DigiTeaL

DigiTeal – Digital Teaching Literacy

IO1.A3 – COMPARATIVE REPORT

Developed by:

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1. General Introduction

The pandemic of COVID-19 took the world by surprise, and citizens were forced into a global lockdown with almost no time to prepare, and with no precedent in recent years. Schools moved immediately to online teaching for the duration of the lockdown, and teachers have hardly had a chance to take a breath, let alone spend time retraining or developing key skills to help with the move to online teaching.

This report is part of the European Erasmus+ Project DigiTeal – Digital Teaching Literacy, and aims to provide an overview of the state of the art regarding online teaching at the partner countries of this project – United Kingdom, Cyprus, Germany, Romania and Greece – presenting also the needs and gaps of educators in relation to online teaching practices. The information presented in this report, will be used as a reference for the design of the DigiTeal Framework, which aims to present key skills and competences to be achieved by the educators in relation to online teaching.

2. State of the Art regarding Online Teaching

This section aims to provide an overview of the state of the art regarding online teaching in each country, along with any relevant policies or guidelines. For more detailed results, please check the full national report of each country.

United Kingdom

In a review of research in England, Howard et al. (2021) concluded:

- The pandemic has been a challenging period for teachers, schools and colleges, students and parents;
- The quality and quantity of learning undertaken declined as a result of the pandemic;
- Most students reportedly have some learning losses, some severe, while some have learning gains;
- Learning losses appear to be most prevalent in maths and literacy;
- Experiences of teaching and learning during the pandemic were diverse, but disadvantage and deprivation appear to be most associated with less effective learning and overall learning losses;
- Learning experiences were diverse: there were differential experiences both between and within groups;
- There are important implications for learning recovery;

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- There is much about learning during the pandemic that remains unknown and under-researched.

Ofsted (2021) detail the context of remote learning and provide examples of good practice, barriers and recommendations. They suggest that evidence from their visits indicates that due to the investment in time and resources required, schools are likely to continue using elements of remote learning post-pandemic.

> 'Our evidence shows that current remote education solutions across schools vary considerably in design. There does not appear to be a perfect one-size-fits-all solution. Instead, school leaders are taking into account their specific local contexts to design flexible remote solutions for pupils, staff and parents. Clearly, the message from the evidence is not that we should not be doing remote education. It is an imperfect but necessary substitute in mitigating against learning loss where classroom teaching is not possible. Pupils are still learning more than they would without any school support.' (Ofsted, 2021)

Safeguarding has been a key consideration for remote learning. NSPCC (2021) state that Government guidance for schools in England advises that schools should add an addendum or annexe to existing child protection policies and procedures, outlining how they will keep children safe during the coronavirus pandemic. NSPCC suggest this should:

- 'reinforce existing child protection procedures
- highlight any new ways of working during this period
- explain how your organisation can continue to contribute to multi-agency child protection meetings and plans
- clarify any changes to your code of conduct for staff and volunteers in response to new ways of working.'

Sharp et al. (2020) report that:

> 'Nearly all teachers (98 per cent) report that their pupils are behind where they would normally expect them to be in their curriculum learning at the end of the 2019/20 school year.
>
> Teachers estimate that their pupils are three months behind, on average. The majority (78 per cent) see no difference between girls and boys in this respect, but 21 per cent say that boys have fallen further behind normal expectations than girls
>
> Teachers report covering, on average, only 66 per cent of the usual curriculum during the 2019/20 school year.

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> Over half (61 per cent) of teachers report that the learning gap between disadvantaged pupils and their peers has widened since the previous year, with the remainder judging that the 'disadvantaged learning gap' had remained the same (32 per cent) or reduced (seven per cent).
>
> Teachers in the most deprived schools are over three times more likely to report that their pupils are four months or more behind in their curriculum related learning in July, compared to teachers in the least deprived schools (53 per cent compared to 15 per cent).'

Germany

The German education system is already quite complicated: educational matters are decided on a federated state level and not centralized for the whole country. There are 16 federated states and thus 16 ministries of education that operate mostly sovereign. This means there are wast differences between the individual federal states when it comes to education. It is therefore difficult to speak for the whole country when it comes to the state of art regarding online teaching.

Moreover, there is a significant link between social background and educational success in Germany, somewhat due to the differentiation between lower and higher secondary schools and the grammar school – it doesn't only depend on the educational achievement which school the students visit, but also their social situation and the area that they live in. According to studies, "[…] social background and parental income are more of a deciding factor when it comes to a child's education than actual school performance" (https://www.dw.com/en/german-study-finds-link-between-social-backgroundeducational-success/a-15805347) and this is mirrored in the corona situation and the homeschooling.

Too many students did not have school for months and no homeschooling, because they did not have the right equipment or their particular school did not manage to provide support and solutions and this was the case for many lower secondary schools and schools for children with special needs. On the other hand, children from well situated households had a clear advantage during the closure of schools.

Some schools manage surprisingly well, the teachers get creative and the schools can provide support for the less well situated students. One example of a great management is a primary school in Bonn (North Rhine-Westphalia), a film about that school gives a very detailed picture about the online teaching there: https://www.youtube.com/watch?v=OEj2fYy3WIc

There "Kulturminister Konferenz" – the Standing Conference of the Ministers of Education and Cultural Affairs (https://www.kmk.org/kmk/information-in-english.html) provides support and information about learning platforms, tools for online teaching and focal points for all the

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different federal states of Germany concerning online teaching but in the end every school has to manage the situation on its own in its very unique way.

Romania

In Romania, at the beginning of the 2019-2020 school year, there were 2.8 million pupils and 215.289 teachers according to the Minister of Education (Ofițeru, 2019). The needs and challenges that emerged in the context of moving the teaching from the physical classroom to the online classroom can be put in two main categories: challenges faced by teachers and challenges faced by pupils, each category having two dimensions – logistical and digital literacy.

The logistical dimension refers to problems like the lack of internet access. According to the National Council for Students 800 000 pupils didn't have access to internet during the COVID-19 pandemic (Nistor, 2020). It was also estimated by the Romanian Minister of Education that over 4.400 teachers didn't have a digital device and/or access to the internet (2021). In addition, the lack of digital devices that enable access to online classes, the lack of privacy during online classes, as pupils had to share rooms with their parents and/or siblings and teachers with their children or other members of the family; and the lack of a national platform for e-learning were the most significant challenges that teachers and pupils were faced with. Although the National Law of Education no.1/2011 proposed the construction of two national platforms for online education – The Virtual School Library and The School Platform for E-learning, these are yet to be established.
The abovementioned challenged were coupled with the dimension 'digital literacy' that includes problems like a very low level of digital knowledge, lack of experience and training in using digital devices or online platforms, the lack of information and solutions in managing the technical and non-technical problems associated with online teaching. From the start of the pandemic the Romanian authorities have made steps in order to reduce the problems encounter by teachers during the move to online teaching. In 2020 the Law 109/2020 was adopted as complementary to the National Law of Education no.1/2011 through which The Romanian Minister of Education promised to offer access to the digital infrastructure to any teacher and pupil that required this. Also, in the summer of 2021, the Romanian Government assumed responsibility for implementing a project proposed by the Romanian Presidency – the project is called Educated Romania and its main aim is to improve the level of teachers' digital literacy by 2030.

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Greece

In Greece, the government in collaboration with the Greek National Public Health Organization, decided to close all educational institutions at all levels across the country on March 10th 2020. The Ministry of Education & Religious Affairs responded by launching digital resources previously developed through the Digital School Strategy. This Strategy focused on developing digital solutions for synchronous and asynchronous learning, but these tools were designed to complement the educational process and not to replace it. Previously used by a small number of teachers and students, these tools formed the educational background on which many further digital efforts were built such as the Aesop and e-me platforms while other existing ones such as Photodentro were enriched. For this reason, an effort was made to rapidly train teachers in distance learning, and new digital material was developed immediately to meet the needs of both teachers and students.

The tools that have been developed cover the needs of both synchronous and asynchronous distance learning. The Ministry of Education suggested Webex (https://www.webex.com/), to serve as the official synchronous platform and e-me (https://e-me.edu.gr) or e-class (https://eclass.sch.gr/) platforms for asynchronous distance education. The free version of Zoom (https://www.zoom.us/) and e-mails were also widely used by the teachers. Moreover, jointly with the Institute of Educational Policy (IEP) and the National Broadcasting Channel (ERT), the Ministry of Education produced educational TV lessons for all classes of primary school, which enjoyed wide viewership.

It is worth emphasizing that for the academic year 2019-2020, distance education according to the Ministry of Education "does not replace face-to-face learning, but rather aims to maintain a close contact between students, teachers and the school.", while from the year 2020-2021 distance education is considered to be equivalent to face-to-face learning.

From this process a significant number of tools were developed and enriched, while the Ministry of Education launched a new informative portal called “We learn at home” (https://mathainoumestospiti.gov.gr/) that acts as an aggregator for all digital tools in order to help teachers and students to find everything they need in one place.

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Cyprus

In order to counter the emerging risks of the COVID-19 pandemic, the government of Cyprus following the example of other countries around the world, suspended the in-school operation of all public and private schools at all levels in March 2020. As a result, teaching was transferred online, using both synchronous and asynchronous methods. Specifically, a distance synchronous education programme had been implemented using Microsoft Teams with more than 110 000 teachers and students having access to the software (Eurydice European Commission, 2021).

However, the transition to online teaching was not easy and various measures were taken to support both students and educators. Firstly, priority was given to students' access to computers/ tablets and internet at home through funding by the government (MOEC, 2021). Additionally, supportive educational material for students was uploaded onto the Ministry of Education (MOEC) website, on individual school webpages and also on public and private TV channels in the form of broad casting lessons and educational programmes. Similarly, online teacher training courses were provided by the Pedagogical Institute of Cyprus, along with supportive material produced by the MOEC and published on a dedicated website on topics such as online tools, teaching techniques, resources etc. Moreover, material and resources were produced to support parents and guardians to support their children with online teaching.

At the moment, most of the students returned back to schools in Cyprus, following all the necessary safety and hygiene measures according to the guidelines of the Ministry of Health, but certainly the impact online teaching had on education will be long lasting. A blended learning approach is adopted by schools in Cyprus, allowing students with medical or other reasons to participate in their learning experience remotely, while at the same time other students can participate physically in class (MOEC, 2021).

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3. Needs and Gaps of Teachers in relation to Online Teaching

In order to identify the needs and gaps of teachers in relation to online teaching, a questionnaire was developed and distributed to teachers both online and face-to-face. Additionally, a focus group was conducted with teachers who expressed an interest to discuss further their experiences and needs in relation to online teaching. Overall, 312 educators responded to the questionnaire and 25 educators provided more information during the focus group sessions. For more detailed results, please check the full national report of each country.

United Kingdom

Over 50% of respondents were very confident with online teaching. 40% were confident, 6.7% were not very confident. Bad internet was the main obstacle for teachers (60%), followed by lack of appropriate software (40%) lack of digital skills and knowledge (33.3%) and lack of appropriate equipment (26.7%). Students' bad internet and lack of digital skills, and students' lack of interest, were flagged as minor obstacles (<10%).

A wide variety of learning management systems is used, with 26.7% not using one at all – with 360Learning was the most commonly used (13.3%). Over a quarter of respondents used a combination of systems e.g. Edulink with SMHW and Teams, Satchel with Office 365 and One Drive. Respondents showed a preference for Microsoft Teams to deliver training (86.7%), with Zoom, BongoLearn and an institutional system also being used.

To enhance interaction with learners, the most popular option was online quizzes (93.3%) and then online whiteboards and Padlet (both 33.3%). Brainstorming charts are used by 23.1% of respondents, and Kahoot by 7.7%.

The majority of respondents (57.1%) do not use any tools to create content. Those who did use tools, all used something different such as Google Draw, Powtoon, Kahoot, Microsoft Forms and Mentimeter. Only 13.3% of respondents are aware of Open Badges as a validation method, and none are using it.

Almost three-quarters of respondents (73.3%) observed low motivation in their learners, with 20% observing the same motivation as in classroom-based teaching (and 6.7% seeing more).

A majority (66.7%) also observed more learner fatigue during online teaching, with 20% observing the same levels as in classroom-based teaching. Respondents also noted that this could be learner-dependent, and that parents reported difficulty in engaging learners. 66.7% of respondents also saw lower grades during online teaching, while 33.3% saw classroom-based levels maintained. 60% of respondents reported that previously high-achieving students found online teaching easier than classroom-based learning, although one respondent noted that these students may be coping better, but not necessarily finding it easier. A small number of

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respondents also mentioned learners from disadvantaged backgrounds, learners with Special Educational Needs, learners with physical disabilities and previously low-achieving learners.

93.3% of respondents were aware of the GDPR requirements relating to online teaching (with the remaining 1 respondent presumed to be the respondent who had said they are not doing face-to-face online teaching).

Respondents are taking a number of steps to protect their learners' privacy while online:

- Consent to record the session (73.3%)
- Not sharing students' photos or information without consent (66.7%)
- Using tools that protect students' personal data (53.3%)
- Inform students about personal data issues (30.8%)

To avoid disruptive intrusions into online teaching, 64.3% of respondents verify learners' identity before giving them access to an online session. 42.9% set a password for accessing online sessions, and/or avoid sharing online session links via social media platforms.

50% of respondents inform students about online threats such as inappropriate content and cyberbullying, in order to protect them. 35.7% have a cyberbullying reporting system in place. Under 15% use technical measures such as changing security settings or having Smoothwall installed on school laptops. 28.5% do not take any measures to protect learners from online threats.

Two of the teachers who had responded to the survey were willing to discuss online teaching in more detail in individual interviews. While the discussions generally echoed the survey results, the teachers raised some additional points of interest.

One teacher worked in a college focusing on English language tuition. She noted that time zones were an issue with her classes, because learners either left the UK during the pandemic, or were delayed in reaching the UK. Furthermore, learners from countries with restricted internet access had additional problems in accessing the learning platform, and if they could not legally use VPNs then additional workarounds had to be found.

The second teacher had several learners in her classes from large Muslim families. She found that they reported difficulties in engaging with online learning because they were expected to a) help with household chores during lesson times; b) help younger siblings with their online learning; and/or c) share technology access with siblings (not having enough tablets etc. for all school-age children in the house to join online learning at the same time).

Interestingly, this teacher found an unexpected benefit to online learning. As an art teacher, she had previously quickly demonstrated techniques in class. She now produced videos of herself using techniques while working on her own art. This gave her more time and motivation for her own artistic practice, and prompted the learners to see her as an artist in her own right, rather than as a teacher only.

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Germany

In Germany, 37 respondents took part in this research. In regards, to how confident the participants of the survey feel concerning online teaching, the majority (56.8%) seems to feel confident; whereas only 5.4% indicated they don't feel confident at all. Additionally, 33.3% of the respondents stated that their institution does not use any learning management systems. Among those who indicate that they do use such systems, a majority of 42.3% use the "IServ'' system.

In terms of technologies used to deliver online sessions, system "IServ" was again clearly the most used system (45.8%). At 37.4%, the "Microsoft Teams" system is also used quite frequently. The "Zoom" system is used by 14.3% of respondents for their online teaching. "Jitsi Meet" is also represented with 8.7%.

Looking at the extent to which digital technologies are used to improve interaction with learners, it can be seen that there is not much versatility here. Quiz" with 68.8% and "Padlet" with 65.6% are the main technologies used. It also shows that brainstorming charts and online boards are used by 31.3% each. In regards to content creations, it turns out that 62.5% of teachers do not use any kind of technology to make online teaching more engaging. Canva is a tool most used, at 15.6% and 6.3% of the teachers use Powtoon for their online lessons. Additionally, 94.4% are not aware of the Open Badges as a validation method.

The final question about difficulties during the experience of online teaching shows that the most common problem is poor internet connection (82.9%). However, this is not the only difficulty that is increased like this. 62.9% of the teachers said that their lack of digital knowledge and skills causes problems.

In terms of managing learners online, 56.8% stated that there was a decrease in students' motivation, 55.6% also noticed that students showed greater fatigue compared to face-to-face lessons. In terms of the academic performance, 31.4% observes a decline in performance through worse grades while an equally large group (31.4%) does not notice a difference. In regards to actions aiming to manage the screen time of students 54% stated that they take some actions such as breaks and activities.

Regarding the benefits of online teaching, 15.6% view online teaching as more neurodiverse and being easier for students with ADHD, autism or legasthenia. In addition to that a small number of participants describe online teaching as beneficial for more quiet or shy learners.

In terms of safety measures, a clear majority of the respondents (73%) stated that they were aware of the GDPR Policies, while 27% of the participants were not. In order to protect the privacy of students during online lessons, each of the respondent takes concrete measures. The majority (94.6%) says that they do not share photos or information of students. Another large proportion (64.9%) teach students about personal data. In addition, more than half of the respondents (37.8%) use tools to protect personal data. Also, a few participants (18.7%) ask for consent to

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record the session. Additionally, 63.9%, the majority avoid sharing links to online video conferences on social networks. In addition, 44.4% say that they create a password that enables access to the sessions in the first place. A large proportion (58.3%) also first check the learners' names before they accept them to join the video conference. To protect learners from inappropriate content and cyberbullying, a surprising majority (60.6%) take no precautions. Just 27.3% inform and educate the students. The minority change safety settings (12.1%) or install a reporting system for cyberbullying (6.1%).

For the purpose of the focus group, 3 educators took part. All 3 participants agreed that the transition to online teaching was not easy, however despite some challenges (students chatting in private chats, cameras switched off, shy students not participating) managing an online classroom share the same difficulties as a physical one. In terms of the future of digital education, participants agreed that is a great addition, but not as the main way of delivery. Some tips have also been shared, concerning the use of proper equipment and useful tools.

Romania

In Romania, 164 educators took part during the research phase. Almost half of the respondents rated their digital competences as good to high, 46.5% declaring being on a 4 from a 5 Likert scale points. The main difficulties faced online were poor internet connection (71.2%), the lack of specialized software and apps (45.3%) or adequate equipment to deliver online teaching (38.8%). About 35.5% respondents considered the lack of digital knowledge an issue.

Regarding the digital platforms used at an institutional level in Romania the diversity is huge, but Google Classroom and G suite for education are mentioned most often. Also, the Open Badges System is not too popular in Romania, only 4% of the respondents are using it, 13.5% heard about it, and 82.4% had never heard about it. The respondents were confronted with a decreasing level of students' motivation (61.2%), digital fatigue (67.7%) and errors with students' evaluation; 45.9% of respondents declared that the grades awarded to students were higher because examination was done online. Most of the respondents were aware of the GDPR regulations (69.4%) and their answers prove that most of them have taken steps to protect students' online. Only approx. 5% of them did not do anything to make sure pupils were safe online.

Regarding the focus groups, 4 focus groups with 10 secondary school teachers in total were conducted. Overall, the difficulties identified by Romanian teachers during the COVID-19 pandemic are as follows:
a. Technical difficulties: lack of adequate technology (laptops, tablets, mobile phones);
problems with the internet connection;
b. Social difficulties: new types of relationships within the 'golden triangle' (teacher-studentparent)
and new social roles for pupils and parents.
c. Personal difficulties: the need to learn new abilities and to develop new skills related to online teaching.
Regarding the difficulties in relation to managing students behaviour in an online classroom as compared to a face-to-face classroom, the teachers indicated the following:

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a. Huge problems related to the individual evaluation of learning performance (e.g. you cannot apply the same system of evaluation as in a face-to-face class) which led to inflated grades and overevaluation of the students located at the bottom and at the middle of the performance ladder.
b. Problems related to teaching some disciplines like sciences (biology, chemistry, physics) and humanities (philosophy) especially for high-school students.
In addition, Romanian teachers indicated the need to develop the following skills for teaching to continue to be delivered online:
a. Learning how to use digital tools (especially video apps/programs) in a creative way;
b. Learning how to use more efficiently the existing online teaching platforms;
c. Taking part in training courses in order to further refine the social and psychological abilities needed in online interactions with children.

Greece

In Greece, the questionnaire has been answered by 56 teachers from various backgrounds.

Over half of the teachers that answered the questionnaire claimed that they felt very confident and confident regarding online teaching (64,3%), whereas 20 out of 56 (35,7%) didn't feel so confident or didn't feel confident at all. The main difficulty that teachers faced during online teaching was bad Internet connection (80,4%), followed by lack of appropriate equipment (44,7%), digital skills and knowledge (33,9%). Some of the participants had also encountered lack of appropriate software (17,9%).

Almost half of the participants' institutions don't use any learning management system (53,6%), some use eClass (23,1%), Moodle (19,6%) and e-me (3,6%), a Greek Digital Educational Platform for pupils and teachers, whereas none of their organisations use 360Learning, Svelte or Talent learning management systems. The vast majority of the respondents (49/56) use Webex for delivering their online sessions, probably because Webex was suggested as the official tool for all public schools to use by the government. The vast majority of the teachers (78,6%) use online quizzes as a way to enhance the interaction with their students, less than half use online whiteboards (35,7%) and Padlet (35,7%) and some use brainstorming charts (17,9%), related videos (5,4%) and Kahoot (3,6%). It is worth mentioning that half of the respondents don't use any software or tool in order to create engaging content for their online teaching, whereas the rest use Canva (35,7%), Powtoon (14,3%), Google Drawings (7,1%) and Hot Potatoes (3,6%). Only 19 out of 56 teachers were aware of the Open Badges System as a validation method but are not using it, while the rest (37/56) were not aware of this method.

Regarding the issues that teachers have faced during their online sessions in relation to their student's motivation and fatigue, more than half (32/56) answered that their students had low motivation and 44 out of 56 responded that their students were more tired than during the face-to-face teaching. Concerning the students' achievements, more than half of the teachers (37 out

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of 56) noticed that the grades of their pupils were lower compared to those they earned during face-to-face teaching. Almost half of the teachers (42,9%) have noticed that learners with special educational needs have found online learning easier and the 1/3 said that the same applies for learners with physical disabilities (35,7%), previously high-achieving (35,7%) and neurodiverse learners (33,9%).

More than half of the teachers (32/56) answered that they were not aware of the GDPR guidelines. This seems quite odd since teachers were officially informed on these guidelines from the Personal Data Protection body. This result might be, because GDPR was mentioned in the questionnaire with the English acronym and not with the Greek one (ΓΚΠΔ). Regarding the steps that teachers took in order to avoid disruptive intrusions in their online classes, the majority verified the students' identities before accepting them in an online session (40/56) and avoided sharing the meeting link in social media platforms (39/56). the steps that teachers took in order to protect their students from online threats, the vast majority of them (83,9%) informed their students about what the possible online threats are.

The focus group was conducted with 5 teachers; and received mixed responses since 2 stated that their experience was positive and 3 that their experience was negative due to the fact that they needed some time to adapt, as didn't feel they had the means and knowledge, in order to respond adequately to this new way of teaching. It is worth mentioning that some teachers have noticed that students who participated more during a face-to-face class might not participate as much during an online class and vice versa. Regarding the difficulties and challenges that teachers faced when they adopted the online teaching most of the teachers mentioned that many households didn't have a computer or a tablet for every kid, so it was difficult to participate in classes just by using their smartphones (if they had one). Children didn't face many noticeable difficulties in regard to using a software or tool, but many teachers didn't have the right guidance and training, at least at the beginning. Some older teachers faced some issues regarding all the new software that they had to use, in order to deliver an online class.

Teachers were also asked if online teaching is the future of education, what areas/skills they would like to develop further in order to be better prepared as educators. The most common answer was to train teachers better in regard to using digital tools for delivering online classes and not have them experimenting with using a computer only during school hours. Another area that teachers need to be trained on is using digital tools for validating the students' knowledge and grading them (such as using online quizzes).

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Cyprus

In Cyprus, 40 educators were completed the questionnaire. Respondents were asked to rate from 1-Not Confident to 5-Very Confident on how confident they feel in regards to online teaching – the majority of the respondents (45%) stated that they feel Confident (3) teaching online. In regards to the various difficulties faced during teaching online, the lack of appropriate equipment ranked first by the respondents (70%), followed by bad internet connection (55%), lack of appropriate software (53%) and lack of digital skills and competences (45%).

Regarding the use of available tools and software, the majority of the respondents (48%) stated that their organization uses Moodle as their learning management system, whereas 40% of them stated that they do not use any learning management tools. Microsoft Teams (88%) and Zoom (56%) are the first options for the respondents to conduct their online teaching, followed by Skype (35%), Google Meet (25%) and Cisco Webex (3%). In regards to various software and apps to enhance the interaction with their learners during online teaching, online quizzes were the most popular option (85%), followed by online interactive boards (40%), brainstorming charts (35%) and Padlet (28%). However, a few respondents (13%) stated that they do not use any. Concerning the creation of engaging content and resources for online teaching, the majority of the respondents stated that they do not use any tools (60%). However, some of the respondents mentioned tools such as Canva (23%), Google Draw (13%), Powtoon (13%) and Wordwall (5%). In addition, 53% of the respondents were not aware of the Open Badges system as a validation method, 33% were aware of the Open Badges but not incorporated them into their practices, and only 15% were aware of them and using them in their teaching practices.

Managing their learners in the online environment was a challenging task for educators. Specifically, 68% reported that their students showed lower motivation compare to face-to-face setting, whereas only 5% of them stated that their students appeared more motivated. Regarding students' fatigue, more than half of the respondents (52%) mentioned that their students presented more fatigue compare to face-to-face teaching. In terms of students' achievement and performance, the majority of the respondents (58%) suggest that students' grades are lower compare to face-to-face teaching, 30% noted no changes in students' achievements, whereas only 12% of the respondents noted an improvement in students' grades compare to face-to-face teaching. In regards to some groups of students that might have benefited from online teaching, the majority of the respondents (55%) stated that learners from disadvantaged groups have been benefited from this transition, followed by previously low achieving learners (30%).

In terms of online safety and privacy, 63% of the respondents stated that they are aware of the GDPR guidelines to protect their learners' privacy, whereas 37% mentioned they are not. In order to protect their students' privacy and personal data, some of the measures implemented by the respondents are: not sharing students' photos or information without their consent (85%), using tools that are protecting students' personal data (53%), inform students about privacy issues (43%), requesting consent to record the session (43%) and allowing students to have their camera

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off (3%). In regards to avoid disruptive intrusions during online class, 73% of the respondents had set a password for accessing online meetings, 62% of them used a verification of participants' identity before accepting them in the online session and 43% avoid sharing the meeting in link in social media platforms.

In addition, to the questionnaire distribution, a virtual focus group was conducted with 5 educators who expressed an interest to discuss further their experiences and needs in relation to online teaching.

In regards to the difficulties/ challenges encountered the following challenges raised:

- Lack of appropriate equipment – bad internet connection, large families faced issues of accessing devices ('one device for 2-3 students')
- Support and communication were required also by parents, however parents who were lacking digital skills was also a challenge as they were not able to support their children.
- Harder to keep students online the same time as you would have them in school – hence, the teaching approach had to be adopted, and also the pace of delivery.
- Finding appropriate tools to deliver your lesson in an engaging and interactive way was a challenge at the beginning.

In terms of managing learners online, the following challenges were raised by the participants:

- Some students lost their motivation and found it hard to concentrate when being at home with so many distractions (TV, Games, etc.)
- At first students were attending the lesson with their camera switched off, but it was hard to tell if they were following the delivery of the lesson or if they were doing something else – all the educators are encouraging their students to switch their camera on, but students have the right to refuse.
- Online teaching makes it harder for the educator to monitor the progress of the learners, as you are not able to observe them in the class as you would have done in a classroom environment.
- A lot of students were presenting various gaps in their learning that would have been prevented in face-to-face education.

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4. Good Practices in relation to Online Teaching

This section aims to present and share good practices from each partner country in relation to online teaching:

United Kingdom

GOOD PRACTICE 1	
Name	EdTech Demonstrator programme
Description	The UK government funded this programme so that any publicly funded school or colleges could be put in touch with "demonstrator" schools or colleges. The demonstrator can support them in setting up a new online learning system and using technology effectively.
Key Stakeholders/ Provider (If applicable)	Schools and colleges
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://get-help-with-tech.education.gov.uk/EdTech-demonstrator-programme

GOOD PRACTICE 2	
Name	Oak National Academy
Description (50-70 words)	This website, set up for teachers by teachers in March 2020, supplies a year's worth of teaching materials aligned with the national curriculum. It also offers free teacher training workshops, on subject-specific topics, material development and classroom management topics (e.g. learner motivation). For school pupils, it has a hub with free video students so that pupils can catch up on lessons they've missed, or watch for revision.
Key Stakeholders/ Provider (If applicable)	Schools
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://www.thenational.academy/

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GOOD PRACTICE 3	
Name	Tauheedul Islam Boys' High School
Description (50-70 words)	This school has a large number of pupils with English as a Second Language, and was concerned about engagement if pupils were working alone at home. They used a number of support measures: • IT MOTs • Real-time checking of work • Pupils could type, use a stylus or work on paper and upload a picture of their work • Digital inking for prompt feedback • Staff training coordinator and bespoke staff training • Clear expectations
Key Stakeholders/ Provider (If applicable)	Schools
Level (Organisational, Regional, Local, National)	Organisational
Link/ Website	Department for Education case study (see references) p20-22

Germany

GOOD PRACTICE 1	
Name	Education portal "MUNDO"
Description	In view of the short-term need for digital teaching materials for schools, the Federal Government and the federal states have agreed to provide a media portal for freely accessible educational media and thus promote the development of a common state educational media infrastructure. On behalf of the 16 federal states, the Institute for Film and Image in Science and Teaching (FWU) has designed the joint media portal MUNDO. The portal, which is funded by the DigitalPakts Schule, provides all pedagogical experts, pupils and legal guardians with quality and licence-proven teaching media from different sources with free access from the start of the 2020/2021 school year. MUNDO (https://mundo. schule/) is continuously

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	being expanded to include new learning content and functionally expanded. The background exchange platform SODIX (https://www. sodix. de/) ensures that federal states, broadcasters and other content producers can make these educational media available and the federal states can import this content into their own regional portal.
Key Stakeholders/ Provider (If applicable)	Schools and colleges
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://mundo.schule/

GOOD PRACTICE 2	
Name	"So geht MEDIEN" – This is how MEDIA works
Description (50-70 words)	With videos, audios, quizzes, interactive maps and texts, the innovative website of ARD, ZDF and Deutschlandradio explains how media works and why public service broadcasting exists. The topics are designed for the classroom and offer complete lesson sequences with many ideas, in which the students themselves have to become active and produce small contributions themselves, for example with camera and microphone. "so geht MEDIEN" deliberately relies on the "medium" Internet to convey media competence. Digitization is advancing rapidly and many young people are primarily using their smartphones to get information. Ideally, a teacher uses "this is how MEDIEN goes" online in class and occasionally assigns tasks to pupils that they solve with their smartphone or tablet – for example, one of the many quizzes. Since schools cannot always be up to date with the latest technology, the vast majority of content is also available for download.
Key Stakeholders/ Provider (If applicable)	Schools
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://www.br.de/sogehtmedien/footernavi/sogeht-medien/das-projekt/index.html

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GOOD PRACTICE 3	
Name	Impulse for distance learning
Description (50-70 words)	The impulse paper is intended to provide teachers and seminar trainers with information on the didactic organization of "learning at a distance." A recording of an online seminar with the authors and interested guests is also available for each impulse: > As much empathy and relationship work as possible, as many tools and apps as necessary. > As much trust and freedom as possible, as much control and structure as necessary > As much simple technology as possible, as much new technology as needed > As much asynchronous communication as possible, as much synchronous as necessary. > As much open project work as possible, as many small-scale exercises as necessary > As much peer feedback as possible, as much feedback from teachers as needed
Key Stakeholders/ Provider (If applicable)	Schools
Level (Organisational, Regional, Local, National)	Organisational
Link/ Website	https://www.schulministerium.nrw/impulsefuer-das-lernen-auf-distanz

Romania

GOOD PRACTICE 1	
Name	'Relevant CRED-Curriculum, education open to all' - SMIS code 2014+: 118327 Project co-financed by the European Social Fund through the Human Capital Operational Program 2014-2020
Description	The project aims to develop curricular empowerment/training of 55,000 primary and secondary school teachers for a methodological approach focused on key competencies, in line with the new curriculum and adapting learning activities to the specific needs of

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	each student, including those at risk of dropping out of school.
Key Stakeholders/ Provider (If applicable)	
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://www.educred.ro/

GOOD PRACTICE 2	
Name	Training program dedicated to high school teachers
Description (50-70 words)	The Partners in Education Program (PIE) is a training program dedicated to high school teachers, which aims to acquire the necessary skills in working with students in the current context of online teaching.
Key Stakeholders/ Provider (If applicable)	High school teachers/ Institute of Education
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://www.ise.ro/program-formare-cadre-didactice-inv-liceal

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GOOD PRACTICE 3	
Name	Digital training with CCD Bucharest and different counties in Romania
Description (50-70 words)	Launched in October 2020, the 50 online workshops with various topics invite teachers twice a week to discuss topics of interest and to discover new secrets of educational platforms and online tools. It encourages teachers to ask questions, to look for answers, to share ideas, to stay connected in the teacher learning community during an online workshop marathon. CCD created a space in which teachers should express successes but also failures, to find together resources for quality, resilience, balance, compassion and help.
Key Stakeholders/ Provider (If applicable)	Schools
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://www.ccd-bucuresti.org/index.php/ro/formarecontinua/scoala-online/ateliere-online

GOOD PRACTICE 4	
Name	Continuing education programs approved by the Ministry of Education and Research
Description (50-70 words)	Part of the continuing education programs for teachers approved by the Ministry of Education and Research, endorsing blended and online learning courses. The aim is to assure continue education through accredited, approved and partnership programs, both local and national level.
Key Stakeholders/ Provider (If applicable)	Schools
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://www.ccd-bucuresti.org/index.php/ro/formarecontinua/scoala-online/ateliere-online

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GOOD PRACTICE 5	
Name	Digital Guide
Description (50-70 words)	Digital Guide is the only educational project dedicated to teachers and future teachers about integrating technology in the classroom. Through online courses the provider aims to Improving digital educational skills; modernizing the way of teaching ideas, abilities, skills; provide education related digital citizenship and promoting the values of cohesion at the level of local communities, through community projects coordinated by teachers.
Key Stakeholders/ Provider (If applicable)	Schools
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://indreptardigital.ro/despre-program/

Greece

GOOD PRACTICE 1	
Name	T4E: Fast-paced teacher training in the implementation of distance education (holistic approach)
Description (50-70 words)	The aim of the action was to utilize the acquis of distance education and to further cultivate the knowledge and digital skills of teachers in pedagogical and didactic approaches, with the support of modern digital media, used in technologically enriched living conditions as well as in distance learning. The T4E training program utilized modern (teleconferencing) and asynchronous distance learning technologies (eClass and e-Me platform). The duration of the training program was 20 hours, which were implemented through synchronous and asynchronous teaching within 8 calendar weeks. Specifically, 10 hours of distance training were provided through modern e-learning tools (Webex)

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	and 10 hours of asynchronous training on the eClass and e-Me platforms.
Key Stakeholders/ Provider (If applicable)	All Teachers in Greece
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://t4e.sch.gr/

GOOD PRACTICE 2	
Name	Teacher Training for the Exploitation and Implementation of Digital Technologies in Teaching Practice (Second Level ICT Training)
Description (50-70 words)	In Greece, the need to upgrade ICT knowledge and skills of the educational community was initially approached with the training of teachers on basic ICT skills during the period 2000-2004, known as "A-Level ICT Training" and then with the training in the Exploitation and Implementation of ICTs in the teaching practice, known as "Training A 'level ICT". The Second Level ICT Training ", which is implemented on behalf of the Ministry of Education, Research and Religion, concerns the continuation and evolution of the First Level ICT Training, which it updates, upgrades and enriches as to the content and extends to all specialties of teachers. The training is addressed to teachers of all disciplines and specialties of primary and secondary education.
Key Stakeholders/ Provider (If applicable)	All Teachers in Greece
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://e-pimorfosi.cti.gr/

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GOOD PRACTICE 3	
Name	Digital Education
Description (50-70 words)	The E-Learning platform of the Training and Lifelong Learning Center of the National and Kapodistrian University of Athens offers education programs which are addressed to teachers (permanent, substitutes, etc.) and graduates of pedagogical and teaching schools. The purpose of this Program is to get acquainted with the required knowledge and applied skills in the field of digital learning and teaching (digital education) in formal and non-formal education.
Key Stakeholders/ Provider (If applicable)	All Teachers in Greece
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://elearningekpa.gr/courses/digital-education

GOOD PRACTICE 4	
Name	STEM in Education: Learning Tools and Developing Activities
Description (50-70 words)	The purpose of this program is to educate participants in the STEM methodology and to create activities based on it. The holistic approach of the four disciplines integrated in STEM is the most modern educational practice, which is based on teamwork and the development of analytical thinking to solve complex combination problems. The program is addressed to University / TEI graduates of the country or abroad. In particular, the program is aimed at current and future teachers of all levels in public and private education, graduates of pedagogical and teaching schools of all specialties as well as graduates of schools of science, technology and engineering.
Key Stakeholders/ Provider (If applicable)	All Teachers in Greece
Level (Organisational, Regional, Local, National)	National

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Link/ Website	https://elearningekpa.gr/courses/stem-stin-ekpaideusi-ekmathisi-ergaleion-kai-anaptuksi-drastiriotiton

Cyprus

GOOD PRACTICE 1	
Name	Funding for Laptops and Tablets
Description (50-70 words)	A funding up to €400 was available for students and teachers who wish to purchase a laptop or tablet to support their online and teaching practices.
Key Stakeholders/ Provider (If applicable)	Ministry of Education and Culture
Level (Organisational, Regional, Local, National)	National
Link/ Website	http://www.moec.gov.cy/2020_2021_epichorigisi_agora_laptop.html

GOOD PRACTICE 2	
Name	E-Learning Schools Platform
Description (50-70 words)	E-Learning Schools platform offers free access to supporting material and resources for teachers, students and parents/ guardians in relation to online teaching and learning.
Key Stakeholders/ Provider (If applicable)	Ministry of Education and Culture
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://elearning.schools.ac.cy/index.php/el/

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GOOD PRACTICE 3	
Name	Online Seminar 'Digital Education in Cyprus'
Description (50-70 words)	An online seminar for educators and teachers in order to upgrade their skills and competences regarding online teaching, and to share good practices.
Key Stakeholders/ Provider (If applicable)	Ministry of Education and Culture
Level (Organisational, Regional, Local, National)	National
Link/ Website	http://www.moec.gov.cy/psifiaki_ekpaidefsi.html

GOOD PRACTICE 4	
Name	Online Learning Transition – Manuals and FAQs
Description (50-70 words)	Free access to resources and materials for educators in relation to the transition to online learning.
Key Stakeholders/ Provider (If applicable)	European University of Cyprus
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://euc.ac.cy/el/online-learning-transition/

GOOD PRACTICE 5	
Name	Seminar 'How to teach physical sciences through online teaching'
Description (50-70 words)	A seminar aims to introduce educators of physical sciences on different ways and tools, in order to deliver engaging and practical sessions online.
Key Stakeholders/ Provider (If applicable)	Cyprus Pedagogical Institute
Level (Organisational, Regional, Local, National)	National
Link/ Website	https://www.pi.ac.cy/pi/index.php?option=com_content&view=article&id=3203&Itemid=124&lang=en

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5. Conclusion/ Summary

This report is part of the European Erasmus+ Project DigiTeal – Digital Teaching Literacy, and provides an overview of the state of art regarding online teaching partner countries of this project – United Kingdom, Cyprus, Germany, Romania and Greece – presenting also the needs and experiences of educators in relation to online teaching practices.

Specifically, various needs in terms of using digital technologies for teaching, but also to manage learners effectively in a digital environment have raised. Additionally, good practices from each country have been shared to promote the exchange of ideas and initiatives among the partner countries. The information presented in this report, will be used as a reference for the design of the DigiTeal Framework, which aims to present key skills and competences to be achieved by the educators in relation to online teaching.

6. References

For full list of references, please refer to the individual national reports.

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