

REPORT ON THE DIGITAL NEEDS ANALYSIS TOOL FOR TEACHERS (DNATT)

**Methodological study of a pilot for the self-assessment of
the digital competence of teachers in South East Europe**

Margarida Lucas

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1 INTRODUCTION

This report presents the methodological tools used in the scope of the project “Support to digital skills and competences for educators in South East Europe”. The project aimed to analyse: i) the digital competences of teachers in participating South East Europe (SEE) countries; ii) the use of relevant educational technologies and iii) teachers’ needs for continuing professional development (CPD) that addresses digital competences.

In this context, the Digital Needs Analysis Tool for Teachers (DNATT) was designed and piloted in 5 countries: Albania, Moldova, Montenegro, North Macedonia and Serbia. The DNATT is based on the European Commission Joint Research Centre’s Check-In tool that enables teachers to reflect on their digital practice, self-assess their digital competence and guide them in further developing their skills.¹ The DNATT adapts the Check In tool to extend it into an instrument for national and school needs analysis and planning.

This report details the survey design together with the description of how it was developed, how to use it and lessons learned from the pilot.

The five national reports, together with the questionnaires and the cross-country report can be found at: <https://openspace.etf.europa.eu/resources/pilot-needs-analysis-tool-digital-competences-2020>

2 SURVEY DESIGN

2.1 The Check-In

The survey used in this study is based on the Check-In tool developed by one of the European Commission’s Joint Research Centre on the basis of the conceptual framework [DigCompEdu](#) (Redecker, 2018). The DigCompEdu framework is the result of a series of discussions and decisions with experts and practitioners, based on a literature review and synthesis of existing documents and instruments at European and international level (Caena & Redecker, 2019). The framework distinguishes six different areas in which teachers’ digital competence is expressed in a total of 22 competences, represented in Figure 1.

The Check-In tool includes 22 statements, one for each DigCompEdu competence. For each of these statements, respondents are asked to indicate to what extent the statement reflects their own practice by selecting one of five response options. The five options are organized progressively, reflecting the overall progression logic of DigCompEdu (Figure 2).

¹<https://ec.europa.eu/jrc/en/digcompedu/self-assessment>

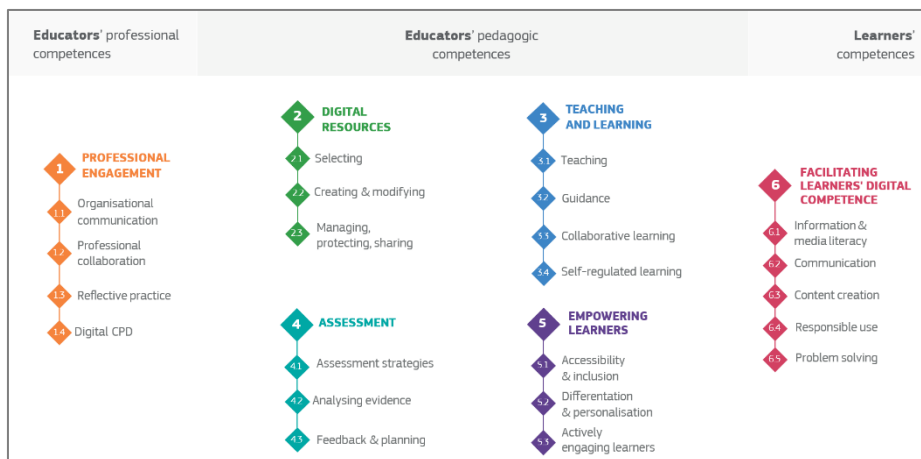


Figure 1. Competence areas and competences proposed by the DigCompEdu framework (Redecker, 2018).

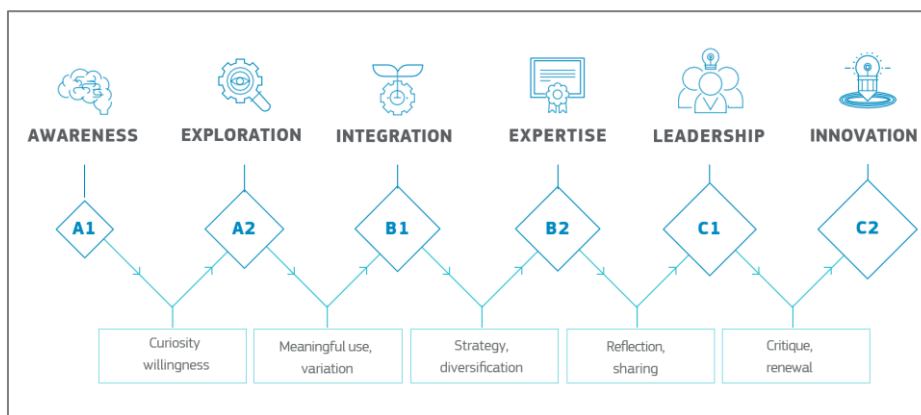


Figure 2. The DigCompEdu progression model (Redecker, 2018).

Each answer is scored from 0 to 4 and the total maximum score is 88 points. The cut-off scores attributed to each proficiency level are presented in Table 1 and were confirmed as valid by different studies (Benali, Kaddouri & Azzimani, 2018; Ghomi & Redecker, 2019; Lucas, Bem-haja, Siddiq, Moreira & Redecker, 2021). These studies also confirm the reliability and internal consistency of the tool.

Table 1. Cut-off scores attributed to each proficiency level.

Scores	Proficiency levels
Less than 20	A1 – newcomer
Between 20 and 33	A2 – explorer
Between 34 and 49	B1 – integrator
Between 50 and 65	B2 – expert
Between 66 and 80	C1 – leader
More than 80	C2 – pioneer

Upon submission, the Check-In generates a feedback report. The report indicates global scores and scores per competence area so that teachers are informed about their strongest and weakest areas and can identify their own professional development needs. These features were incorporated into DNATT.

In addition, DNATT includes items addressing personal information (e.g. age, teaching experience) and i) use of different digital tools/activities during the COVID19 lockdown; ii) the CPD teachers had in the last 12 months; iii) the impact such CPD had upon their work; iv) teachers' needs for CPD that addresses digital competences and iv) teachers' preferred modes of CPD. The questionnaire is attached as an appendix to this report.²

The questions about CPD were formulated in such a manner as to map directly with the digital competences as defined by DigCompEdu. This makes it possible to explore the relationship between CPD experiences and needs and particularly digital competences.

The survey was implemented on EUSurvey, the European Commission's survey platform.

2.2 Design and composition of the sample

The pilot was small scale, consisting of 2964 teachers, an average of 593 in each country (cf. Table 2). A school-based, random cluster sampling approach was adopted: within each country a sample of 12 general and 12 vocational schools was drawn randomly, stratified according to size (small and large). The measure of size was based on the number of teachers per school, varying according to each country.

A list of replacement schools was sampled at the same time, following the same criteria. This meant each sampled school was assigned two replacement schools. For each school, the school immediately following in the sampling list was designated as the first replacement school.

2.3 Sample and procedure

The pilot study sample consisted of 2964 teachers distributed across the 5 countries. The demographic data of the sample are presented in Table 2.

Table 2. Composition of samples in participating countries

Country	Albania	Moldova	Montenegro	North-Macedonia	Serbia
Total number of teachers	851	425	475	524	689
General education	358	209	159	235	293
Vocational education	493	216	316	289	396

A national expert was assigned in each country to coordinate the pilot at national level. The national expert, working with the relevant national authorities, was responsible for inviting schools to participate in the study. The survey was implemented between the 1st and 3rd week of November 2020.

² The Serbian version of the Check-In tool was slightly modified to accommodate a greater alignment with the country's Digital Competence Framework – Teacher for a Digital Age. Changes were made in Competence Area 3 – Teaching and they are identified in Annex A in blue. Changes do not compromise the conceptuality of the tool. See Annex 1.

The master questionnaire was translated into the five national languages. The translations were validated with a small number of teachers and with the national authorities.³

3. LESSONS LEARNED FROM THE PILOT

The pilot has made it possible to analyse i) the digital competences of teachers in five countries; ii) the practice of teachers in using digital tools and iii) needs for CPD that addresses digital competences. The five national reports show that the tool offers a relatively quick and economic method to obtain a national picture of digital competence and CPD needs. The information about the use of particular digital technologies in teaching and learning, such as virtual classroom tools, helps us to understand what in practice teachers have actually been able to do. The analysis carried out so far suggests that there is a relationship between competence, professional development and digital teaching practice but that it is not simple. So for example, teachers report relatively high levels of competence in those areas of digital competence in which they have been particularly active during the lock down: it seems as though competence is strong because it has been supported by both CPD and by practice. However, even though competence is relatively strong, teachers still regard this as an area of relatively high need for training. It seems that even if teachers self-assess their competence highly, they still see the need to improve their practical mastery and their confidence. Furthermore, just because teachers believe that they have digital competence this may not carry through into their actual teaching practice – since other factors such as access to computers, internet or the curriculum will also be shaping their teaching behaviour.

The tool does permit policy makers at both national and cross-country levels to make comparisons about the digital competence of teachers in different educational sectors and schools and to monitor the development of digital competence over time. It also gives an indication of the professional development priorities of teachers. If there is sufficient participation at the level of a school and if analysis is undertaken at this level then it would be possible also for schools to monitor their progress and to set their own workforce development plans.

As part of the pilot, 6 schools received reports that provided an analysis of the responses of teachers within their school. These reports informed schools about their teachers' digital competence in different areas of their professional pedagogical activity and the identification of CPD priority levels. Schools were debriefed and consulted about the value of the reports. Schools confirmed that survey did provide them with relevant information, such as priority training needs, and that they could combine this information with other information, for example, other surveys. Some schools reported that the reports would inform their medium and long-term planning for professional development. Some schools said that they would, as a consequence of the analysis, seek to facilitate peer learning so that teachers could share different digital competences and pedagogical practices. Schools reported that reports were particularly relevant to addressing the challenge of distance digital learning – since they provided guidance on the skills needed. Schools confirmed that their teachers particularly valued the detailed, individual feedback that their teachers received along with the report. This feedback, it was reported, motivates teachers and encourages them to collaborate to develop

³ The questionnaires can be found attached to the national reports at <https://openspace.etf.europa.eu/resources/pilot-needs-analysis-tool-digital-competences-2020>

their digital pedagogic practice. Schools also called for improved formal recognition and accreditation of teachers' digital competences in order to motivate and valorize such professional learning.

In order to evaluate further the potential value of this tool it is desirable to:

- Explore with national agencies and ministries how the information gathered can best be used to inform policy making in relation to strategies for teacher workforce development and CPD planning
- Explore with school managers and with local education authorities how the information gathered can best inform school, municipal or regional level policy making and planning
- Consider how other ministries, national agencies, school managements and local authorities might have access to the tool so that they can make use of it and carry out worthwhile analysis to inform their decision making and how such use might be coordinated and supported
- Explore whether further statistical analysis might lead to an improved understanding of the relationships between digital competence, teaching practice and professional development.
- Consider the use of alternative survey platforms. The EU Survey was not available in all national languages (which meant an absence of translated message keys/command buttons). In addition, the EU Survey posed different challenges in the setting up of each survey and related data extraction.
- Review the validity of selected items with teachers in order to check their consistency and reliability.

4. HOW DNATT CAN BE USED IN THE FUTURE

It is essential that the actors consider whether DNATT is relevant to their objectives and whether it is appropriate for their teachers and organisations. It is possible that some countries or organisations may find it useful to adapt DNATT for their own environment or to make use of just some parts of the tool. Below are given some examples of how DNATT can be used at different levels:

- **individual teachers** conduct a self-assessment and receive an individual feedback report. This report makes explicit each teacher's digital competence; identifies his/her strengths and weaknesses regarding specific competence areas or competences. This process can help an individual teacher to reflect upon their own practice and to plan their own CPD. Professional development might take the form of informal learning from colleagues or through formal training on-line or face to face. However, it cannot be guaranteed that teachers will act in this way or that schools and training providers will be able to support them to successfully realise their professional development aspirations. Making self-assessment a regular process and

providing in-school support and feedback for individual professional development planning should assist the process.

- **schools** can use the DNATT to map their teachers' digital competences; to inform school-wide decisions about priorities for staff development and to plan CPD. School-level planning can complement the individual planning described above. Information about the competences of different staff can help school managers to target professional development better and also to develop opportunities to bring teachers together in collaboration and peer learning. Teachers at the Leader and Pioneer levels of proficiency may be invited to support those with lower levels of proficiency, e.g. within subject departments. Monitoring competence and teacher practices over time will help schools to set targets and to evaluate the effectiveness of their professional development. This information will only be useful if schools have the resources to act upon it, for example, by commissioning CPD or by working with national agencies or with other schools to share practice or resources. Schools may be able to combine the use of DNATT with other processes, such as self-evaluation, and with other tools, such as the SELFIE tool⁴ to evaluate organisational digital preparedness.
- **ministries and national agencies** can use the DNATT to inform decision-making about the design and funding of professional development. The survey can be used to diagnose teachers' digital competence and inform decision-making regarding priorities in relation to CPD. DNATT can also be used to map the distribution of digital competences across schools and sectors and to monitor progress over time. It may be possible to adapt the DNATT so that it could be used to evaluate the effectiveness of CPD, for example for tracking the competences of teachers that participate in CPD. In general, DNATT should help national policy makers to pursue more differentiated policies, for example, setting targets in relation to particular areas of digital competences or mobilising particular schools or groups of teachers to take leadership roles in promoting new digital pedagogies. National policy makers should consider how DNATT might be combined with other monitoring and self-assessment tools such as SELFIE for schools.
- **International platforms and development organisations** can use the DNATT as a tool for international collaboration to identify common priorities for joint training provision, to explore opportunities for international recognition of competences and to develop international standards or frameworks for digital competences.

5. WAYS FORWARD

1. The five questionnaires in five national languages should be made available to schools and national agencies in the five piloting countries and elsewhere in South East Europe so that they may freely use them or adapt them for use
2. Where schools or national agencies already have tools for assessing digital competence and assessing needs, they may want to review their own tools in the light of this pilot.

⁴ The Check-In has been revised and upgraded to a new version called SELFIE for Teachers, which is currently being piloted in four European countries. It is expected that a consolidated/validated version is available in the next school year as a new dimension of the SELFIE for Schools tool.

3. National users should review whether it suits them to continue to use the EU Survey Tool – or to adapt the questionnaire so that it can be used with other survey tools.
- 4.
5. National agencies and schools that are using the survey should network with one another in order to spread know-how and support learning about how best to implement the surveys and make use of the information.
6. Schools should be given support and advice on how to make best use of the DNATT, how to combine it with other tools, how to engage teachers in their own professional development and how to deepen teachers' understanding of digital competence.
7. National and international agencies should support the sharing of good practice about how best to use and combine different survey tools at different levels
8. ETF should share the tools and the know-how from this pilot to enable schools and agencies in other countries to evaluate this tool and, if appropriate, make use of it
9. The DigCompEdu component of the DNATT should be kept aligned to new versions of the DigCompEdu/Check-in tool, the latter being referred as “SELFIE for Teachers”
10. National and international qualification authorities should consider developing diplomas to formally recognise teachers' digital competences as defined in the DigCompEdu framework.
11. National authorities and international development organisations should develop and signpost professional development resources and programmes in such a way that they are aligned to the digital competences as defined in the DigCompEdu framework.

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English master questionnaire

DigCompEdu Check-In

This survey is based on the [European Digital Competence Framework for Educators \(DigCompEdu\)](#). Its purposes are (i) to identify your digital competences, (ii) to explore the continuing professional development (CPD) you had in the last 12 months and what impact it had upon your work and (iii) to identify your needs for CPD that addresses digital competences. After submitting the survey, you will receive detailed feedback with useful tips to improve your digital competences.

1. Select the school you teach at.

Radio button question (single choice from a list of national schools – N= 24 + replacement schools)

Area 1: Professional Engagement

Teachers' digital competence is expressed in their ability to use digital technologies not only to enhance teaching, but also for their professional interactions with colleagues, students, parents and other interested parties, for their individual professional development and for the collective good and continuous innovation in the organisation and the teaching profession. This is the focus of Area 1.

Please consider where you stand in view of the following long-term goals.

The answer options are organised by increasing level of engagement with digital technologies. Please choose the option that best reflects your current practice.

- 1. I systematically use different digital channels to enhance communication with students, parents and colleagues (e.g. emails, blogs, the school's website, apps)**
 - I rarely use digital communication channels
 - I use basic digital communication channels, e.g. e-mail
 - I combine different communication channels, e.g. e-mail and class blog or school website
 - I systematically select, adjust and combine different digital solutions to communicate effectively
 - I reflect on, discuss and proactively develop my communication strategies

- 2. I use digital technologies to work together with colleagues inside and outside my educational organization**
 - I rarely have the opportunity to collaborate with other teachers
 - Sometimes I exchange materials with colleagues, e.g. via e-mail
 - Among colleagues, we work together in collaborative environments or use shared drives
 - I exchange ideas and materials, also with teachers outside my organisation, e.g. in an online teacher network

- I jointly create materials with other teachers in an online network

3. I actively develop my digital teaching skills

- I rarely have the time to work on my digital teaching skills
- I improve my skills through reflection and experimentation
- I use a range of resources to develop my digital teaching skills
- I discuss with peers how to use digital technologies to innovate and improve educational practice.
- I help colleagues in developing their digital teaching strategies

4. I participate in online training opportunities (e.g. online courses, MOOCs, webinars...)

- This is a new area that I have not yet considered
- Not yet, but I am definitely interested
- I have participated in online training once or twice
- I have tried out various different online training opportunities
- I frequently participate in all kinds of online training

Area 2: Digital Resources

One of the key competences any teacher needs to develop is to identify good educational resources, and to modify, create and share digital resources that fit their learning objectives, student group and teaching style. At the same time they need to be aware of how to responsibly use and manage digital content, respecting copyright rules and protecting personal data. These issues are at the heart of Area 2.

Please consider where you stand in view of the following long-term goals.

The answer options are organised by increasing level of engagement with digital resources. Please choose the option that best reflects your current practice.

1. I use different internet sites and search strategies to find and select a range of different digital resources

- I only rarely use the internet to find resources
- I use search engines and educational platforms to find relevant resources
- I evaluate and select resources on the basis of their suitability for my learner group
- I compare resources using a range of relevant criteria, e.g. reliability, quality, fit, design, interactivity, appeal
- I advise colleagues on suitable resources and search strategies

2. I create my own digital resources and modify existing ones to adapt them to my needs

- I do not create my own digital resources
- I do create worksheets with a computer, but then I print them
- I create digital presentations, but not much more
- I create and modify different types of resources
- I set up and adapt complex, interactive resources

3. I effectively protect sensitive content, e.g. exams, students' grades, personal data

- I do not need to do that, because the school takes care of this
- I avoid storing personal data electronically
- I protect some personal data
- I password protect files with personal data
- I comprehensively protect personal data, e.g. combining hard-to-guess passwords with encryption and frequent software updates

Area 3: Teaching and Learning

The most fundamental competence of the whole DigCompEdu framework is to design, plan and implement the use of digital technologies in the different stages of the teaching and learning process. However, when doing this, the aim must be to shift the focus of the lesson from teacher-led to student-centred processes. This is the real power of digital technologies and the focus of Area 3.

Please consider where you stand in view of the following long-term goals.

The answer options are organised by increasing level of engagement with digital technologies in teaching and learning. Please choose the option that best reflects your current practice.

1. I carefully consider how, when and why to use digital technologies in class, to ensure that they are used with added value

- I do not or only rarely use technology in class
- I make basic use of available equipment, e.g. digital whiteboards or projectors
- I use a variety of digital strategies in my teaching
- I use digital tools to systematically enhance teaching
- I use digital tools to implement innovative pedagogic strategies

I use digital technologies in class

- I do not or only rarely use technology in class
- I make basic use of available equipment, e.g. digital whiteboards or projectors
- I use a variety of digital strategies in my teaching
- I use digital tools to systematically enhance teaching
- I carefully consider how, when and why to use digital technologies in class, to ensure that they are used with added value

2. I monitor my students' activities and interactions in the collaborative online environments we use

- I do not use digital environments with my students
- I do not monitor student activity in the online environments we use
- I occasionally check on them and their discussions
- I regularly monitor and analyse my students' online activity
- I regularly intervene with motivating or corrective comments

I facilitate my students' activities and interactions in the collaborative online environments we use

- I do not use digital environments for teaching and supporting learning of my students
- I do not facilitate student activity in the online environments we use
- I occasionally post activities for students and facilitate their discussions
- I regularly facilitate and analyse my students' online activity
- I regularly initiate meaningful interactions with my students and among them

3. When my students work in groups or teams, they use digital technologies to acquire and document evidence

- My students do not work in groups
- It is not possible for me to integrate digital technologies into group work
- I encourage students working in groups to search for information online or to present their results in digital format
- I require students working in teams to use the internet to find information and present their results in a digital format
- My students exchange evidence and jointly create knowledge in a collaborative online space

When my students work in groups or teams, they use digital technologies

- My students do not work in groups
- It is not possible for me to integrate digital technologies into group work
- I encourage students working in groups to search for information online or to present their results in digital format
- I require students working in teams to use the internet to find information and present their results in a digital format
- My students often work collaboratively (exchange evidence and jointly create knowledge in a collaborative online space)

4. I use digital technologies to allow students to plan, document and monitor their learning themselves (e.g. quizzes for self-assessment, ePortfolios for documentation and showcasing, online diaries/blogs for reflection...)

- Not possible in my work environment
- My students do reflect on their learning, but not with digital technologies
- Sometimes I use, for example, quizzes for self-assessment
- I use a variety of digital tools to allow learners to plan, document or reflect on their learning
- I systematically integrate different digital tools to allow learners to plan, monitor and reflect on their progress

I use digital technologies to foster empower students to plan, document and monitor their learning themselves (e.g. quizzes for self-assessment, ePortfolios for documentation and showcasing, online diaries/blogs for reflection...)

- It is not possible for students to reflect on their learning in my work environment
- My students do reflect on their learning, but not with digital technologies

- Sometimes I use some digital tool to demonstrate self-assessment (for example, quizzes)
- I recommend a variety of digital tools to empower learners to plan, document or reflect on their learning
- I systematically integrate different digital tools to support learners to plan, monitor and reflect on their progress

Area 4: Assessment

Digital technologies can enhance existing assessment strategies and give rise to new and better assessment methods. Additionally, by analysing the wealth of (digital) data available on individual student's (inter-)actions, teachers can offer more targeted feedback and support. Area 4 addresses this shift in assessment strategies.

Please consider where you stand in view of the following long-term goals.

The answer options are organised by increasing level of engagement with digital assessment. Please choose the option that best reflects your current practice.

1. I use digital assessment formats to monitor student progress

- I do not monitor students' progress
- I do monitor students' progress regularly, but not with digital means
- Sometimes I use a digital tool, e.g. a quiz, to check on students' progress
- I use a variety of digital tools to monitor student progress
- I systematically use a variety of digital tools to monitor student progress

2. I analyse all data available to me to timely identify students who need additional support

"Data" includes: students' engagement, performance, grades, attendance; activities and social interactions in (online) environments; "Students who need additional support" are: students who are at risk of dropping out or underperforming; students who have learning disorders or specific learning needs, students who lack transversal skills, e.g. social, verbal or study skills.

- These data are not available and/or it is not my responsibility to analyse them
- I only analyse academically relevant data, e.g. performance and grades
- I also consider data on student activity and behaviour to identify students who need additional support
- I regularly screen all available evidence to identify students who need additional support
- I systematically analyse data and intervene in a timely manner

3. I use digital technologies to provide effective feedback

- Feedback is not necessary in my work environment
- I do provide feedback to students, but not in digital format
- Sometimes I use digital ways of providing feedback, e.g. automatic scores in online quizzes, comments or "likes" in online environments
- I use a variety of digital ways of providing feedback

- I systematically use digital approaches to provide feedback

Area 5: Empowering learners

One of the key strengths of digital technologies in education is their potential for boosting the active involvement of students in the learning process and their ownership of it. Digital technologies can furthermore be used to offer learning activities adapted to each individual student's level of competence, their interests and learning needs. At the same time, however, care must be taken not to exacerbate existing inequalities (e.g. in access to digital technologies) and to ensure accessibility for all students, including those with special learning needs. Area 5 tackles these issues.

Please consider where you stand in view of the following long-term goals.

The answer options are organised by increasing focus on students' individual learning needs. Please choose the option that best reflects your current practice.

- 1. When I create digital assignments for students I consider and address potential digital problems (e.g. equal access to digital devices and resources; interoperability and conversion problems; lack of digital skills)**
 - I do not create digital assignments
 - My students do not have problems with using digital technology
 - I adapt the task so as to minimize difficulties
 - I discuss possible obstacles with students and outline solutions
 - I allow for variety, e.g. I adapt the task, discuss solutions and provide alternative ways for completing the task

- 2. I use digital technologies to offer students personalised learning opportunities (e.g. I give different students different digital tasks to address individual learning needs, preferences and interests)**
 - In my work environment, all students are required to do the same activities, irrespective of their level
 - I do provide students with recommendations for additional resources
 - I provide optional digital activities for those who are advanced or lagging behind
 - Whenever possible, I use digital technologies to offer differentiated learning opportunities
 - I systematically adapt my teaching to link to students' individual learning needs, preferences and interests

- 3. I use digital technologies for students to actively participate in class**
 - In my work environment it is not possible to actively involve students in class
 - I do involve students actively, but not with digital technologies
 - When instructing, I use motivating stimuli, e.g. videos, animations, cartoons
 - My students engage with digital media in my classes, e.g. electronic worksheets, games, quizzes
 - My students systematically use digital technologies to investigate, discuss and create knowledge

Area 6: Facilitating Learners' Digital Competence

The ability to facilitate students' digital competence is an integral part of teachers' digital competence and at the heart of Area 6.

Please consider where you stand in view of the following long-term goals.

The answer options are organised by increasing level of engagement in fostering students' digital competence. Please choose the option that best reflects your current practice.

1. I teach students how to assess the reliability of information and to identify misinformation and bias

- This is not possible in my subject or work environment
- I occasionally remind them that not all online information is reliable
- I teach them how to discern reliable and unreliable sources
- I discuss with students how to verify the accuracy of information
- We comprehensively discuss how information is generated and can be distorted

2. I set up assignments which require students to use digital means to communicate and collaborate with each other or with an outside audience

- This is not possible in my subject or work environment
- Only on rare occasions are my students required to communicate or collaborate online
- My students use digital communication and cooperation mainly among each other
- My students use digital ways to communicate and to cooperate with each other and with an external audience
- I systematically set assignments that allow students to slowly expand their skills

3. I set up assignments which require students to create digital content (e.g. videos, audios, photos, digital presentations, blogs, wikis...)

- This is not possible in my subject or work environment
- This is difficult to implement with my students
- Sometimes, as a fun activity
- My students create digital content as integral part of their study
- This is an integral part of their learning and I systematically increase the level of difficulty to further develop their skills

4. I teach students how to behave safely and responsibly online

- This is not possible in my subject or work environment
- I inform them that they have to be careful with relaying personal information online
- I explain the basic rules for safely and responsibly acting in online environments
- We discuss and agree on rules of conduct
- I systematically develop my students' use of social rules in the different digital environments we use

5. I encourage students to use digital technologies creatively to solve concrete problems (e.g. to overcome obstacles or challenges emerging in the learning process)

- This is not possible with my students, in my work environment
- I rarely have the opportunity to foster students' digital problem solving
- Occasionally, whenever an opportunity arises
- We often experiment with technological solutions to problems
- I systematically integrate opportunities for creative digital problem solving

About yourself

1. How old are you?

- Under 25
- 25-29
- 30-39
- 40-49
- 50-59
- 60 or more
- Prefer not to say

2. Including this school year, for how many years have you been teaching?

- 1-3
- 4-5
- 6-9
- 10-14
- 15-19
- 20 or more
- Prefer not to say

3. Which of the following type of subjects do you mainly teach?

- General academic subjects, e.g. mathematics, languages
- Vocational or professional subjects, e.g. engineering, business administration
- Other

4. During the COVID19 lockdown, how often did you use the following digital tools/activities?

Answer options: Never; once a week; three times a week; every day.

Virtual classroom software (e.g. Ms Teams, Google Classroom, Moodle)

Synchronous video-communication tools (e.g. Zoom, Skype, WhatsApp, Facebook live)

Sharing and exchanging of documents ("cloud services" e.g. Basecamp Dropbox, Google Drive, online editors for collaborative artefacts)

Sharing your (the teacher's) screen (screen casting), for example, to make presentations or set tasks

Brainstorming, quizzes or polls (e.g. mind-map, multiple-choice questionnaires for (self-assessment))
Planning and organisational tools (e.g. Mail and Calendar, education management systems to communicate with schools, pupils and parents)
Watching instructional videos and/or audios (e.g. online library)
Creating and broadcasting videos and/or audios (e.g. YouTube)
Sharing and exchanging of documents and text messages, for example, by email or websites or social media (e.g. Facebook, Whatsapp)

Continuing Professional Development (CPD)

The COVID19 compelled teachers to switch to distance and online teaching and to make use of various digital technologies. This section explores what CPD you had in the last 12 months that developed your digital competences and what impact it upon your work.

Please select the option which best describes how much you agree with the statement.

- 1. Over the last 12 months, I have participated in online CPD to develop my digital competences.**

Answer options: Never/On one occasion/on a few occasions/many times

- 2. Over the last 12 months, I have been assisted by other teachers or advisors in my school to develop my digital competences.**

Answer options: Never/On one occasion/on a few occasions/many times

- 3. If you have received other support or instruction to improve your digital competences over the last 12 months please describe below:**

Open question

- 4. How would you describe your experience of the CPD that addressed your digital competences undertaken in the past 12 months?**

Answer options: Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree; NA = not applicable

I was encouraged by my school to participate in CPD

I selected the CPD based on my personal development needs

- 5. How would you describe the impact of the CPD relating to digital competences that you participated in?**

Answer options: Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree; NA = not applicable

The CPD has helped me to communicate digitally with students and parents

The CPD has helped me to collaborate digitally with colleagues

The CPD has helped me to find, adapt and create digital resources that serve different learning tasks and different learners

The CPD has helped me to manage and protect sensitive data and content

The CPD helped me to make greater and more effective use of different digital technologies

The CPD has helped me to enable students to use digital technologies for group work

The CPD has helped me to make use of digital technologies to assess student work and to provide them with feedback

The CPD has helped me to make use of digital technologies to monitor and analyse students' digital activity

The CPD has helped me to use digital technologies to engage students actively in learning

The CPD has helped me to use digital technologies to address individual learning needs

The CPD has helped me to plan digital learning that will overcome potential digital problems, e.g. lack of access to devices or data

The CPD has helped me to teach students how to work and learn digitally

The CPD has helped me to teach students to make responsible and critical use of digital technologies

The CPD has helped me to teach and assess remotely during the COVID19 lockdown

6. Taking into account the competences and training that you already have and the experiences of the last 6 months, please evaluate your need for CPD that addresses the following kinds of digital competence.

Answer options: No need; Low need; High need; Very high need

Communicating digitally with students and parents

Collaborating digitally with colleagues

Finding, adapting and creating digital resources that serve different learning tasks and different learners

Managing and protecting sensitive data and content

Making greater and more effective use of different digital technologies

Enabling students to use digital technologies for group work

Making use of digital technologies to assess student work and to provide them with feedback

Making use of digital technologies to monitor and analyse students' digital activity

Making use digital technologies to engage students actively in learning

Making use of digital technologies to address individual learning needs

Planning digital learning that will overcome potential digital problems, e.g. lack of access to devices or data

Teaching students how to work and learn digitally

Teaching students to make responsible and critical use of digital technologies

Teaching and assessing at a distance during a COVID19 lockdown

6 What mode of CPD for digital competences do you prefer? Please state whether you agree with the following statements.

Answer options: Strongly disagree; Disagree; Neither agree nor disagree; Agree; Strongly agree.

I would like to participate in CPD face to face workshops led by trainers to develop my digital competences

I would like to participate in online CPD to develop my digital competences

I would like to be helped by other teachers or advisors in my school to develop my digital competences

I would like to participate in CPD that blends together face-to-face and on-line methods

7. Please add any other comment relating to CPD for digital competences.

Open Response