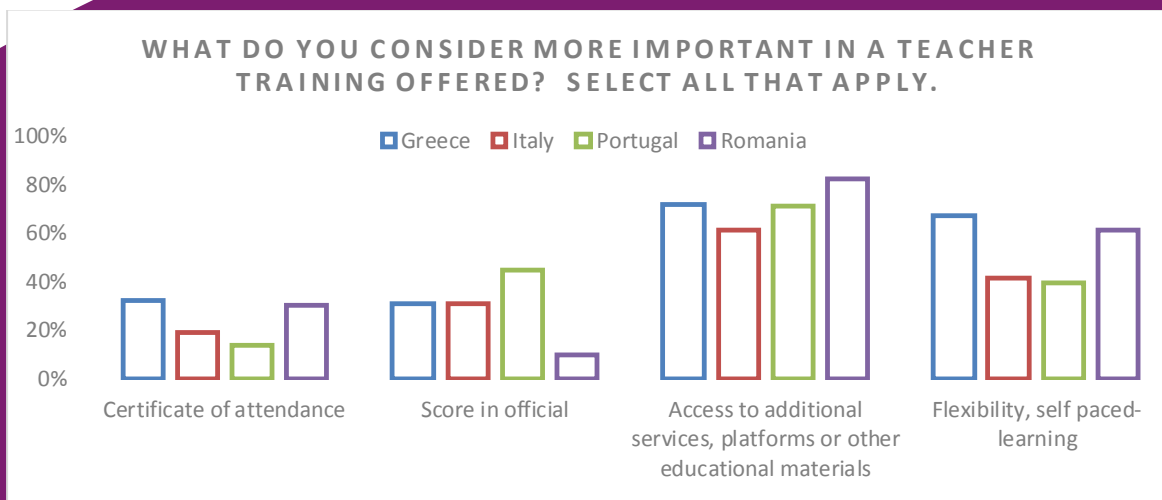
With regards to teachers' training habits/preferences for a training course on digital education, **the biggest percentage of respondents (54.9%) stated that they would prefer a training via online platforms**, 38.5% chose a blended format and only 6.7% chose an in-presence training.

Some country differences were observed, as presented in the following graph, with training via online platforms being slightly more popular for Romania (61.9%) and Greece (60%), compared to Portugal (53%) and Italy (44.8%). Likewise, the blended format was more popular in Italy (46.7%) and Portugal (42%), compared to Greece (32.6%) and Romania (32.5%).



Graph 9 - Training course format preferences (online - blended - in presence)

And when asked what they consider more important in a teacher training offered, most of them selected the **access to additional services, platforms or other educational materials** (71.8%). **Flexibility, self-paced learning** (52.5%) followed on the weighted total, having a varying importance among the different countries (67% for Greece, 61% for Romania, but only 41.3% for Italy and 39.6% for Portugal). Opinions diverged in the different countries also regarding the other two options given, score in official (31% for Greece, 31.2% for Italy, 44% for Portugal, but only 9.8% for Romania) and certificate of attendance (32% for Greece, 30.2% for Romania but only 19.3 for Italy and 13.9% for Portugal).



Graph 12- Important aspects of a teacher training offered

Finally, with regards to specific tools/resources that they would consider useful for the adaptation of the use of ICT in Inclusive and Civic Education, more than half of them (50.9%) chose a specific **training course for teachers who teach civic education**, on digital education approaches and methodologies for teaching this subject and 41.9% selected **online educational resources** on the topics. Audio visual material on the topics followed with 35.9% on the weighted total and varying popularity among the countries (48% in Greece, 35.8% in Italy, 18.8% in Portugal and 41% in Romania) and the provision of guidelines on how to conduct civic education activities with students that utilize ICT with 29.7% on the weighted total (36% in Greece, 25.7% in Italy, 29.7% in Portugal and 27.3% in Romania).

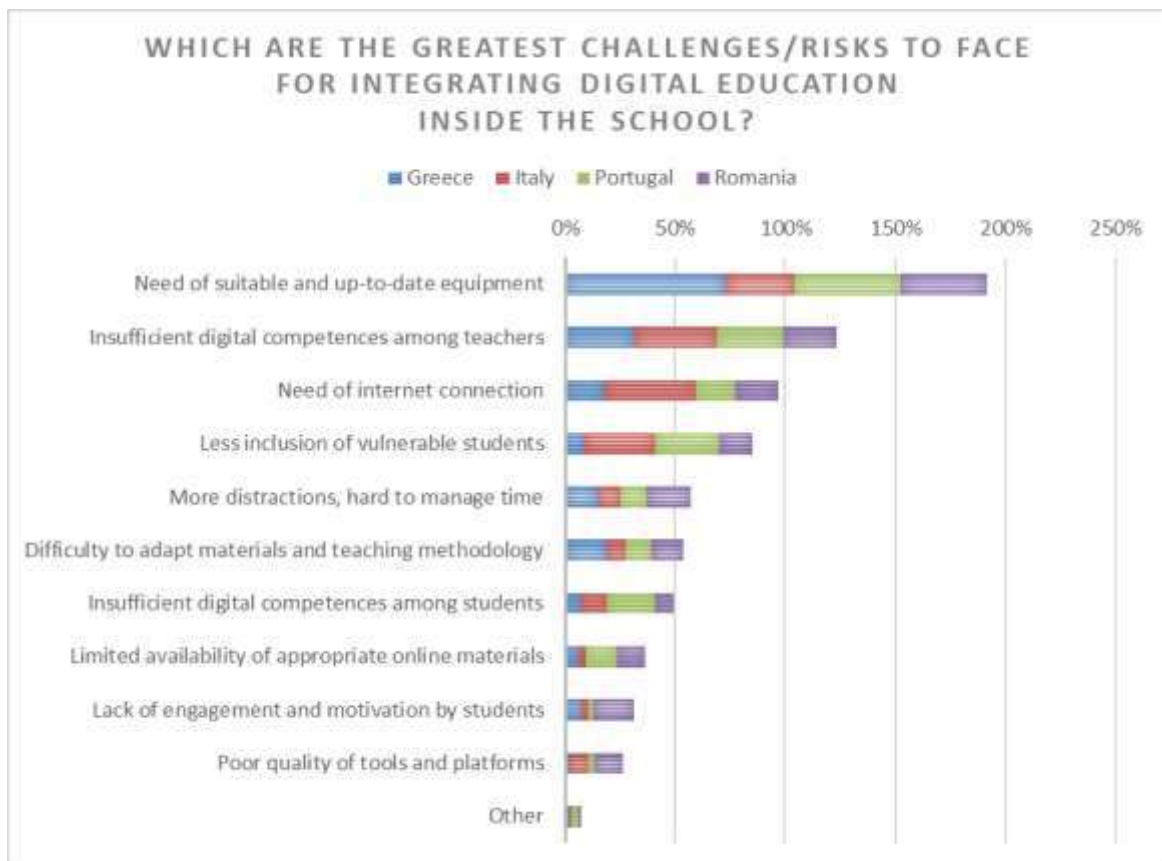


Teachers’ attitudes towards the use of digital tools in education

In general, teachers participating in the survey seemed to have a positive attitude towards digital technologies in education, agreeing that **digital tools make a positive difference on learning** (87% agree or strongly agree), that they **make learning more interesting** (89% agree or strongly agree), **teaching easier** (79% agree or strongly agree), that they **provide learning opportunities outside the classroom** (90% agree or strongly agree) and **enhance learning inside the classroom** (90% agree or strongly agree), as well as agreeing that digital tools **encourage students to collaborate even when not together** (78% agree or strongly agree).

Challenges and risks of digital education

Nevertheless, some risks and **challenges** were identified with regards to integrating digital education inside the school. Almost half of the respondents in our survey selected the **need of suitable and up-to-date equipment** (47.9%). This percentage was bigger for respondents working in public schools (50%) compared to respondents working in private schools (22%). **Insufficient digital competences among teachers** followed in popularity being selected by approximately one third of respondents (30.8%). The percentage of respondents choosing this answer was comparatively higher among participants with less than 5 years of experience (47%) and more than 20 years of experience (34%). Next in popularity was the need of internet connection (24.3%), followed by other challenges with smaller percentages, such as less inclusion of vulnerable students with 21.3%, the existence of more distractions, the difficulty of managing time (14.2%), the difficulty to adapt materials and teaching methodology (13.4%). Furthermore, in the case of distance education, also the challenges identified in chapter 1 should be taken into account.



Graph 13 – Challenges/ risks to face for integrating digital education in the classroom

On average across OECD countries in 2018, there was almost one computer available at school for educational purposes for every 15-year-old student (computer-student ratio equal to 0.8) (Figure V.5.4). In Austria, Iceland, Luxembourg, Macao (China), New Zealand, the United Kingdom and the United States, the computer-student ratio was 1.25 or more, while in Albania, Brazil, Greece, Kosovo, Montenegro, Morocco, Turkey and Viet Nam, there was only one computer available for every 4 students (ratio = 0.25) or less. All countries participating in our search were under the OECD average.¹¹

Access to the internet seems to be universal for all school computers in our reference countries (more than 9 out of 10 computers available to 15-year-olds for educational purposes at school were connected to the Internet).¹² Nevertheless, when further analysing the type of internet connection provided, according to the European Commission report “2nd Survey of Schools: ICT in Education” (2019), for primary schools 17% of students in Greece, 31% of students in Italy, 38% of students in Portugal and 52% of students in Romania, are in a school with access to the Internet via fibre optic, compared to the EU average of 32%. Same goes for lower secondary where the percentages are 30% in Italy, 51% Portugal and 54% Romania, compared to the EU average of 40%, and for upper secondary where the percentages are 34% for Greece, 47% for Italy, 57% for Romania, 57% for Portugal, compared to the EU average of 51%.¹³

Finally, when opening the discussion on the risks involved in digital education, we must also consider issues such as safety, privacy and well-being, as well as the increasing concerns related to the ‘datafication of childhood’¹⁴.

Advantages and opportunities of digital education

In the literature on ICT in education, there are many associated advantages and **opportunities** presented. Indicatively, assisting students in accessing digital information efficiently and effectively, supporting student-centred and self-directed learning, producing a creative learning environment, promoting collaborative learning in a distance-learning environment, offering more opportunities to develop critical (higher-order) thinking skills, improving teaching and learning quality, supporting teaching by facilitating access to course content¹⁵ are some of them. Specifically, for the use of digital technology for Global Citizenship Education (GCE) the advantages include: 1) possibilities for children and young people to experience global citizenship 2) a shift towards a more participatory approach 3) support for teachers’ activities¹⁶.

For the purpose of the BET survey, we separately investigated opportunities/advantages of the use of digital technologies for education for two different cases, their use in the classroom and outside the classroom. In the case of using such technologies **in the classroom**, the most popular answer choices among the respondents of our survey, where that they provide **innovative and engaging ways of teaching/learning** (35.9%), **increased engagement and motivation by students** (28.9%), **innovative**

¹¹ OECD (2020), PISA 2018 Results (Volume V): Effective Policies, Successful Schools, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/ca768d40-en>.

¹² OECD (2020), PISA 2018 Results (Volume V): Effective Policies, Successful Schools, PISA, OECD Publishing, Paris, <https://doi.org/10.1787/ca768d40-en>.

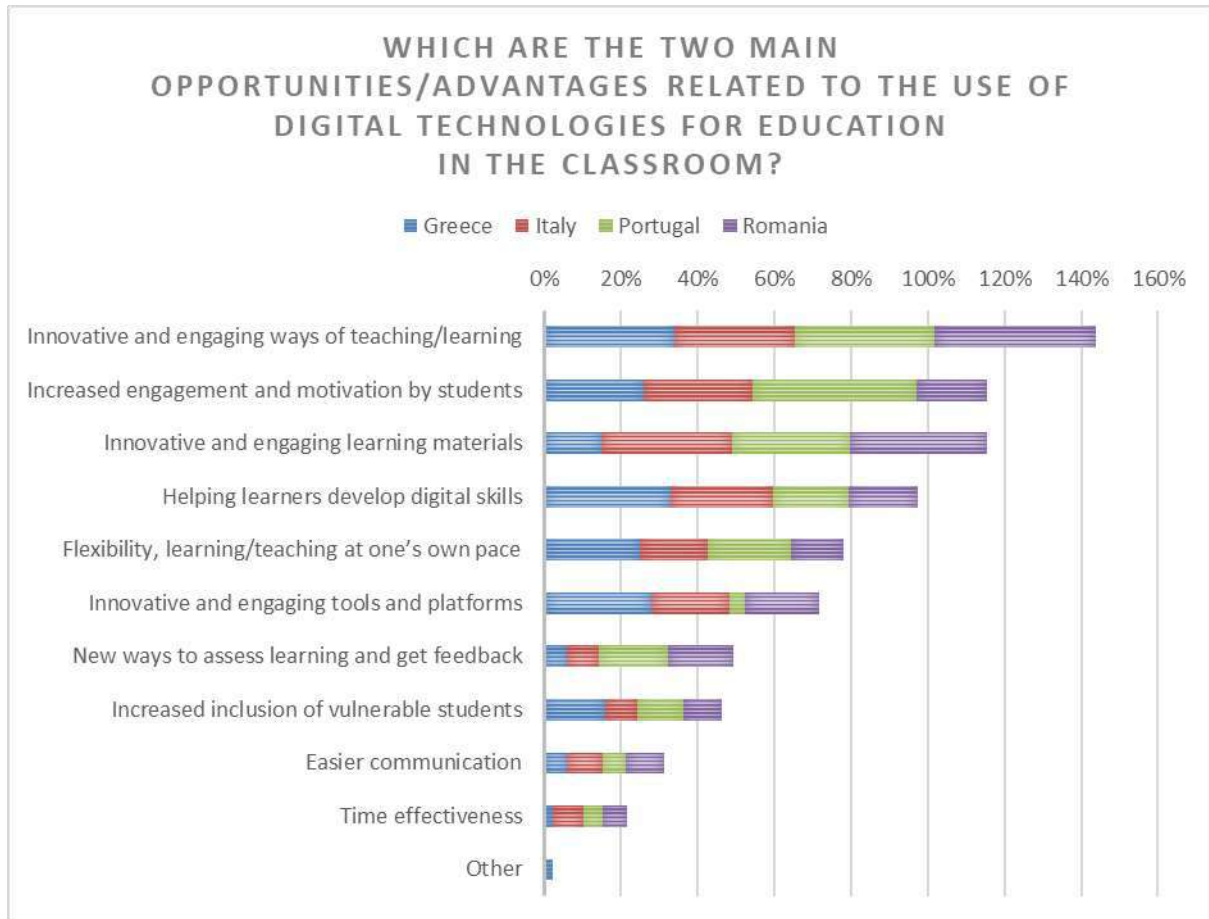
¹³ European Commission. (2019). 2nd survey of schools: ICT in Education. Luxembourg, Publications Office of the European Union 2019 ISBN 978-92-79-99675-7 doi: 10.2759/23401

¹⁴ Martínez Sainz, Gabriela & Barry, Maria. (2020). *Digital Technologies to Advance Global Citizenship Education in Schools*. 10.13140/RG.2.2.24397.05600.

¹⁵ Fu, J. (2013). *Complexity of ICT in education: A critical literature review and its implications*. *International Journal of Education and Development using ICT*, 9(1), 112-125. Open Campus, The University of the West Indies, West Indies.

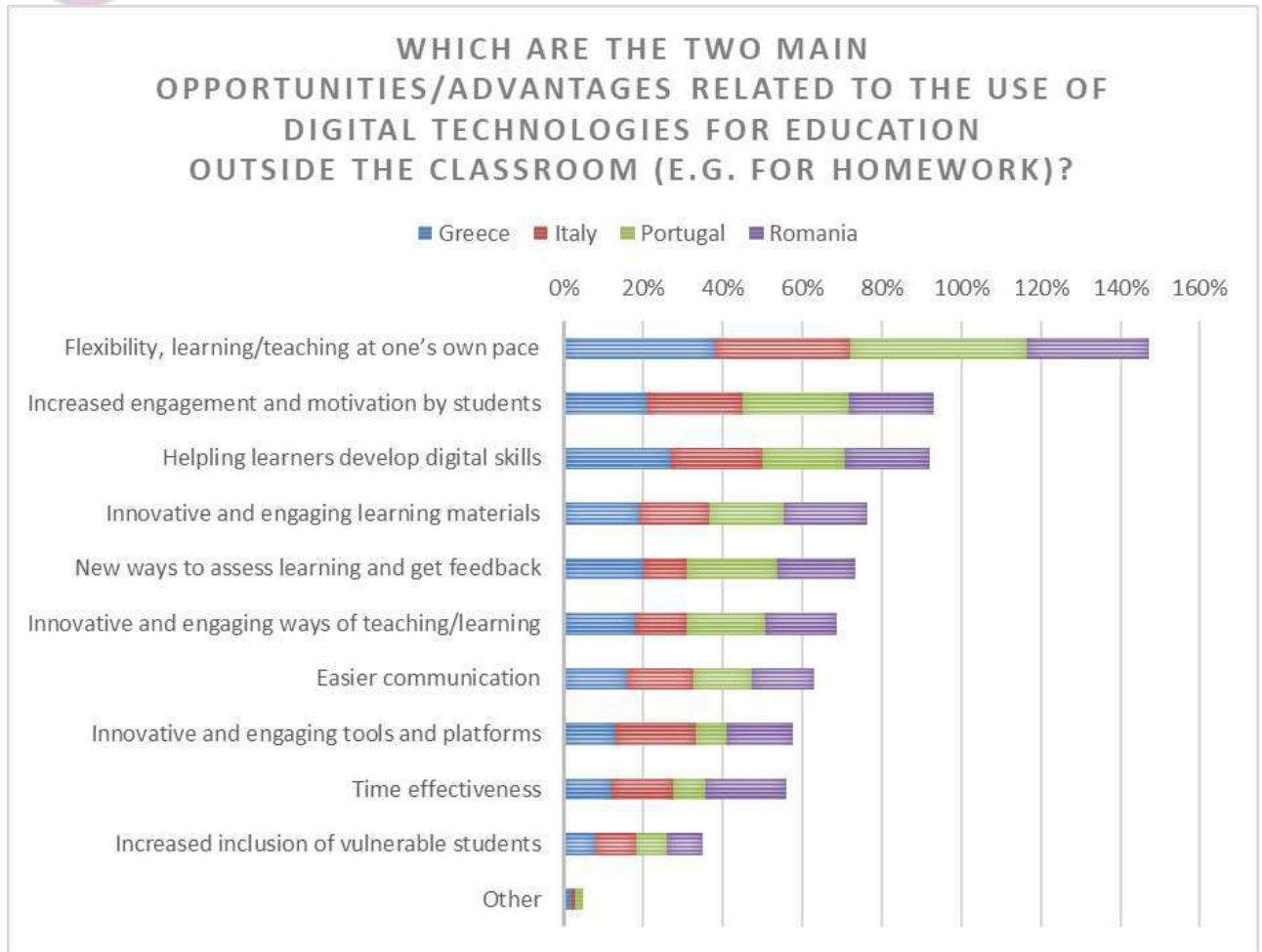
¹⁶ Martínez Sainz, Gabriela & Barry, Maria. (2020). *Digital Technologies to Advance Global Citizenship Education in Schools*. 10.13140/RG.2.2.24397.05600.

and engaging learning materials (28.8%), helping learners develop digital skills (24.4%) and flexibility, learning/teaching at one’s own pace (19.5%).



Graph 14 – Opportunities/ advantages related to the use of digital technologies for education in the classroom

As to opportunities/advantages related to the use of digital technologies for education **outside the classroom** (e.g. for homework) it goes from **flexibility, learning/teaching at one’s own pace** (36.8%), **increased engagement and motivation by students** (23.3%), **helping learners develop digital skills** (23%), **innovative and engaging learning materials** (19%), **new ways to assess learning and get feedback** (18.3%) and **easier communication** (15.7%).



Graph 15 - Opportunities/ advantages related to the use of digital technologies for education outside the classroom

Chapter 6

Development of effective digital learning environments
for vulnerable students

The importance of developing of effective digital environments for vulnerable students emerged also indirectly during the exploration of the necessary digital skills of teachers, as the related skills category “using digital technologies to enhance inclusion, personalization and learner’s active engagement” proved to be the most popular.

Digital education and vulnerable students' inclusion

The use of ICT in education can contribute to improving accessibility and expanding educational opportunities¹⁷. When asked in the BET! Survey how digital education could help **increase inclusion of vulnerable students**, teachers mostly referred to the opportunity for **personalization** (differentiated teaching), to the utilization of different **types of students' intelligence** via digital education, to the creation of opportunities for more **introvert students** to participate more actively and to the possibility for students to work on their **own pace**. A special reference was also made on the opportunity created by digital education to use text and **multimedia resources** to increase the inclusion of students who don't speak the language well.

Likewise, when asked how digital education would **cause less inclusion of vulnerable students**, many teachers focused on the lack of **resources** (devices, internet, digital platforms, etc), the lack of adequate **support at home**, the lack of **digital skills** (of students and teachers). Some of them also focused on **relationship building** between student and teacher, which they believed that can be hindered by the use of digital means.

Finally, complementary to the above, specifically for distance education settings, the first chapter of this report can once again, give us specific input on the challenges that vulnerable students might face.

¹⁷ Haddad, W. D. & Drexler A. (2002). “The Dynamics of Technologies in Education”, in Haddad, W. D. & Drexler A. (eds) *Technologies for education: potentials, parameters, and prospects*. Washington DC: Academy for Educational Development. UNESCO Paris, p.9

Chapter 7

Examples and good practices

In the 7th chapter of this report examples and good practices of digital tools/materials and cutting-edge pedagogies for the digital environment will be presented. The good practices presented have derived either from the experience of partners, or from the desktop research, from the BET in-depth interviews or in some cases from the experience of the educators taking part in the BET online survey.

Digital technologies in education

Title of good practice	At school with Minecraft
Good practice category	Digital Tools
Keywords	Game learning – Pedagogical technologies – immersive Didactic - Collaboration - problem-solving
Who was involved?	300 italian classes
Where was it implemented?	Italy
Why was it implemented?	Indire's (the National Institute for Documentation, Innovation and Educational Research, Italian Ministry of Education's research organisation) experimentation has shown that the educational use of Minecraft can enhance school learning in mathematics, in STEM disciplines, but also in history and civics.
Description	<i>Minecraft</i> is the most popular video game of all times, it is a video game originally developed and edited by Mojang in 2011. It is about a virtual world where it is possible to do things that could have a meaning also for school, not only from a ludic point of view. The trial of Minecraft use at school involved 300 it is reported in the publication " A scuola con Minecraft – Progettare la scuola a cubetti " that illustrate the game dynamics and analyze the educative potential, driving teacher in the materials and contents creation in line with school curricula in order to introduce this tool efficiently inside the classroom. Furthermore, in the publication are included several <i>best practices</i> that show how Minecraft can be used in several disciplines , and in an even more interesting and fruitful way, in an interdisciplinary perspective that enhance an approach based on skills. Immersive didactic has also proved as an effective support in the inclusion of vulnerable students unlocking hidden potential in these pupils.
Link	https://www.youtube.com/embed/I50_9tr6Cp8

Title of good practice	Virtual Reality Videos in Education - Walk the Global Walk virtual reality educational video
Good practice category	Digital Tools
Keywords	VR, education, SDGs, climate change
<p>Who was involved?</p> <p>Type of target group, Implementers, Partners of implementers</p>	<p>The VR video was created by ActionAid Hellas in the framework of the Walk the Global Walk project. For its creation ActionAid Hellas collaborated with Noesis.</p> <p>Walk the Global Walk partners include:</p> <p>Oxfam Italia, Regione Toscana, ActionAid Hellas, Municipality of Fyli, Agenda 21, AIDGLOBAL, City of Mostar, Municipality of Sofia, Region of Istria, Municipality of Strovolos, Cardet, Normandy Regional Council, International Institute for Human Rights and Peace, Municipality of Vila Franca De Xira, Municipality of Bucharest, University of Glasgow, Carmarthenshire County Council, Dolen Cymru</p> <p>The VR is targeted to children over 11 years.</p>
Where was it implemented?	Online - Greece
Why was it implemented?	The VR video was created as an educational resource, as an awareness raising tool and as prompt for action. Self-explanatory and free to use this video can also become a valuable resource for the sustainability of the Walk the Global Walk project outputs.
Description	<p>Already used by the UN to inspire humanitarian empathy¹⁸ VR is the use of computer technology to create a three dimensional simulated environment. As stated by Gabo Arora, Creative Director and Special Adviser to the United Nations Sustainable Development Goals (SDG) Action Campaign "Virtual reality is the ability to really take part in a story that usually you're only a passive spectator on. And it's giving you the possibility to walk in another person's shoes"⁵.</p> <p>In the VR video of Walk the Global Walk, that combines real life elements and animations, students can explore a world the SDGs have been achieved. Hints of the process that has led to this achievement are still visible, like placards with the demands of the citizens. At the end of the video, the protagonist realizes that it was just a dream.</p>

¹⁸ <https://news.un.org/en/story/2016/05/529752-feature-un-uses-virtual-reality-inspire-humanitarian-empathy>

	<p>But she now knows what should be done and starts spreading the message.</p> <p>The use of virtual reality in education encompasses many benefits. First, it creates interest and increases student' engagement. It also allows for visual learning through the visualization of educational content, providing outstanding visualizations that aren't possible in the traditional classroom. Furthermore, it facilitates active learning from experiences while the experiential nature of VR supports a constructivist approach to learning. The VR video can thus be used as the initial stimulus for starting an exploratory learning process on the topics addressed in the video. Additionally, utilizing images and non-linguistic means of communication, VR videos can contribute to eliminating language barriers. These benefits can be effectively exploited to create an inclusive learning environment and to address topics related to Global Citizenship Education.</p> <p>Of course, there are also some challenges in the utilization of VR in education, with the basic one being the cost included in doing so. Progress is being made though on that issue, as progressively cheaper equipment is being created. The Walk the Global Walk video is also free to use. Furthermore, the video can be used even without the existence of VR equipment.</p>
Link	https://www.youtube.com/watch?v=6EbfoNft30s

Title of good practice	Serious Games in Education - Youth for Love Serious Game on Gender Based Violence and Bullying
Good practice category	Digital Tools
Keywords	Serious game, gender based violence, bullying
Who was involved?	<p>The serious game was created in the framework of Youth for Love project.</p> <p>Youth for Love partners include: ActionAid Hellas, ActionAid Italy, AFOL Metropolitana,</p>

	University College Luimburg, Centrul Parteneriat pentru Egalitate The game is targeted to teenagers over 15 years.
Where was it implemented?	Online - Greece
Why was it implemented?	The online game was created as a tool to raise awareness amongst teenagers on issues such as gender-based violence, bullying and violence in general.
Description	Available in five languages (Greek, English, Italian, Dutch and Romanian) the game is aimed at those who want to learn the power of their own choices in cases of violence and intimidation and the importance of making the right decisions. Players can choose a character that inspires them, tour through the city and choose where they want to start. From there, their story begins, as depending on the choices they make, the story will unfold differently for the character.
Link	https://www.youthforlove.eu/el/pregame/

Title of good practice	Video Making in Education - MigratEd Participatory Videos on GCE issues and Webdocumentary
Good practice category	Digital Tools
Keywords	Participatory video, interculturality, diversity, migration
Who was involved?	The participatory videos and web documentary were created in the framework of MigratED project, cofounded by the Erasmus+ Programme of the European Union. MigratED partners include: Actionaid, Karpos, GVC, Municipality of Bologna, CSAPSA2, SLOGA, 4Change, COFAC, και Future Worlds Center.
Where was it implemented?	In schools in the 5 countries of the project and online
Why was it implemented?	To empower students and stimulate their critical thinking on both the use of media and the social problems of their local contexts.
Description	The Media literacy workshops addressed to youngsters in each country, and especially

	<p>engaging class and groups composed by national and foreign young people, in order to promote intercultural dialogue. The need is to raising awareness and educate about a correct use of media and digital tools, starting from the participants' interests and habits and deepening some GCE issues. These workshops are the first step for the production of participatory research and video production; on the other hand, they are the starting point for the organization of public events in which the young participants themselves are the key players of an awareness raising campaign on the issues of media, human rights and migration.</p> <p>Following the workshops, in each country, different focus groups of young people are created in order to produce participatory videos on the GCE issues (interculturality, diversity, migrations, human rights...) collectively. These videos, as well as the participatory researches conducted by youngsters, were based on the real life experience of youth, and aim to create a collaborative process of production of audio-visual materials, empowering them and stimulating their critical thinking on both the use of media and the social problems of their local contexts.</p>
Link	http://migratedvideos.eu/

Digital platforms/resources/trainings

Title of good practice	Online methodological guides for education
Good practice category	Digital Platform/Resources
Keywords	methodology, teacher, skills, digital, guide
Who was involved?	teachers, students from all school types, schools, Ministry of Education, Romania
Where was it implemented?	in schools, online
Why was it implemented?	To develop the skills of teachers to use and develop open educational resources (RED), expecting that over time this space will support

	learning communities dedicated to open educational resources.
Description	Shortly after the suspension of school classes, this space was created for all teachers eager to capitalize on new technologies in learning activities with students, building on the experience and results obtained so far in the CRED project (site and Facebook page). Subsequently, out of the desire to cover as many of the teachers' needs as possible, we chose to make available resources from sources outside the CRED Project.
Link	https://digital.educred.ro/

Title of good practice	The Digital Teacher
Good practice category	Digital Platform/Training
Keywords	online, teaching, materials, transversal, competences
Who was involved?	Target group: teachers. Implementers: Finnish Teacher Training Center. Our team of trainers includes young specialists who work in technology companies such as: Microsoft, Google, UiPath or Orange, but who are also certified trainers with practical experience in adult training.
Where was it implemented?	Online - Romania
Why was it implemented?	To provide teachers with practical resources using today's technology (tutorials, free resources, online courses, books and more).
Description	Why attend the courses in the Digital Teacher Amphitheater? You learn from experienced trainers who understand current challenges and help you cope with change, to use technology effectively. You have access to courses immediately and you can learn at your own pace: wherever you are, whenever you have time and from any type of device: computer, tablet or mobile phone. Initiate conversations at the level of each lesson or participate in existing discussions. Be part of the community! Together we can do more and better.
Link	https://profesoruldigital.ro

Title of good practice	School Education Gateway - Europe's Online Platform for School Education
Good practice category	Digital Platform/ Resources/Training
Keywords	Online platform, resources, training, funding opportunities
<p>Who was involved?</p> <p>Type of target group, Implementers, Partners of implementers</p>	<p>The School Education Gateway is targeted to teachers, school leaders, researchers, teacher educators, policymakers and other professionals working in school education – including Early Childhood Education and Care (ECEC) and Vocational Education and Training (VET).</p> <p>It is an initiative of the European Union and it is funded by Erasmus+, the European programme for Education, Training, Youth and Sport. It is steered by the European Commission (EC) and implemented by its European Education and Culture Executive Agency (EACEA). It is operated on behalf of the European Union by European Schoolnet, an international partnership of European Ministries of Education developing learning for schools, teachers and pupils across Europe. The School Education Gateway is linked to eTwinning, the community for schools in Europe.</p>
Where was it implemented?	EU
Why was it implemented?	The place to engage with European policy and practice for school education
Description	<p>The School Education Gateway is an online platform presented in 29 European languages.</p> <p>It offers:</p> <ul style="list-style-type: none"> a. the opportunity to stay informed (via opinion pieces by experts, news articles, interviews, up-to-date publications, and examples of practices); b. the opportunity to find resources (such as publications, tutorials, teaching materials, e-Twinning project kits); c. the opportunity for personal development (via the Teacher Academy that offers online courses, webinars and teaching materials);

	d. the opportunity to get familiar with funding (through the Erasmus+ Opportunities, consisting of three practical tools - course catalogue, mobility opportunities directory and strategic partnership search).
Link	https://www.schooleducationgateway.eu/

Projects/ Initiatives

Title of good practice	“Conectando Mundos”
Good practice category	Project
Keywords	Critical thinking, interactive platform, Global Citizenship, Global Competence and Interculturality.
Who was involved?	<p>Target group: Teachers and students between the ages of 6 and 17.</p> <p>Promoter: Oxfam Intermón.</p> <p>Partners: Oxfam Italia, Espais Telemàtics, AIDGLOBAL and IPLeiria.</p> <p>Funders: Erasmus+ (editions from 2019 to 2020) and the partners involved.</p>
Where was it implemented?	Spain, Italy and Portugal.
Why was it implemented?	To contribute to the improvement of the educational quality by providing tools for the work and assessment of Global Competence in schools.
Description	<p>“Conectando Mundos” is an educational proposal, implemented through a multilingual interactive platform in 8 languages (Italian, Spanish, Portuguese, English, French, Galician, Catalan and Basque), through which the different classes interact and work in cooperative and organized teams.</p> <p>This project brings together activities within the classroom and work in a network composed of students from 6 to 17 years old from various cultural, economic and social realities. Every year, a concrete theme related to Global Citizenship Education (GCE) is worked on.</p> <p>The project includes:</p> <ul style="list-style-type: none"> - Online platform for collaborative work and cultural exchange; - Didactic proposals for the development of Global Competence with children and young

	people between 6 and 17 years old; - Set of training materials on Global Citizenship Education, for teachers.
Link	Official Link: https://www.conectandomundos.org/pt/

Title of good practice	Vidas Ubuntu
Good practice category	Initiative
Keywords	Self-knowledge, self-confidence, resilience, empathy, service, Global Citizenship and Human Rights
Who was involved?	Target group: Young people aged 14 to 25 from Secondary and Professional Schools, Youth Associations, Private Social Solidarity Institutions, Children and Youth Homes, Educational Centers, Social Centers and from the projects of Choices Program (Programa Escolhas). Promoter: Instituto Padre António Vieira (IPAV) Funders: EEA Grants (editions from 2014 to 2016) and Calouste Gulbenkian Foundation.
Where was it implemented?	Portugal
Why was it implemented?	- Promote and enhance social and cultural roots; - Promote Human Rights; - Promote the ability to conceive and develop a project that requires conception, planning, development, presentation and evaluation.
Description	“Vidas Ubuntu” is an initiative aimed to promote and defend human rights by developing a program for structuring and presenting, in the first person, life stories through the methodology of personal storytelling. The presentation of the final result is made, voluntarily, in digital format (digital storytelling) to the group of participants and guests. “Vidas Ubuntu” is inspired by the Ubuntu philosophy (“I am because you are”) that IPAV (Institute Padre António Vieira) has developed in Portugal through the Ubuntu Academy, which promotes a culture of welcoming, respect, mutual help, sharing, community, care, trust, and generosity.
Link	Official Link: http://www.vidasubuntu.pt/pt-pt

Title of good practice	Library Project
Good practice category	Project
Keywords	Library - Access to culture for all – Service learning
Who was involved?	Teachers and Students of Primary and Secondary school (1st level)
Where was it implemented?	ISTITUTO COMPRENSIVO DI POPPI (Ar) - Tuscany Italy
Why was it implemented?	This initiative is still in progress and it aims to create a digital archive of books existing in a few library of the Institute in order to educate pupils to coding, to stimulate them to read, to create a library environment open not only to the school users (teachers, staff and students) but also to external user and eventually thanks to this project schools entered in a system of digital school library.
Description	<p>Thanks to available resources following the Covid emergency, a software for books cataloguing already existing in the school library has been acquired, useful also to share the information of books loan with other libraries. In addition has been acquired has been acquired a digital school library which joins the traditional library with physical books.</p> <p>The library (physical and digital) it therefore available also for externals users.</p> <p>The digital cataloguing of books, in progress, is carried out by teachers and pupils. Thanks to this activity, teachers will learn the use of CODING and skills related to the cataloguing of books will be transferred to the students. At the same time this activity enhances the interest in reading among students, developed during their continuous work with books in the library.</p> <p>This activity is framed in the pedagogical proposal of Service Learning that fosters the use of students' competences in a service useful for the entire community.</p>
Link	https://www.poppiscuola.edu.it/index.php

Title of good practice	Council of Europe's Digital Citizenship Education (DCE) programme
Good practice category	Programme
Keywords	Digital citizenship education
Who was involved? Type of target group, Implementers, Partners of implementers	<p>The Digital Citizenship Education (DCE) programme is targeted to the educational community of Europe as well as policy makers.</p> <p>The Project 'Digital Citizenship Education' is related to the work of the Education Department which is part of the Directorate of Democratic Participation within the Directorate General of Democracy ("DGII") of the Council of Europe.</p>
Where was it implemented?	EU
Why was it implemented?	To provide young citizens with innovative opportunities to develop the values, attitudes, skills, and knowledge necessary for every citizen to participate fully and assume their responsibilities in society.
Description	<p>The aim of the DCE project launched by the Council of Europe's Education Policy Division is to empower children to participate actively in digital society. This involves providing them with an education that develops a sense of critical analysis and the effective use of digital technologies while fostering a notion of citizenship based on respect for human rights and democratic culture.</p> <p>The programme defines the competences children will need to master to be competent, responsible digital citizens. It also describes the 10 broad domains of on- and offline activity where they are used.</p> <p>Furthermore, the Digital citizenship education handbook has been developed in the framework of this project. It is intended for teachers and parents, education decision makers and platform providers. It offers information, tools and good practice to support the development of competences to empower and protect children, enabling them to live together as equals in today's culturally diverse democratic societies, both on- and offline.</p>
Link	https://www.coe.int/en/web/digital-citizenship-education/home https://rm.coe.int/digital-citizenship-education-handbook/168093586f

Title of good practice	Participation in Teacher (and other Frontline Practitioners) Networks – Radicalisation Awareness Network (RAN)
Good practice category	Initiative/Frontline Practitioners Networks
Keywords	frontline practitioners' networks, radicalization

<p>Who was involved?</p> <p>Type of target group, Implementers, Partners of implementers</p>	<p>The Radicalisation Awareness Network (RAN) is set up by the European Commission as an EU-wide umbrella network of frontline practitioners across Europe who work daily with both those vulnerable to radicalisation and those who have already been radicalised.</p> <p>The RAN is funded by the EU Commission's Internal Security Fund - Police</p>
<p>Where was it implemented?</p>	<p>EU</p>
<p>Why was it implemented?</p>	<p>The RAN's ambition is to bring actionable information to the various stakeholders involved in the prevention of radicalisation.</p>
<p>Description</p>	<p>The Radicalisation Awareness Network (RAN) connects frontline practitioners from across Europe with one another, and with academics and policymakers, to exchange knowledge, first-hand experiences and approaches to preventing and countering violent extremism in all its forms.</p> <p>RAN is structured around nine thematic Working Groups, driven by a Steering Committee (SC) chaired by the European Commission. One of these working groups is the Youth and Education working group (RAN Y&E), which focuses on the need to better equip teachers and youth workers to support them in their role in preventing radicalisation and on strengthening cooperation between the two sectors.</p>
<p>Link</p>	<p>http://ec.europa.eu/ran https://ec.europa.eu/home-affairs/networks/radicalisation-awareness-network-ran/topics-and-working-groups/youth-and-education-working_en</p>

<p>Title of good practice</p>	<p>Participation in Teacher Networks – Scientix community</p>
<p>Good practice category</p>	<p>Project/Teacher Networks</p>
<p>Keywords</p>	<p>Teacher networks, STEM</p>
<p>Who was involved?</p> <p>Type of target group, Implementers, Partners of implementers</p>	<p>Scientix was originally born at the initiative of the European Commission and has, since its inception, been coordinated by European Schoolnet, a Brussels-based consortium of thirty ministries of education, which is a driving factor for innovation in teaching and learning and fosters pan-European</p>

	<p>collaboration of schools and teachers. It is targeted to STEM teachers, education researchers, policymakers and other STEM education professionals.</p> <p>Scientix 4 project has received funding from the European Union's H2020 research and innovation programme.</p>
Where was it implemented?	EU
Why was it implemented?	To promote and support a Europe-wide collaboration among STEM teachers, education researchers, policymakers and other STEM education professionals.
Description	<p>Scientix is a community for teaching and learning science, technology, engineering and mathematics (STEM). Scientix promotes and supports a Europe-wide collaboration among STEM teachers, education researchers, policymakers and other STEM education professionals.</p> <p>Scientix offers teachers:</p> <ul style="list-style-type: none"> a. inspiration (as they can browse through the Scientix resources repository and find inspiration for your classes); b. partnerships (as they can get involved in European STEM education projects via the matching tool provided); c. professional development (via online training, webinars or communities of practice) d. Multilingual Resources and e. support (through the Scientix Ambassadors and National Contact Points).
Link	http://www.scientix.eu/

Title of good practice	Participation in Teacher Networks - eTwinning
Good practice category	Initiative/ Teacher Networks
Keywords	Teacher networks, ICT, innovation, learning
Who was involved? Type of target group, Implementers, Partners of implementers	<p>eTwinning is an initiative of the European Commission targeted towards European school staff.</p> <p>eTwinning is co-funded by the Erasmus+, the European programme for Education, Training, Youth and Sport.</p>

Where was it implemented?	EU
Why was it implemented?	eTwinning aims to encourage schools in Europe to develop partnerships using Information and Communication Technologies while providing them with appropriate infrastructure.
Description	<p>Between 29% of secondary level and 41% of primary level students are taught by teachers that have participated in an online community for ICT related professional development¹⁹.</p> <p>eTwinning is the community for schools in Europe. It offers a platform for staff (teachers, head teachers, librarians, etc.), working in a school in one of the European countries involved, to communicate, collaborate, develop projects, share and, in short, feel and be part of a European learning community.</p> <p>At the time this report was written 999.113 teachers and 226.931 schools were part of the eTwinning community²⁰. It offers opportunities for collaboration, professional development (through learning events and online seminars) and recognition (through National and European Quality Labels, eTwinning Awards, eTwinning Schools and the eTwinning Portfolio). Furthermore, there is also Twinspace, the virtual collaborative platform, that is designed to include those people who are not registered in the eTwinning platform.</p>
Link	https://www.etwinning.net/

¹⁹ European Commission (2019). 2nd Survey of Schools: ICT in Education. Technical Report. Available at: <http://dx.doi.org/10.2759/035445>

²⁰ <https://www.etwinning.net/>



Chapter 8

National Policies in the field

In this final chapter we will look into the policies for inclusive education, digital education, and civic education. The aim of this chapter is not to provide an extensive listing of the related legislative framework and the policies, but to contribute to our understanding of the operating framework, in order to help us shed more light on our research findings and draw our conclusions.

Policies on inclusive education

According to the Article 2 of the Treaty on European Union²¹ "the European Union is based on the common values and general principles of respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities". Furthermore, in the "Declaration on promoting citizenship and the common values of freedom, tolerance and non-discrimination through education"²², that was adapted by the informal meeting of EU Education Ministers in Paris on 17 March 2015, it was agreed to strengthen their actions in the field of education with a view, amongst others, to "ensuring inclusive education for all children and young people" and to "combating geographical, social and educational inequalities, as well as other factors which can lead to despair and create a fertile ground for extremism, by providing all children and young people with the necessary knowledge, skills and competences to build their own professional futures and pathways to success in society, and by encouraging measures to reduce early school leaving and to improve the social and professional integration of all young people".

In line with this, European Council has issued a recommendation on promoting common values, inclusive education, and the European dimension of teaching²³, according to which the member states shall, among others: increase the sharing of the common values mentioned in Article 2 the Treaty on European Union from an early age and at all levels and types of education and training; to promote inclusive education for all learners by: "(a) including all learners in quality education from early childhood and throughout life; (b) providing the necessary support to all learners according to their particular needs, including those from disadvantaged socioeconomic backgrounds, those from a migrant background, those with special needs and the most talented learners; (c) facilitating the transition between various educational pathways and levels and enabling the provision of adequate educational and career guidance.

In the direction of achieving more inclusive educational systems, Italy, Greece and Portugal are also member countries of the European Agency for Special Needs and Inclusive Education²⁴. The aim of this agency is to support the ministries of education of its member countries as they improve their inclusive education policy and practice and to also co-operate with transnational organisations and engage educators, experts, learners and families to ensure high-quality educational opportunities for all.

²¹ Consolidated version of the Treaty on European Union - TITLE I COMMON PROVISIONS - Article 2 *OJ C 236*, 7.8.2012, p. 17–17 ELI: http://data.europa.eu/eli/treaty/teu_2012/art_2/oj

²² https://ec.europa.eu/assets/eac/education/news/2015/documents/citizenship-education-declaration_en.pdf

²³ Council Recommendation of 22 May 2018 on promoting common values, inclusive education, and the European dimension of teaching *ST/9010/2018/INIT OJ C 195*, 7.6.2018, p. 1–5 Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018H0607%2801%29>

²⁴ <https://www.european-agency.org/>

Laws, policies, framework for digital education

The Digital Education Action Plan (2021-2027)²⁵ is a policy initiative of the European Union to support the sustainable and effective adaptation of the education and training systems of EU Member States to the digital age.

This action plan sets out two priority areas: Fostering the development of a high-performing digital education ecosystem (including infrastructure, connectivity and digital equipment/effective digital capacity planning and development and up-to-date organisational capabilities/digitally competent and confident teachers and education and training staff/high-quality learning content, user-friendly tools and secure platforms which respect e-privacy rules and ethical standards) and enhancing digital skills and competences for the digital transformation (requiring basic digital skills and competences from an early age/digital literacy, including tackling disinformation/computing education/good knowledge and understanding of data-intensive technologies, such as artificial intelligence (AI)/advanced digital skills, which produce more digital specialists/ensuring that girls and young women are equally represented in digital studies and careers.

Complementary to the above directions, interesting insights on the design of effective digital education policies can be also found in the Digital Education Policies in Europe and Beyond: Key Design Principles for More Effective Policies²⁶ report. This report on policy models for the integration and innovative use of digital technologies in education aims to inform, guide and inspire policy-makers at all government levels in designing new policy initiatives, or in adapting or redesigning existing ones for the digital transformation of education.

Laws and policies related to civic education

In the “Declaration on promoting citizenship and the common values of freedom, tolerance and non-discrimination through education”²⁷, that was adapted by the informal meeting of EU Education Ministers in Paris on 17 March 2015, it is stated that “The primary purpose of education is not only to develop knowledge, skills, competences and attitudes and to embed fundamental values, but also to help young people - in close cooperation with parents and families - to become active, responsible, open-minded members of society”.

The Reference Framework of Competences for Democratic Culture, which was developed by the Council of Europe, can be a tool towards this direction of promoting citizenship education.

²⁵ https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en

²⁶ Redecker, C., Kampylis, P., Bacigalupo, M. and Punie, Y., editor(s), Conrads, J., Rasmussen, M., Winters, N., Geniet, A. and Langer, L., Digital Education Policies in Europe and Beyond: Key Design Principles for More Effective Policies, EUR 29000 EN, Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-77246-7, doi:10.2760/462941, JRC109311.

²⁷ https://ec.europa.eu/assets/eac/education/news/2015/documents/citizenship-education-declaration_en.pdf

Conclusions

Summary of the main findings

The transition to remote online teaching due to COVID-19 was not without challenges in all four countries participating in our research, with the most commonly faced ones by **teachers** being **students' motivation and engagement, increased workload and stress working from home** and involving students from **socially disadvantaged homes**. COVID-19 brought to light many critical issues in the education systems, not only in terms of infrastructure (connection, devices, etc.) but also in the adequacy of teachers' digital readiness and vulnerable students' digital inclusiveness. COVID-19 has also had a major impact on students, especially on the most vulnerable. For them the transition to distance learning has suffered many difficulties, as, as shown by the BET research especially in the case of **vulnerable students**, teachers identified that challenges related to resources (access to a **stable internet connection**, access to **digital tools** and **lack of an adequate place at home**) prevailed. Nevertheless, also some opportunities have emerged during this crisis, as it accelerated developments around digital education and helped teachers get acquainted with the use of digital tools in education.

Teachers in all 4 countries agreed on the **use of digital technologies to enhance inclusion, personalisation and learners' active engagement being the most important skills area** in the field of digital education. This was also the skills area that most of the participating teachers in all 4 countries would like to improve, followed by managing and orchestrating the use of digital technologies in teaching and learning. More than half of the participants in the BET survey **had participated in a training on the use of digital technologies in teaching and education during the last year**. Nevertheless, when it comes to teacher preparedness to use digital tools in education and training, the findings of our research are mixed. While the majority of the teachers participating in the BET survey feels prepared for using digital technologies for education, when asked about their colleagues' preparedness, agreement percentages drop.

With regards to training preferences, if they were to attend a training on digital education, the **majority showed a preference for an online format**, a smaller percentage preferred a blended format, while a small only percentage preferred in presence training.

In general, the use of digital tools in education both the use inside the classroom and outside was found to be widespread, with bigger percentages in the first case. Teachers also seem to have a positive attitude towards the use of digital tools in education.

With regards to opportunities/advantages of the use of digital tools in education It is shared opinion that the technologies could enhance the learning process in students with vulnerabilities, but the understanding of how and which technologies are more efficient and how to integrate their use in the process of personalized and individualized learning, is still missing. The study also served to highlight the importance of the use of digital technologies to enhance inclusion, personalization and learners' active engagement, but for this it is necessary to provide teachers inclusion skills, focused on students with vulnerabilities. Technology brings opportunities inside and outside the classroom, such as providing increased engagement and motivation by students as well as innovative and engaging ways of teaching/learning, and flexibility, learning/teaching at one's own pace. Furthermore, especially in the case of Romania, a decrease of the bullying phenomenon has been observed during the period of online education, while the Strategy on the Digitalization of Education is expected to bring more opportunities in the future with regards to digital education.

Education has a strong bond with inequalities and likewise digital learning is an opportunity to reduce social, geographic and economic inequalities. Digital education is a still unexplored opportunity to reduce inequalities between territories, to resolve difficulties that previously seemed insurmountable (such as the

closure of schools, etc.) On a global level, this could allow students in disadvantaged countries (with few or lacking education opportunities) access to quality education (SDG 4 targets 4.1 and 4.5) hence overcoming those barriers given by the relationship between few education opportunities and where you are born.

Despite the above opportunities of the use of digital tools in education, we must also not overlook some **challenges and risks associated with it**. The analysis carried out revealed a series of logistical, pedagogical, technical and content impediments. It is also clear that using digital learning in an inappropriate way is a risk for vulnerable students as it can increase the exclusion gap (eg. lack of devices, connectivity, family support) and therefore requires attention as well as teachers' specific training and collaboration.

Recommendations

The BET research has highlighted that digital technologies in education can and should be used towards the direction of increasing inclusion. Digital education should be used to reduce inequalities in education, to promote social inclusion and to address the needs of vulnerable students. Furthermore, it should be used to adapt teaching and learning methods to each student in its individuality, and promote learner's engagement.

Investments needed in:

a) Teacher skills in all countries

We should invest in teachers' digital competences with emphasis on skills for inclusion and personalization and skills as regards didactic planning or the transfer of competences to students in a digital environment. Also Area 4 of the DigiCompEdu Framework (Assessment) needs to be updated in light of increased digital education environments. Furthermore, the existing knowledge, skills and best paradigms of teachers should be capitalized and incentives should be provided.

b) Equipment and internet for Greece and Portugal

We should not sacrifice constitutional principles such as equal access for all to education. Investment in equipment and internet connections must be made and schools should be provided with the necessary equipment to respond to the challenges of a globalized and digital society, and provide each teacher and student the access to a computer or tablet and good internet speed. Specifically for Romania it is more an issue of management of equipment distribution, while the internet the problem exists more for remote rural areas

Country Specific Recommendations

Except of the above horizontal recommendations for the survey countries, also some country specific recommendations have derived from our research, as following.

For **Greece** it would be recommended that efforts on digital education should be part of a national long-term strategy for education, taking into account the latest developments in the field, utilizing the experience and learnings of the covid period, and be built with the engagement of all stakeholders. Furthermore, that a holistic approach is needed on the matter and any effort should take into account the needs and peculiarities of teachers - students - parents.

For **Italy** it would be recommended to implement specific training courses (and materials to use) for teachers who teach civic education (introduced as a transversal subject that affects all school levels, starting from pre-primary up to secondary school since September 2020) on digital education approaches and methodologies when teaching this subject. Many teachers need to improve their skills and, most of all, change their approach to digital technology, considering it an integral part of everyday life, so that students can become "active digital citizens". Furthermore, educational poverty should also include incentive for didactic and pedagogical innovation, the strengthening of vocational education, the creation of priority education zones between the areas with a higher incidence of early leaving, the strengthening of educational communities (networks of schools and other educational / training territorial extracurricular realities).

For **Romania**, it would be recommended to not only focus on online tools, because they will change very often. Teachers should continue to focus on their learning objectives and try to reach their students with what they have, even if it's just a card game or a simple tool. This objective could help teachers keep the focus and help your students to become better. Furthermore, teacher trainings should be organised so that teachers learn how to plan lessons, how to evaluate student's performance and how to organise exams online. In some rural areas there is also a need for teachers to learn how to use a computer and have basic digital skills, before learning how to plan an online lesson. Additionally, ways should be sought to increase the motivation level and it would be helpful if digital educational content (digital resources) would be developed.

Finally for **Portugal** it would be recommended to promote digital literacy to enhance critical thinking and active citizenship, tackling the DigiCompEdu Framework. Also, while providing a digital education, the educational community (parents, teachers, students, school staff, ...) should be taken into consideration and the socio-economic and emotional context of each one should be considered, so that in the end it's possible to respond to the student's academic and emotional needs through different strategies (online, face to face and blended-learning).