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Delegations will find attached document SWD(2021) 219 final.

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PART 4/5

COMMISSION STAFF WORKING DOCUMENT

Accompanying the document

Proposal for a Council Recommendation

on blended learning for high quality and inclusive primary and secondary education

{COM(2021) 455 final}

- *Tools: types and access*

Types of tool

The learning design can incorporate a **full variety of learning tools** – including books, craft tools, analogue scientific equipment, and sports equipment. All of this can create rich learning experiences that require - and develop - different competences.

Teachers may include the use of digital technology in their learning design to connect learners with: other learners; learning software; and other sources of information. This can improve inclusiveness, competence development and can personalise learning. Online learning can take place anywhere where the learner can use a device to connect to the Internet. Digital devices do not have to be connected to the Internet – for example using a video camera to make a film, or simply reading and writing documents.

A recent study examining the multimedia platform Shujazz showed that youth exhibited positive behaviour changes after receiving targeted content through comics, social media, and SMS. Building in student responses to these mechanisms has the added advantage of supporting critical data collection.[1]

During 2020, numerous countries activated broadcast media (television and radio) to provide learning content and experiences for school pupils.[2] As this can be an effective tool to support content delivery to a mass audience, it can be considered inclusive. It may then allow teachers and schools to use other tools (or none at all) during interactive and expressive tasks – through speaking, writing, drawing, making - as part of a meaningful learning experience.

In the 2021 consultation, students were directly asked about watching a film or video as a task. The majority (77%) said that they would prefer to watch at home (47%) or both at home and school (30%), or school (23%). A TV or large PC screen is preferable (73%) and the students reported that this is because of the size of the screen and the ability to see and hear better. Some also appreciate the easy use of their own mobile devices to watch videos and tutorials which are informative and memorable.

Students were directly asked what tools they like to use if not using books and pens. The dominant response was a preference for using digital tools, such as a computer, tablet or mobile phone. They like to use the Internet, and referred to the use of digital tools for taking notes, doing quizzes and watching educational videos. Other, less frequently mentioned tools were: encyclopedias and maps, "realia" (real life objects), and other applications. They gave practical

[1] https://www.brookings.edu/blog/education-plus-development/2020/08/07/taking-distance-learning-offline-lessons-learned-from-navigating-the-digital-divide-during-covid-19/

[2] See https://www.worldbank.org/en/topic/edutech/brief/how-countries-are-using-edtech-to-support-remote-learning-during-the-covid-19-pandemic

reasons for multi-function and lightweight tools to avoid having to carry around many heavy books. Their choice of tool is influenced by what they find "more interesting" and motivating. They like to use their phones. They like to be connected with others, which also includes looking at the same screen to discuss and work together, not necessarily individually. One student expresses a particular desire for manual tools for creating:

> ***"I can touch, I can see, I can do and make in labs."*** *(Teacher reporting on student response)*

Teachers also reported that many students express a preference for more use of devices, including a projector or interactive whiteboard, digital books. The students gave several reasons to support their desire for an increased use of digital tools:

- The Internet enables them to conduct more research and it is enjoyable. Many students (from different schools) referred to the amount of information that is available and easy to search for on a digital device and via the Internet compared to a book;
- Tablets and computers are simple to use and enables them to understand concepts more easily;
- Students are aware of the way software and the use of a keyboard can help them organise and express their ideas quicker and with greater accuracy. They refer to being able to "type faster than they write", to organise content, and use a spell checker;
- Digital tools have a practical benefit of storing their work and having less to carry around in their heavy bags;
- Digital tools are "normal" and schools should reflect the "workplace of the future".

Some pictures showed comfortable classroom furniture and no heavy bag as resources are electronic (therefore lightweight). A number of pictures showed each student having their own device, which was described as beneficial.

Figure 14: Student drawing of a classroom with comfortable furniture and one device per student

Digital tools can also help teachers to accomplish daily classroom tasks such as grading, homework assignment, and collection of classwork, student discussions, parent interaction, attendance, and an online class calendar.

Effectively blending classroom-based teaching with distanced learning requires an easy method to share resources. When lesson plan and resources (i.e. videos, links, and audio) are available online, students can access them according to their own schedules and location. Learner Management Systems (LMS) can help to sustain contact with the teachers and the classmates, reduce paperwork, and ensure continuity in the education process. If children are allowed to follow their own programme they can more easily switch between different systems (host schools abroad, temporary home-schooling). Privacy and accessibility should be considered, especially where different teachers (sometimes from different countries) need to access to the data of one specific child. Research also highlights that further promotion and development of Learner Management Systems is needed to reap their full benefits.[3]

EXAMPLE E: Using online platforms to support communication between learning environments

In Switzerland, **REALTO** is an online learning platform that aims to bridge between Vocational Education and Training contexts. Learners can use free mobile applications to capture learning experiences through photos, videos, audio, and texts in the workplace. Selected experiences can be shared with peers, teachers, and supervisors while other entries can be kept private.

https://www.epfl.ch/labs/chili/dualt/current-projects/realto/

In Latvia, **MyKOOB** is used for online school organisation and communication. The main goals are to increase parents' awareness of the processes taking place in the school, to structure children's school processes, to make it easier for teachers to prepare reports and to automate the daily work of the school.

https://www.mykoob.lv/?index/parmykoob

[3] Raza, S.A. et al (2021) Social Isolation and Acceptance of the Learning Management System (LMS) in the time of COVID-19 Pandemic: An Expansion of the UTAUT Model, *Journal of Educational Computing Research,* 59 (2), pp. 183-208. Accessed at https://journals.sagepub.com/doi/full/10.1177/0735633120960421

Moodle is an example of a free, online Learning Management system enabling educators to create their own private website filled with dynamic courses that can support learning wherever the students and teachers physically are. It has a range of functions, including dashboard, forums, and file management, plus the ability to track student progress. It has many international language versions available. Testimonies from school leaders as early as 2008 describe how using Moodle has changed the pedagogy – the understanding and practice of teaching and learning – of the school.

https://moodle.org/

Access to tools

Digital technology, in particular those tools that can connect the learner to information and to other learners (and their teachers) via the Internet, open up new possibilities and opportunities. Many examples were witnessed during Emergency Remote Teaching. As blended learning often requires that learning tasks transcend different environments over a period of time it is likely to require online tools, as a way of recording and sharing ideas and experiences.

A blended learning approach will face similar challenges to some of those experienced by many schools during 2020, namely of ensuring equal access by all teachers and learners. The availability of appropriate IT devices, and Internet connection with sufficient bandwidth may be a challenge for economically disadvantaged families.

The challenge of ensuring access to tools is not restricted to digital devices. Anecdotal evidence during the pandemic shared on social media included examples of learners not having **writing or drawing equipment** at home and schools or local organisations sending "learning packs" of paper, pens and other resources to families who could not afford to provide them.[4]

Over the past decade, concerns have also been raised repeatedly about the lack of adequate **sports equipment and opportunities** in some schools[5], although European funding has supported many projects in Member States to address this.[6]

In order to effectively embed the use of digital tools in the learning design, every teacher and learner, and anyone else supporting the learning process, will need access to dependable analogue and digital devices, a reliable infrastructure (including broadband and Wi-Fi for online

[4] For example, learning resource packs were sent to some disadvantaged families in the UK. See https://twitter.com/sairskay/status/1365725020186583043?s=09

[5] European Parliament (2016) Physical education in EU schools. Briefing Paper. Available at https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/593559/EPRS_BRI(2016)593559_EN.pdf

[6] European Commission (2019) Sport 2019 – Description of the projects selected for funding. Available at https://eacea.ec.europa.eu/sites/eacea-site/files/sport_compendium_2019.pdf

learning) and knowledgeable support staff to assist teachers and learners to use online resources effectively.

Participation in blended learning requires access to relevant technology (e.g., computer or a similar device, reliable internet connection, but also a camera, microphone, a printer or a scanner) and skills to use the technology efficiently for learning purposes. To learn from home, students also need a proper learning environment at home; a comfortable space, such as their own room or desk, where they can concentrate on studying.

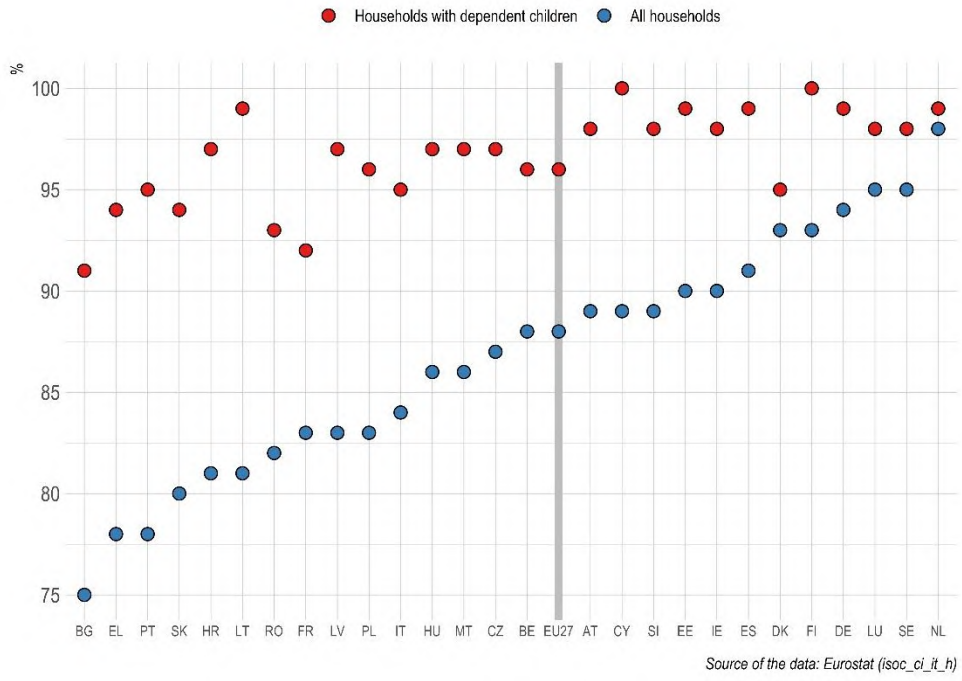

Figure 15: Percentage of households with broadband internet access, 2019 [7]

Available evidence suggests that families with children aged 15 or younger have, on average, better access to digital technology at home than the average household (see Figure 8), but there are still substantial inequalities based on socio-economic status[8]. Also, students from socio-economically disadvantaged families are less likely to have their own room and are more likely to live in a small space shared with other family members (ibid).

[7] Eurostat "Households with broadband access." Latest data available at https://ec.europa.eu/eurostat/en/web/products-datasets/-/TIN00073

[8] Di Pietro, G., Biagi, F., Costa, P., Karpiński, Z., and Mazza, J., (2020), *The likely impact of COVID-19 on education: Reflections based on the existing literature and recent international datasets*, p. 14-17. Luxembourg: Publications Office of the European Union (2020), JRC121071, available at: https://ec.europa.eu/jrc/en/publication/likely-impact-covid-19-education-reflections-based-existing-literature-and-recent-international

In the context of the COVID-19 crisis, ongoing concerns regarding **unequal access to digital devices** came to the fore. While connectivity has dramatically increased in recent years, according to Eurostat, 12% of households in the EU-27 still do not broadband internet access.[9]

During the COVID-19 pandemic some 826 million students (50%) did not have access to a computer at home, according to a study by the UNESCO Institute of Statistics (UIS) and the Teacher Task Force.[10] It is estimated that at the peak of the crisis, almost 1.6 billion children in 195 countries worldwide, could not access their classrooms. Around 706 million students lack internet access and 56 million live in areas not covered by mobile networks. Many countries had to quickly find effective solutions and television and radio have proven to be a good alternative in a context where connecting to schools and teachers is not possible via the Internet.

The use of digital tools in 2020

A survey on 8-18 years old learners during the COVID-19 pandemic "lockdown" in spring 2020 (Figure 15 below) shows that a variety of digital tools were used. The results show that more students had access to chat and video conferencing tools (e.g. Zoom, Microsoft Teams, Hangouts, Skype, and WebEx) than to dedicated digital learning environments. Whereas video conferencing tools served the purpose of maintaining 'face-to-face' contact and live teaching sessions, it is worth noting that their pedagogical affordances are not extensive and they seldom encourage learner-centered pedagogical models. This has led to the belief that paying attention to learners' screen time should become more central to remote schooling practices in the future to help achieve a better balance between screen time and off-screen activities. Focusing on distance learning practices that allow for better peer-learning and collaboration among learners, but also on inspirational off-screen activities, are also believed to be important.

[9] https://ec.europa.eu/eurostat/statistics-explained/index.php/Digital_economy_and_society_statistics_-_households_and_individuals

[10] https://en.unesco.org/news/learning-through-radio-and-television-time-covid-19

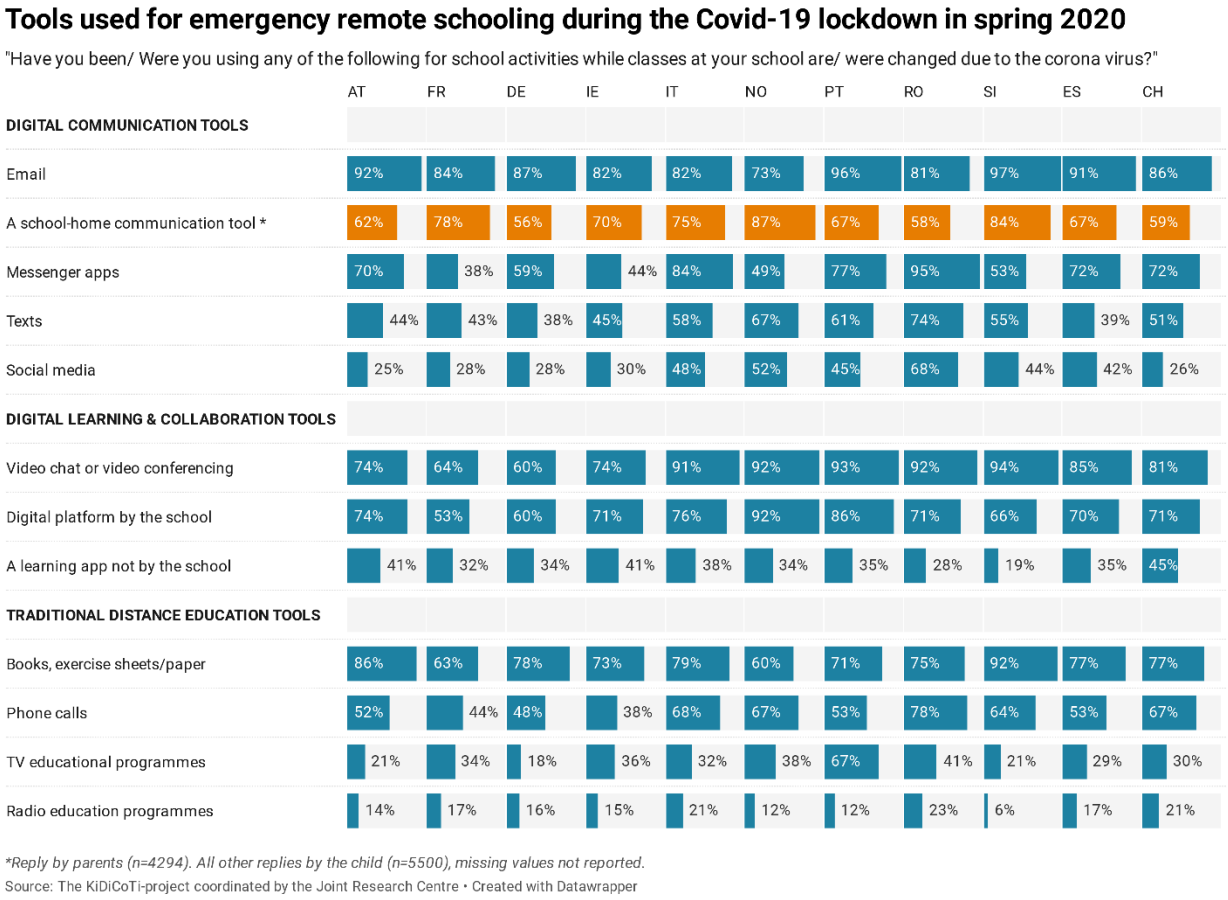

Figure 16: Tools used for Emergency Remote Teaching during spring 2020

Evidence from the Digital Education Action Plan 2021-27 open public consultation (2020) shows that, during the COVID-19 pandemic, around 65% of respondents (across all levels of education) observed an increase in the use of distance and online learning. This happened both 'in real time' (e.g. live online classes) and 'in one's own time' (e.g. watching videos of recorded lectures, consulting online learning materials, using MOOCs), with the former rising more than the latter. An increase in the provision of digital equipment/tools to study or work from home (e.g. tablets or laptops) and of learning content via television and radio was also observed.

Over half (around 57%) of respondents declared they had not used distance or online learning before the crisis, have done so during the crisis, while almost all (96%) respondents who already used distance online learning before the crisis plan to continue doing so after the crisis. Interestingly, around 80% of both teachers and education and training staff plan to take new initiatives/courses/training to improve their digital skills and competences in the future. Interactivity and user friendliness are consistently identified by learners, teachers, parents and education and training staff as the most relevant characteristic for online learning resources and content. Respondents from these four groups also place high value on the quality and relevance

of the content, recognised by national authorities, and on the fact that the content should respond to the need to develop skills further and the needs of the labour market.

Attitudes and concerns relating to the use of digital tools

The Digital Education Action Plan 2021-27 open public consultation (2020) revealed many of the attitudes and experiences of the education community. For blending the use of digital tools to guarantee more even, and better, pedagogical and social outcomes, three key issues arise:

1. Firstly, more work is needed to strengthen and streamline the availability and use of digital learning tools and activities for *effective* educational outcomes in the future. More screen-time and online activities do not necessarily equate with better learning. The use of conventional learning aids (e.g. paper-based textbooks, educational TV and inspirational educational off-screen activities) could form a key part of the education ecosystem in the future. Achieving an appropriate balance between screen time and off-screen activities is a question for the learning design – for competence development, equity (considering those with reduced access), and well-being.
2. Secondly, a teacher's pedagogical practice and choice of learning task play a key role, too. Strengthening teacher digital competence is important, for example to improve distance learning tasks that allow better peer-learning and collaboration among learners. Self-assessment tools such as the forthcoming SELFIE tool for Teachers and the European Digital Competence Framework for Educators (DigCompEdu) can help (see Chapter 4 for more on these tools).
3. Measures should be in place to guarantee the safety of teachers and learners online. Data collection should be compliant with data protection rules.[11] The accessibility of proposed tools and content should be adaptable for learners with Special Educational Needs. This includes possible language-related obstacles for children whose home language is different to that of school. For the safety of learners, it may be necessary to review the set-up of secure passwords and logins as well as filters for the use of internet content. IT Infrastructure providers offer many security options and filters that allow educators to block problematic apps and websites. There is also an added responsibility to ensure adherence to data protection laws. When using software, schools will need to follow clear guidance on what access private organisations have to student and staff data.

> ***"Thought needs to be given to the education technology market and how to make it work better for education."*** *(Vocational Education and Training expert)*

During the open public consultation, teachers, education and training staff, education and training institutions, learners and parents (among others) were asked about their evaluation of the measures implemented by their education or training institution (or the education or training institution for which they are responsible) during the COVID-19 pandemic. Interestingly, the

[11] For guidance, see https://ec.europa.eu/info/law/law-topic/data-protection_en

evaluation of such measures tends to differ across groups. Educators, and education and training staff tend to be more positive, while learners and parents are more sceptical. In fact, around 50% of leaners and parents declare the need for better interaction, instruction, guidance and communication from teachers and schools. Parents also report that their child(ren) had a particularly bad experience with motivation to learn, examination/assessment and feedback, and quality of online learning content (66%, 52.3%, and 49.1%, respectively). Education and training institutions also reported that they would have liked to have received more guidance on how to support mental health and well-being of staff and learners (around 40%) while teachers state that they would have welcomed more training and guidance on how to adapt the class material and teaching methodology to distance and online learning (around 35%).

Considering the future use of digital tools, there seems to be a consensus amongst experts and researchers that clearly identifying the purpose of using education technology is of paramount importance, with levels described in the "SAMR" model, developed by Puentedura:

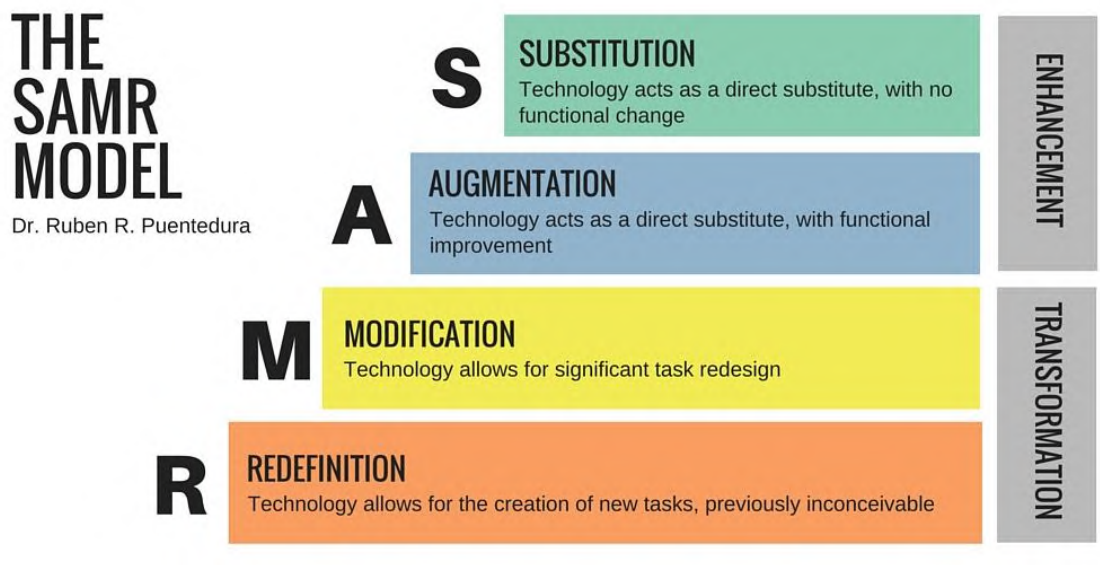

Figure 17: SAMR model defining different levels of integrating educational technology [12]

Nevertheless, the motivation or decision to use digital tools may be based on the **availability of digital content**. If the teaching materials themselves are not easily accessible or low/no cost, then the teacher or school may not be persuaded to blend the use of digital tools. School

[12] Original graphic available at https://commons.wikimedia.org/wiki/File:The_SAMR_Model.jpg

education systems are increasingly aware of this and have a range of online platforms[13] that signpost and collate information and teaching materials.

EXAMPLE F: "Scholaris" portal for teachers in Poland

Scholaris is a knowledge portal for teachers with free electronic learning resources tailored to all stages of education. The materials available on the portal are in line with the new core curriculum and compatible with all interactive whiteboards and other devices supporting the teacher's work, e.g. tablets. The portal aims to support teachers in preparing engaging and interactive classes by providing them with ready-made and tested educational materials. Using the portal is free of charge.

Scholaris is addressed to teachers of all stages of education (from kindergarten to upper secondary schools), but also to students who want to deepen their knowledge and develop their practice. Currently, the portal contains almost 28,000 interactive materials, helpful in the implementation of content from all lesson subjects, at various educational levels. These are lesson plans, exercises, texts, animations, slides, simulations, didactic games, and films. It offers resources tailored to the different needs of children and young people, including resources to help educate 3, 4, 5 and 6-year-olds.

Scholaris is a project implemented by the Education Development Centre under the Human Capital Operational Program, Priority III, Measure 3.3, Sub-measure 3.3.3, co-financed by the European Social Fund.

Scholaris is also part of the government programme to develop students 'and teachers' competences in the use of information and communication technologies - Digital School.

https://portal.scholaris.pl/

The competence to use digital tools

The qualitative analysis of the open-ended questions of the Digital Education Action Plan open public consultation gives a picture of parents overwhelmed, educators lacking competences and struggling to ensure a structured process while keeping up student engagement, learners lacking social/human interaction and, in some cases, missing devices and connectivity.

A survey found that during the spring lockdown 2020, the majority of parents estimated that their child had gained new digital competence in using digital technologies for online school activities (Figure 15, first row).[14] Attributes such as gaining autonomy in using digital technologies, being

[13] A list of national sites with information and materials was published on the School Education Gateway in April 2020 to help teachers working from home to access online content: https://www.schooleducationgateway.eu/en/pub/latest/news/european-national-websites.htm

[14] Vuorikari, R., Velicu, A., Chaudron, S., Cachia, R. and Di Gioia, R. (2020) How families handled emergency remote schooling during the Covid-19 lockdown in spring 2020, Luxembourg: Publications Office of the European Union. ISBN 978-92-76-24519-3 (online), doi:10.2760/31977 (online)

able to conduct various online schooling activities and being able to help others in digital activities are all encompassed in the progression of one's level of digital competence.[15]

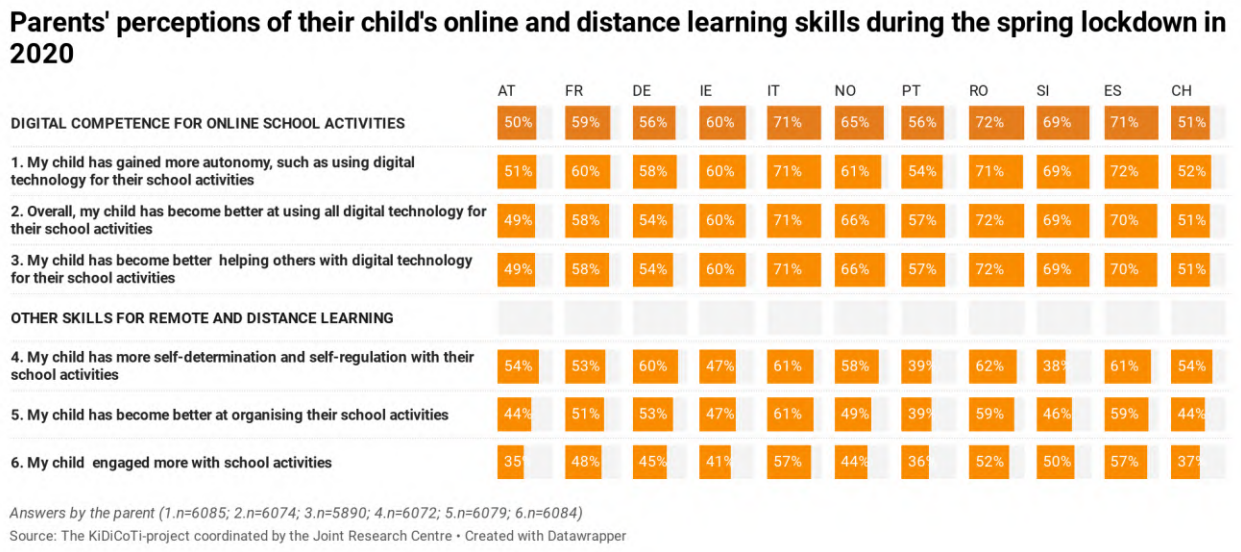

Figure 18: Parent's perceptions of children's learning skills during spring 2020

Any web-based tools or platforms[16] should be suitable and relevant to pupils' age as well as intuitive and user friendly. Further, as regards digital skills, young people are in general more digitally competent, on average, than the general population[17], but again, there are considerable differences among students based on the socio-economic situation of their parents.[18] Moreover, there is evidence that the socio- economic gap is greater for high-level digital competences (i.e., computational thinking) than for general computer literacy (ibid).

[15] Joint Research Centre of the European Commission (2017). DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use. Carretero, S.; Vuorikari, R. and Punie, Y. doi:10.2760/388

[16] See, for example, https://www.slant.co/topics/12425/~virtual-classroom-platforms-for-teachers

[17] According to Eurostat's Community Survey on the ICT use in households and by Individuals. Individuals aged 16 to 19 are the youngest age group for whom data are systematically available from all participating countries. Data on individuals aged 15 or less are available for a small number of countries.

[18] Karpiński,Z., Di Pietro, G., Biagi, F., *Digital skills, test effort and socio-economic status: an analysis of ICILS 2018 data*, forthcoming.

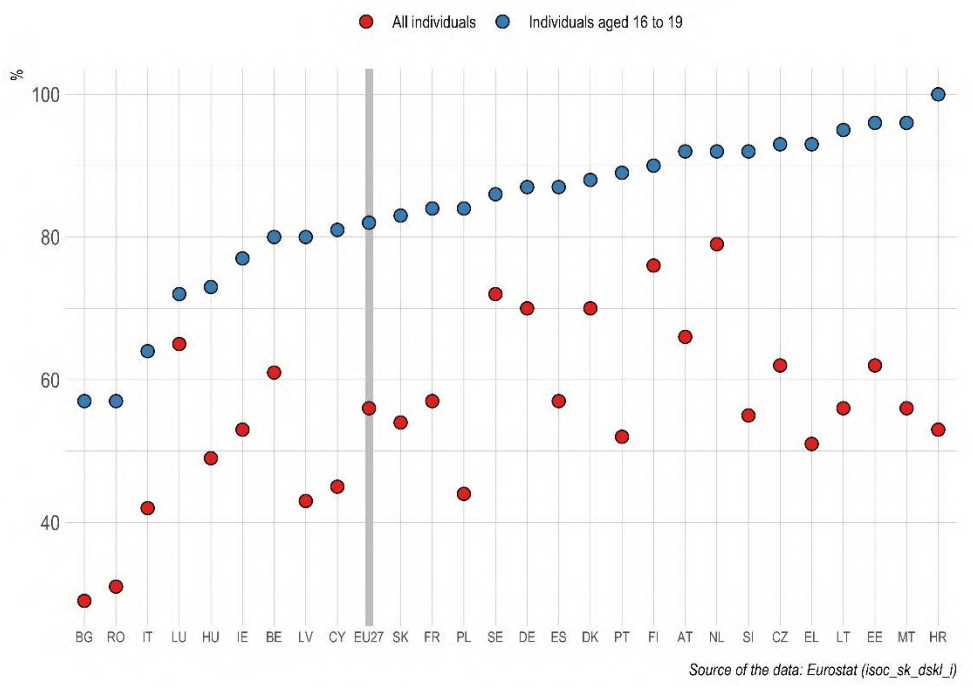

Figure 19: Percentage of individuals with "basic or above basic" digital skills among young people (16 to 19 years of age), 2019, as compared with the general population [19]

Research into the eTwinning online community of European teachers and schools highlighted that teachers reported a greater confidence and competence than some of their (non-eTwinning) peers to cope with the transition to Emergency Remote Teaching, including increased online teaching. This is due to their familiarity with the tools that are regularly used by these teachers to engage in professional development and run their own projects with other teachers and pupils.

Similarly, research on the European Commission's School Education Gateway Teacher Academy, which offers professional development courses and webinars, reports on the positive impact of participation in MOOCs.[20] Teachers reported to be more confident with digital tools and to make changes to their teaching practice that had a positive impact on the engagement and learning outcomes of pupils.

[19] Eurostat data - Individuals' level of digital skills. Latest data available at: https://ec.europa.eu/eurostat/databrowser/view/isoc_sk_dskl_i/default/table?lang=en

[20] European Commission (2020) The impact of participation in Teacher Academy online courses on the practice and identity of teachers: a research study. Available at: https://www.schooleducationgateway.eu/downloads/webinars/PAB%20Online%20Event/Teacher%20Academy_Research%20Report_2020_Final.pdf

One Erasmus project (see example below) noted the lack of experience and understanding that teachers have with digital tools and created videos, eBooks and an app, MILAGE LEARN+, in order to support the blending of digital tools within mathematics.

EXAMPLE G: Interactive mathematics by implementing blended learning

The leaders of this European project began with the understanding that students are the generation of digital games and social networks and that, therefore, it is wise to consider the integration of digital media and mobile devices, allowing students to set personal goals, to manage educational content and to communicate with others in the right context. The project leaders also understood that low-achieving students that may struggle to learn the materials covered in class, can study and repeat the materials as many times as they may need to learn.

Worksheets of mathematics problems were organised in eBooks and in the app MILAGE LEARN+ that was developed. The project trained 140 teachers of mathematics in Portugal to use the platform and in 2018 reported that 11 000 students are using the MILAGE LEARN+ app. Around 2 000 problems and videos resolutions from the 1st to the 12th grade for mathematics are now available, as well as around 200 problems and videos resolutions for Portuguese, Natural Sciences, Spanish, English, French, Chemistry and Physics for different grades.

This was an Erasmus+ funded partnership project between Portugal, Spain, Norway and Turkey.

The project signed an agreement with the Portuguese High Commissioner for Migration to support 50 000 students from disadvantage backgrounds, and with the Portuguese Ministry of Education to disseminate the app in all schools in Portugal.

http://milage.ualg.pt/

Augmented Reality (AR) and Virtual Reality (VR)

Augmented Reality (AR) and Virtual Reality (VR) have the potential to help students to better visualise abstract scientific concepts[21], such as the human anatomy or food chains, by rendering them as fully 3D models that can be overlaid over the real world. Students can interact, turn and study a model as much as they wish; teachers can then direct students to certain parts of the model, provide additional pointers or facts, and assign tasks based on the model – finding a human organ in relation to the position of the liver, for example. Through virtual headsets, students are also free to experiment with virtual chemicals[22] and see the results instantly. AR apps on mobile devices are also increasingly available, enabling learners to explore the solar system[23], understand geometry in 3D[24] and learn the life cycles of plants.[25] Teachers can also

[21] https://educationblog.microsoft.com/en-us/2018/06/digital-learning-distraction-or-default-for-the-future/
[22] https://www.schellgames.com/games/superchem-vr
[23] http://amazingspacejourney.com/#explore

create their own AR applications, such as scavenger hunt adventures[26] that incorporate group work and problem solving activities.

- *Tasks: how learning takes place*

Types of tasks

The environments - where learning will take place – and the tools – the artefacts with which learning is facilitated – are combined within learning tasks. As part of the design, schools and teachers use their professional judgement to consider what kinds of learning tasks are appropriate for their learners; how they will be embedded in a process; and how learning will be assessed.

Teachers need to consider the benefits of blending teacher-led and pupil-led tasks. They decide when it is best for learners to be collaborative in group or whole class tasks and when they might do individual tasks. Tasks might be, for example, about sourcing information, practising a skill, solving a problem, taking a quiz to see how far they have progressed, developing personal attitudes.

In the 2021 student consultation, some students pointed out that lessons should be used for interaction and explanations by the teacher. Even watching videos together can be enjoyable and can be complemented by discussion, the opportunity to ask questions, and "it's a good way to share a point of view" *(student opinion described by their teacher)*. They also recognise that they may need help to revise before an assessment. Some students mentioned the need for more "time to think by ourselves" and go more in-depth on some topics". Students express a preference for even more group work.

When ask what they would like more of, a broad range of learning tasks were mentioned by students, including:

- Sport/ physical activities
- Oral comprehension, discussion and the opportunity to ask more questions
- Experiments
- Arts and craft work
- Music
- Reading and research work

Students are aware of what motivates themselves and others, referring to tools or tasks that are "more interesting" or more "useful for learning". Many referred to engagement as supporting learning, particularly with hands-on activities.

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[24] https://vrmath.co/
[25] https://www.youtube.com/watch?v=TNQedwQiu8A
[26] http://classtechtips.com/2017/10/27/metaverse-classroom-augmented-reality/

Students are aware of the benefits of different learning tasks, acknowledging that group work can help them to be more creative and work with others.

> ***"They think that by researching they learn more, discussing things they build vocabulary and defend better their opinions and competition e.g. in quizzes is much more fun."*** *(Teacher)*

They reportedly respond well to different visual stimuli, such as content projected on a screen or part of a video. Students seem aware of the importance of a healthy lifestyle, saying that exercise is important.

Even though they made many suggestions in their survey reponses, some students said that they are happy with how learning was currently designed or that lessons are hard and they already work hard enough. On the other hand, some said that they would like to learn more, suggesting that, in the context of the survey questions, they felt that a different learning design might achieve more.

Designing the learning process

Figure 20: Six learning types [27]

Varied tasks, such as described within Diana Laurillard's six learning types[28] are already being considered by some schools who are in the early stages of developing a blended learning approach.

[27] ABC Learning Design method by Clive Young and Nataša Perović, University College London (2015) is licensed under CC BY NC SA 4.0. https://abc-ld.org/6-learning-types/

This work supports the opinions expressed by the students, as well as the concept of teachers as "designers" as well as "facilitators" of learning.[29]

Teachers as designers is an idea also incorporated in SELFIE for Teachers[30]. In supporting teachers towards the development of their digital competence for blended learning approaches, an expert teacher (B2 proficiency level) has the capacity to analyse digital technologies based on their affordances and employ them in his/her learning designs to support distance learning, while a leader teacher (C1 proficiency level) can reflect on and redesign teaching and learning for distance learning contexts to ensure students' active involvement in the learning process within and beyond the classroom (e.g. online learning, blended learning, hybrid learning, virtual labs, online collaborative tools, synchronous and asynchronous activities, individual and team work). Moreover, an innovator teacher (C2 proficiency level) involves his/her students through the whole process as well as engaging them in innovative activities, e.g. "My students and I contribute to exploring and finding innovative and creative solutions to real world challenges beyond our school".

Empowering teachers to become learning designers and to additionally engage students in the design for learning as an additional benefit to the learner's competence development[31] may be a desirable goal for a school or whole system.

There is a need to understand learning theories when reflecting on designing for learning.[32] It was believed to be the case that learning is seen as something which results in the personal acquisition of knowledge and skills. Rather less attention had been paid to other conceptions of learning, such as 'learning as participation' or 'knowledge creation'.[33] Research suggests that these are important concepts to appreciate within blended learning given that learners may be engaging more in self-directed learning in combination with learning tasks where the teacher may take more of a lead or structured approach to introduce new concepts and skills.

If there is a system-wide need to support teachers in this design then opportunities for professional development will need to be identified, as was the case from the early stages of the pandemic. One of the obvious and prevailing concerns of teachers is that sufficient time – as core working hours – and resources for the whole school to develop, monitor, assess, and adjust

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[28] Laurillard, D. et al (2018) Using technology to develop teachers as designers of TEL: Evaluating the learning designer. *British Journal of Educational Technology*, October 2018. Available at: https://bera-journals.onlinelibrary.wiley.com/doi/full/10.1111/bjet.12697#:~:text=The%20six%20learning%20types%20are,peers%2C%20at%20the%20concept%20and%2F

[29] https://www.herdsa.org.au/system/files/HERDSARHE2015v02p27.pdf

[30] SELFIE for Teachers https://digcompedu.jrc.es

[31] Wasson, B. & Kirschner, P. (2020) Learning Design: European Approaches. *TechTrends*, 64. Available at: https://www.researchgate.net/publication/341356040_Learning_Design_European_Approaches

[32] Ertmer, P. & Newby, T. (2008) Behaviorism, Cognitivism, Constructivism: Comparing Critical Features From an Instructional Design Perspective. *Performance Improvement Quarterly*, 6, pp.50 - 72. Available at: https://www.researchgate.net/publication/229494297_Behaviorism_Cognitivism_Constructivism_Comparing_Critical_Features_From_an_Instructional_Design_Perspective

[33] Paavola, S. et al (2004) Models of Innovative Knowledge Communities and Three Metaphors of Learning. *Review of Educational Research,* 74 (4). Available at https://journals.sagepub.com/doi/abs/10.3102/00346543074004557

strategies, and to deliver learning support, should be set aside for this important design aspect of their work.

Nevertheless, stakeholders believe that one of the main advantages of digital technology lies in its flexibility and capacity to allow learning at one's own pace, as well as to implement innovative and engaging ways of learning and teaching (as stated in the Digital Education Action Plan open public consultation).

The learning event as part of the process

Figure 18 (below) shows how teachers can redesign learning so that the time they spend with students live, either in a classroom or in a virtual live online classroom, is no longer dedicated solely to content acquisition but is now reimagined for the purpose of dialogue and deliberation. In this way the live events, where the teacher and learners are together at the same time, can support more active forms of learning where students and teachers collaborate, deliberate and share their work with one another. Teachers are able to reduce the amount of time they spend on 'delivering' or 'covering' content in class and using the live sessions - either online, in class, or in another environment - for building understanding and relationships.

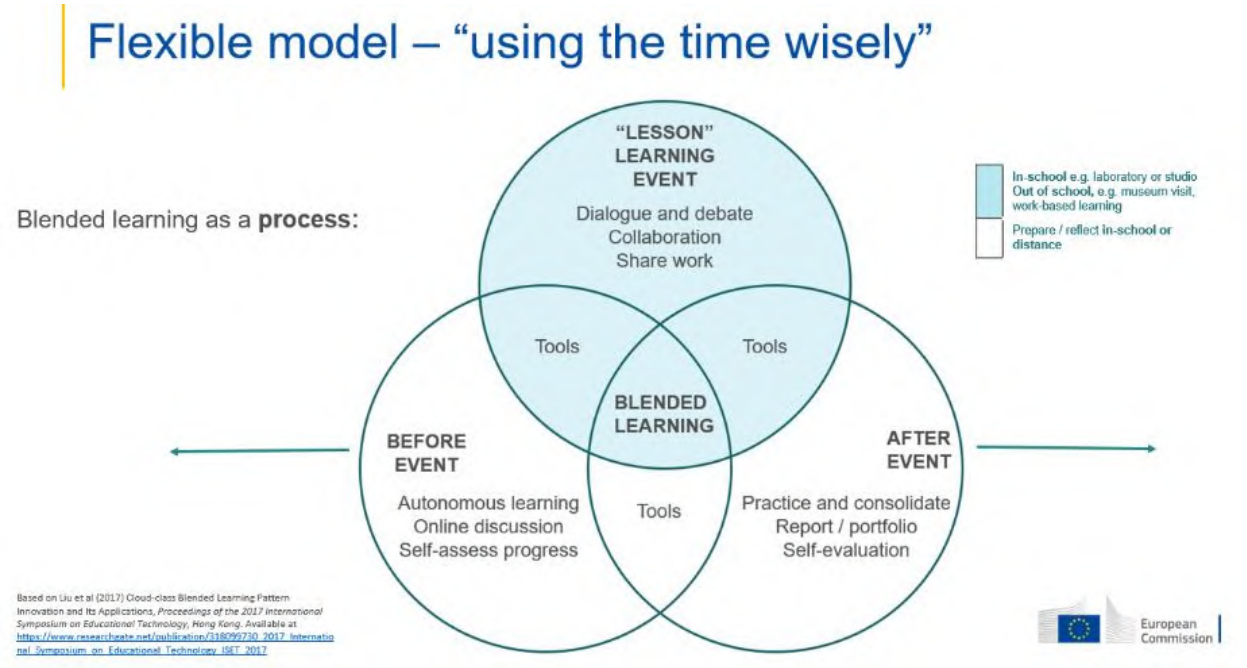

Figure 21: Blended learning as a process of before, during and after the live/shared learning event

Online opportunities

Some schools have been including online learning to enable students to engage with digital content on their own and or with peers during school site learning, or in advance of school-site lessons. Naturally, there has been an increase of this approach on a massive scale with restrictions on school-site learning.

Nevertheless, while the focus has typically been on simply combining school-site teaching and online learning by the same pupils at a distance, researchers call for a more "thoughtful fusion of … online learning experiences".[34] The purpose is not to simply do more of the same kind of learning online that would be done together in the classroom. There is a growing expectation that online learning should enhance or improve the experience for the learner when working without connecting online and/or learning in a shared space[35]. It is noted that future research is needed to better understand the variation in the experience of the learning of the student in the blended learning context.

It is understood that, in an effective learning experience (one that achieves its desired learning outcomes), the content and activities of both online learning and other approaches are integrated with one another and work toward the same learning outcomes with the same content. The various learning experiences are synthesised, and may be designed to complement each other, and are planned or orchestrated to run in parallel. In terms of impact, many findings on blended online and off-line activities show an increase in learners' ability to learn collaboratively, think creatively, study independently and tailor their own learning experiences to meet their individual needs.[36]

> ***"By experimenting with these different ways of teaching it becomes obvious that the students need, like any human being, but even more because their brains are in full maturity, to meet other young people to confront their way of thinking and above all to create links."*** (Teacher)

A well-established use of online learning tasks has been in the field of languages education. According to the OECD Teaching and Learning International Survey (TALIS), foreign language teachers are more likely than other teachers to use technology in their classrooms and as part of their lessons.[37] By integrating technology in their teaching, foreign language teachers are able to play a key role in connecting students and schools of other language communities. Both the eTwinning community and Erasmus programme have numerous examples of the use of the

[34] Garrison, D. R., & Vaughan, N. (2008). *Blended learning in higher education*. San Francisco, CA: Jossey-Bass. Cited in Cleveland-Innes, M. and Wilton, D. (2018) *Guide to Blended Learning*, Burnaby: Commonwealth of Learning .Available at: http://oasis.col.org/handle/11599/3095

[35] Oliver, M. & Trigwell, K. (2005). Can 'Blended Learning' Be Redeemed?. *E-learning,* 2. Available at: https://www.researchgate.net/publication/250151886_Can_'Blended_Learning'_Be_Redeemed

[36] http://oasis.col.org/handle/11599/3095

[37] Covacevic, C & Vargas, J (2020) *How might the coronavirus crisis be affecting foreign language teachers* OECD Education and Skills Today available at https://oecdedutoday.com/coronavirus-foreign-language-teachers/

Internet to bring together classes from schools in different countries, to gain practice in using the language that is being learnt and to exchange other cultural information.[38]

The European Centre for Modern Languages and its Professional Network Forum conducted a large Europe-wide study among language teachers in an attempt to draw conclusions about the future of language education based on lessons learned during the pandemic. As expected, the pandemic has had significant impact on timings, methods & techniques, phases of lessons, assessment, welfare (stress) and increasing gaps between those doing well and those falling behind. However, 55% believe they have been able to maintain the quality & variety of learners' / students' language learning experiences, and their achievement. The results point towards an equilibrium between the positives gained from the experience and the challenges still to be faced. The greatest single finding was on the positive lessons learned from adapting to change.[39]

> ***"I've learned that 1) teachers and learners can adapt to any environment when in need. 2) technology is an integral part of our daily lives and of education as well. 3) when we learn to use new methods of e-teaching, we have a great tool in our hands. Teaching can be motivating, interesting, pleasant, free of stress."*** *(Teacher)*

Online learning can be beneficial where students wish to study a subject for which there is no dedicated teacher within the school. One such example is the Gaeltacht e-Hub Pilot Project in Ireland (see example below).

[38] Resources and examples on Erasmus+ and multilingualism can be accessed via https://ec.europa.eu/programmes/erasmus-plus/news/20170919-multilingual-classrooms-erasmus-help-teachers_en

[39] https://www.ecml.at/ECML-Programme/Programme2020-2023/Thefutureoflanguageeducation/tabid/5491/Default.aspx

EXAMPLE H: Online learning to support learning in a native language or where there are staff shortages

Image: https://www.rte.ie/news/regional/2019/0401/1039923-gaeltacht-e-hub/

The **Gaeltacht e-Hub Pilot Project** is a 3-year programme of the Irish Department (Ministry) of Education which began in 2019. The aim is to support students from the Gaeltacht (Irish-speaking areas) to access subjects not available to them at school due to lack of a suitably qualified teacher.

In the pilot programme, Higher Level Physics was offered to students from eight Irish-medium schools, including three island schools. Two online teachers based in other (also Irish-medium schools) taught the classes online and the students were assisted by an e-Mentor at their school. The e-Mentor was always present during the lessons to support students and attended a weekly review meeting with the online teacher. Students also attended a practical hands-on learning day at the National University of Ireland, Galway to supplement their learning.

An independent review of the pilot project from March 2021[2] showed the experience of the pilot project to be highly successful. It commended *"the strong blend of pastoral and academic support both online and in the classroom; and the well-established collaborative relationships for learning which have developed within the online learning environment"*.

The online teachers and e-Mentors worked collaboratively to prepare and manage class time and to update parents and other stakeholders. They adapted lesson plans and teaching strategies to meet the requirements of an online learning environment. According to the evaluation, there is potential for more extensive online collaboration across Irish-medium secondary schools in Irish-speaking areas and beyond.

Independent evaluation published 2021: https://www.education.ie/en/The-Education-System/Policy-on-Gaeltacht-Education-2017-2022/independent-evaluation-of-the-gaeltacht-e-hub-pilot-project.pdf

Personalised and peer learning

Blended learning, if appropriately designed, offers the potential to proactively support learners in their specific needs, increase their motivation and ability to work autonomously.

> ***"It's widely recognized that real and meaningful learning occurs in the classroom only when curriculum goes beyond rote memorization and lecture-based instruction. We believe that the same approach should be applied to distance learning."*** *(Perspective of an international education organisation)*[40]

Project Based Learning (PBL) is an opportunity to enable a learning experience to feel more meaningful and relevant to the learner. By its design it is active and student-directed. The basic principle of PBL requires students to work on a real-world and open-ended problem by solving projects over the specific period of time, while demonstrating their knowledge and skills. Finally, their solution or product is presented to an audience for critical peer feedback. By using PBL, students can have a better sense of how their developing knowledge and skills can be applied.[41] When designing learning, care must be taken to be realistic in terms of the individual's capacity to manage their own learning if much of the work is to be at a distance or individually.[42]

> ***"It's important to understand that my flipped classroom is not about videos at home and textbook work in class. It is about easing students' anxiety by giving them time to work through problems with their peers and with me. It is about personalizing the learning space, building relationships with students and gaining their trust, and being there to support them when they need me the most"*** *(Perspective of a school education researcher and teacher[43])*

[40] Amporo, A. and Nabbuye, H. (2020) Taking distance learning 'offline': Lessons learned from navigating the digital divide during COVID-19. Availale at: https://www.brookings.edu/blog/education-plus-development/2020/08/07/taking-distance-learning-offline-lessons-learned-from-navigating-the-digital-divide-during-covid-19/

[41] https://www.researchgate.net/publication/334291542_Enhancement_of_students'_skills_via_project-based_learning

[42] http://www.oecd.org/site/schoolingfortomorrowknowledgebase/themes/demand/41176687.pdf

[43] Arnett, T. (2020) The blended learning models that can help schools reopen. https://www.christenseninstitute.org/blog/the-blended-learning-models-that-can-help-schools-reopen/

Individualised learning plans – i.e. tailored to individual pupils - may help with achieving an effective complementarity of learning environments, tools and tasks for all pupils, as well as tailor individual support to pupils with Special Education Needs. This is part of the fundamental shift to student-centred learning that a blended learning approach can support.

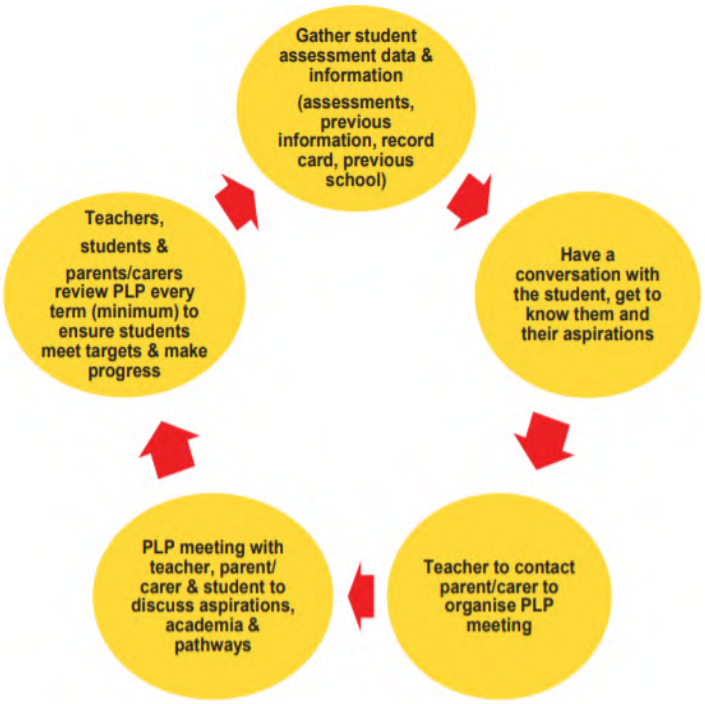

Figure 22: Example of the process of developing a personalised learning plan for a student [44]

Extra-curricular activities and non-formal learning

Research as shown that "extracurricular and other organized activities can provide a wide variety of experiences and more quality interaction among students and between adults and students in the school, which may become translated into better socioemotional wellbeing and learning outcomes in children."

Non-formal learning is that which happens outside of the compulsory curriculum. The importance and relevance of non-formal learning is evident from the experiences acquired through youth work, voluntary work, and participating in cultural activities, including grassroots sport. Non-formal learning plays an important role in supporting the development of essential interpersonal, communicative and cognitive skills including among other things, creativity, that

[44] New South Wales Department of Education "Personalised Learning Pathways (PLPs) for Aboriginal students: Guidelines". Available at: https://education.nsw.gov.au/content/dam/main-education/teaching-and-learning/aec/media/documents/PersonalisedLearningPathways16.pdf

facilitate young people's transition to adulthood, active citizenship and working life.[45] Identification of new ways of learning includes better cooperation between formal and non-formal learning settings.[46]

Nevertheless it is difficult to precisely track the impact of such non-formal learning because the development of competences is influenced in many ways during childhood. What is certain is that the opportunity to engage in non-formal activities are often uneven, between those families who are more affluent or aware of the benefits and those who are not.[47]

Using a set of questions or a more developed tool, such as the EU's Youthpass (see example below) may help to reflect on and formally or informally validate the competences developed.

EXAMPLE I: Youthpass for supporting and recognising non-formal learning

Youthpass is a tool to reflect on, document and recognise learning outcomes from youth work and solidarity activities. It is available for projects funded by Erasmus+: Youth in Action and European Solidarity Corps Programmes. It is a part of the European Commission's strategy to foster the recognition of non-formal learning, putting policy into practice and practice into policy.

Youthpass makes use of the Key Competences for Lifelong Learning in order to describe and frame each set of knowledge, skills and attitudes.

While creating their Youthpass certificate together with a support person, Erasmus+ Youth in Action project and European Solidarity Corps participants are given the possibility to describe what they have done in their project and which competences they have acquired. Thus, Youthpass supports the **reflection upon the personal non-formal learning process and outcomes.**

As a Europe-wide recognition instrument for non-formal learning in the youth field, Youthpass strengthens the **social recognition of youth work.**

https://www.youthpass.eu/en/

https://www.youthpass.eu/downloads/13-62-420/Leaflet%20-%20revised%20key%20competences.pdf

[45] Council Conclusions on the role of youth work in supporting young people's development of essential life skills that facilitate their successful transition to adulthood, active citizenship and working life (2017). Available at: http://data.consilium.europa.eu/doc/document/ST-9624-2017-INIT/en/pdf

[46] Council conclusions on maximising the role of grassroots sport in developing transversal skills, especially among young people - 2015/C 172/03. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C:2015:172:FULL&from=EN

[47] Metsäpelto, Riitta-Leena & Pulkkinen, Lea. (2015). The benefits of extracurricular activities for socioemotional behavior and school achievement in middle childhood: An overview of the research. *Journal of Educational Research Online.* 6. 10-33.

"Non-formal education stresses the importance of enjoying learning which is fundamental to foster meaningful experiences … Non-formal education deploys assessment methods … mainly to support learning and develop skills in the learner as opposed to measuring performance." (European student organisation)

The shared responsibility of parents and guardians

The involvement of parents in "homework" (additional tasks to complement or complete tasks done in school lessons) is not likely to be equal in all families[48] and one may assume the same to be true even after the long period of school-site closure. It is assumed that parental support was particularly necessary when students experienced self-regulation difficulties during learning, with parents having to fill in for teachers who usually provided extra support in classroom lessons. In the open public consultation for the Digital Education Action Plan, around a half of parents stated that they would have welcomed more regular interaction, instruction and guidance from teachers as well as more regular and clear communication, guidance and support from the educational institutions of their child(ren).

Consideration and transparent guidelines should be given to how much support/supervision is expected of parents and guardians. The level of support may depend on a range of factors: the educational level, language competences and digital skills of parents; time available (balanced with employment, several young children); and the relationship between parent and child. Extra support may be required where parents and guardians are less able to structure the learning of young children themselves, for instance where the parents do not speak the language of schooling to the necessary level.

[48] Maša Đurišić and Mila Bunijevac (2007), Parental Involvement as an Important Factor for Successful Education, *Centre for Education Policy Studies Journal* - Slovenia, 7(3). Accessed at https://files.eric.ed.gov/fulltext/EJ1156936.pdf

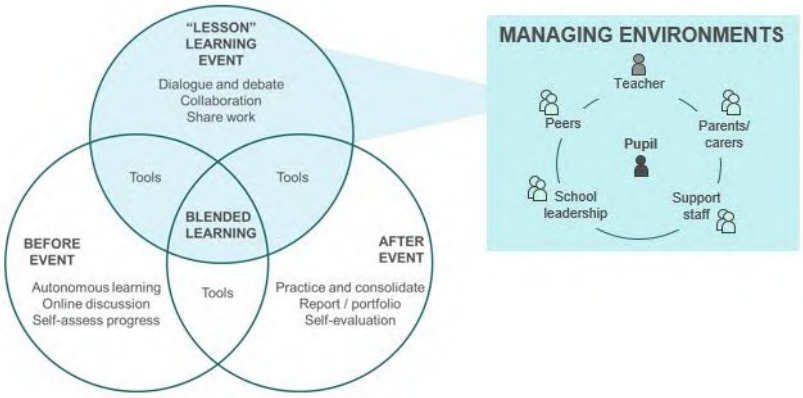

Figure 23: The roles of different stakeholders in managing the learning environments

Actively involving parents and pupils themselves in designing/assessing/adjusting the learning tasks may help with the continuity between school site and distance learning environments. Strategies for active engagement may be offered by parent organisations.[49] One example is "The Parents' Toolkit" (La mallette des parents), from France, which is not specifically about blended learning, but it addresses how parents can support their children's learning, as well as how they can interact with their child's school.[50]

[49] National organisations or international, such as the European Parents Association https://euparents.eu/ and COFACE Families Europe http://www.coface-eu.org/

[50] See "The Parent's Toolkit". Available at https://www.schooleducationgateway.eu/en/pub/resources/toolkitsforschools/detail.cfm?n=430

- *Assessment in blended learning*

Assessment practices shape teaching and learning and the focus of assessment at national and school level dictates which learning tasks and outcomes are valued as important and merit time and effort.[51]

Assessment includes:

- **Formative assessment by the teacher of pupils, and by pupils of themselves** (self- and peer assessment), in order to understand their progression, to identify further learning needs and to plan next steps;
- **Summative assessment of pupils at the end of a period of study** in order to establish an attainment level (a grade or description), typically done by the teacher and recorded by the school in a report which is shared with the pupils and their parents (or legal guardians);
- **Summative assessment of all pupils of a certain age/grade in order to establish attainment levels in a range of subjects that will lead to awarding one or more "certificates" or "diplomas**". This may be done by the school, region or national system. It may include teacher grades. This type of assessment has added significance in that they can determine the next stage of the learner's education: to study particular subjects at upper secondary level; to repeat a year; or the opportunity to enter further education and training or employment.

Questions were immediately raised in 2020 about both the pedagogical (teaching and learning) and managerial (process, resources, responsibilities) approach to assessment and final examinations. Experts argue that, with greater familiarity and acceptance of a variety of existing approaches, and with forward planning, assessment does not have to be postponed or only take place on the school site. In fact, changing approaches to assessment may bring about a more positive shift to self-directed learning and increase the self-evaluation capacity of pupils.[52]

The experience of remote learning also highlighted the value and role of formative assessment. Students studying from home expressed concerns that they did not know if they were making sufficient progress. Transparency of expectations, feedback and opportunities to develop competences for self- and peer-assessment were valued.[53]

> ***"It is fundamental that students have their say in how to build resilient and equitable assessment systems they feel can adequately support their learning and measure their competences beyond notionism."*** (European student organisation)

[51] NESET 2017 - https://nesetweb.eu/wp-content/uploads/2019/06/AR1_20172.pdf

[52] Inge de Waars - Student Evaluation During and After COVD-19 – EDEN, Wednesday 22 April 2020. www.eden-online.org/student-evaluation-during-and-after-covid-19/

[53] Looney, J. (2020). "The E2030 stakeholders' surveys on challenges of curriculum delivery during school closure as well as reopening of schools". OECD, Paris.

High-stakes assessments - for example, those leading to graduation - are typically monitored to ensure all students take examinations in the same or similar conditions and to prevent cheating. During the period of school closure, education systems felt unable to ensure these conditions. Many systems chose to base decisions for school advancement or graduation on teachers' summative assessments from months prior to school closure. There were several advantages to this approach -- including recognition of the value of teacher judgement, as well as the advantage of covering more curriculum requirements in a series of examinations over the year. However, systems rooted in a culture of final written examinations may find it difficult to change an approach that is assumed to be the most "fair" assessment of a pupil's competences.

Assessment approaches should be appropriately aligned with curriculum. For example, assessment within a competence-based curriculum should capture information on the learners' capacity to apply knowledge in a specific context, and gather information on processes used to address a specific task or solve a problem, as well as the outcome of that process.

EXAMPLE J: Assessment of transversal skills: policy experimentation project

Assessment of Transversal Skills in STEM (Science, Technology, Engineering and Mathematics) is an innovative policy experimentation project implemented in eight EU countries and involving a partner network of 12 educational institutions. The project aims to provide teachers and students with necessary and efficient digital assessment approaches for the development of students' transversal skills in STEM education.

Research and development is integrated in the design of the ATS-STEM educational project to allow decisions to be made based on the evidence gathered throughout the process. The objective is to analyse the possibilities of digital assessment in the implementation of teaching STEM skills and competences in European schools. The project includes a review of the latest digital tools for formative assessment in STEM education. The project activities have been affected by the pandemic restrictions but have also created a useful focus on tools to support distance learning.

ATS STEM is co-financed by the ERASMUS+ Programme (Action 3 – Policy Experimentation), where ministries of education are compulsory partners and national education agencies or education faculties essential development partners as well as pilot schools. The model will be developed, implemented and evaluated through a large-scale classroom pilot, leading to policy recommendations at national and European level for the further transformation of education. http://www.atsstem.eu/

Discussions with education stakeholders in 2020 led to the formulation of guiding principles for assessment within blended learning[54]:

[54] https://www.schooleducationgateway.eu/en/pub/resources/publications/blended-learning-guidelines.htm

I. **Transparency:** whichever approaches – both in terms of what outputs may be included in the assessment and the method (by whom, calculation of marks) by which they are to be assessed - should have a clear purpose and be communicated in good time to those involved to allow for full preparation and to avoid anxiety. Learning Management System (LMS) software requires some investment but if designed appropriately, can help to better communicate and manage blended assessment processes, alongside many other areas, between the school, pupils and parents/carers.[55] Any use of digital tools will require a data management strategy that considers GDPR.[56]

II. **Fairness:** the International Bureau of Education defines this as "the consideration of learner's needs and characteristics, and any reasonable adjustments that need to be applied to take account of them. It is important to ensure that the learner is informed about, understands and is able to participate in the assessment process, and agrees that the process is appropriate. It also includes an opportunity for the person being assessed to challenge the result of the assessment and to be reassessed if necessary. Ideally an assessment should not discriminate between learners except on grounds of the ability being assessed." [57]

III. **Equity:** assessment processes and tools should provide all leaners with equal opportunities to demonstrate their competence and better understand their progression and needs. This means considering the parity of school site and distance assessment, as well as the parity of assessment approaches used by schools across the system, using moderation where appropriate.[58] The use of online examinations software may provide a trusted approach to formal summative assessment.[59]

IV. **Validity and reliability:** validity in assessment refers to what is assessed and how well this corresponds with the behaviour or construct to be assessed. Validity is not simply the way in which [an assessment] functions, but depends on what it is used for and the interpretation and social consequences of the results.[60] Assessments are reliable if the results may be replicated (over time and across different sites).[61] These aspects are important to note if new approaches to assessment are being developed within a blended learning approach.

V. **Self-efficacy**: self-assessment by learners of their own progress, as well as peer assessment, can contribute to increased motivation and a sense of responsibility and agency in the

[55] See, for example, Alan Tait (Professor Emeritus of Distance Education and Development at the Open University, UK) *Education for Development: From Distance to Open Education*. https://jl4d.org/index.php/ejl4d/article/view/294/313

[56] For a discussion with links to resources see, for example, https://theconversation.com/childrens-privacy-is-at-risk-with-rapid-shifts-to-online-schooling-under-coronavirus-135787

[57] http://www.ibe.unesco.org/en/glossary-curriculum-terminology/f/fairness-assessment

[58] The New Zealand Ministry of Education outlines the purpose, process and benefits of the moderation of assessment: https://assessment.tki.org.nz/Moderation/Moderation-purposes

[59] See, for example, the SURF (Netherlands ICT education and research organisation) White Paper on Online Proctoring (the remote surveillance of examinations) - https://www.surf.nl/files/2019-04/whitepaper-online-proctoring_en.pdf

[60] Wyatt-Smith & Joy Cumming 2009, http://dmz-ibe2-vm.unesco.org/fr/node/12102

[61] http://www.ibe.unesco.org/en/glossary-curriculum-terminology/f/fairness-assessment

learning process.[62] As part of ongoing assessment it can help the teacher understand what has been gained from initial (e.g. distance) tasks and design the next stages. By reflecting on a course, pupils are encouraged to consider the whole process, both at distance and on the school site.

VI. **Familiarity**: new assessment approaches should be gradually introduced into schools and the system to build the confidence and competence of all those involved. Nevertheless, this should not prevent necessary immediate change. Teachers and school leaders may benefit from professional development (networking, training) and guidelines, particularly regarding online assessment.[63]

VII. **Regularity:** a single assessment period at the end of the school year allows the maximum time for learner development and may be used to decide progress to the next stage; however, this relies on the alignment of many conditions. The curriculum may be usefully divided into modules that are assessed as they are concluded; an approach already used in some systems.[64] This may help the fluid movement between school site and distance learning over the course of a year of study and alleviate pressure of single assessment.

VIII. **Diversity**: a long-term strategy for blended learning requires the appropriate assessment of broad competence development, not just knowledge recall. Using Learning Diaries or Personal Development Plans can help track individual progression across school-site and distance environments, and inform a personalised approach going forward. Computer-Based Assessment (quizzes, games, ePortfolios) offers ways of understanding and evidencing learner progression that can be used both environments. ePortfolios also enable a range of competences to be assessed and with a degree of choice for the learner to build it in a way that motivates them – important for distance learning - and showcases their strengths.[65] They also allow for peer- and self-assessment. Blended learning requires a defined strategy for the assessment of practical skills. Videos (live and recorded) and online simulations may enable some assessment at distance, coupled with flexible opportunities for on-site (school or work placement) assessment.[66]

IX. **Flexibility**: blended learning requires a flexibility that permits, for example, assessment to take place over a number of days – open assessment – or incorporate group as well as

[62] Alfredo Soeiro (University of Porto, Portugal) - How to design and manage assessments for online learning – EDEN, Monday, 20 April 2020, https://www.eden-online.org/how-to-design-and-manage-assessments-for-online-learning/
See also Ireland's National Council for Curriculum and Assessment Guide on Student Reflection: https://ncca.ie/media/1926/assessment-booklet-4_en.pdf

[63] In a European survey (9 April-10 May 2020), 67% respondents reported that this was their first experience of online teaching. https://www.schooleducationgateway.eu/en/pub/viewpoints/surveys/survey-on-online-teaching.htm

[64] For example, Lithuania switched to a modular curriculum for VET in 2017, which enabled diplomas to be awarded in 2020 to those completing more than 50% of their overall course, despite the school closures. https://www.e-tar.lt/portal/lt/legalAct/8d34ecd05c0411e79198ffdb108a3753

[65] European Commission / Joint Research Centre (2013) - https://publications.jrc.ec.europa.eu/repository/bitstream/JRC76971/jrc76971.pdf

[66] Discussed by expert representatives in the European Apprenticeships Alliance webinar series (May 2020) https://ec.europa.eu/social/main.jsp?langId=en&catId=1147&eventsId=1642&furtherEvents=yes

individual assessment, in the case of collaborative project work. Schools and teachers may be given some choice in the most appropriate type of assessment for their own subject matter and context. The use of some digital tools (for both school site and distance assessment) can also relieve the burden of grading by teachers and release time for other learning tasks.[67]

Changes to Higher Education assessment in 2020 and 2021 may pave the way for changes in school education. Many universities are known to have developed established online assessment practices that were already familiar in distance learning courses. The benefits to using a computer for assessment included familiarity for the students and legible responses for the examiners. Whilst some students were unprepared for online examinations, they also positively noted the convenience and rapid feedback. Designing "open book" assessment (where notes and texts could be used) also placed more emphasis on the applied knowledge by the students, rather than what they could recall on the day.[68]

[67] European Commission / Joint Research Centre (2013) - https://publications.jrc.ec.europa.eu/repository/bitstream/JRC76971/jrc76971.pdf

[68] EDEN (2021) Webinar: Changing Assessment Due to Covid-19: Experiences and Impact. Recording available at: https://www.youtube.com/watch?v=2YVBHgOZQl4

3.2.2. Supporting teachers

Image: Adam Winger at unsplash.com

This section discusses the role of the teacher and the necessary support and working conditions for a blended learning approach to be embedded effectively.

Teacher decisions and conditional factors in learning design

For any pedagogical approach, teachers will be committed to designing a learning experience where all pupils can participate and reach their full potential. A typical defined boundary when designing the approach is the school "lesson": a fixed period of time where teachers and pupils share the same physical or virtual space. Another typical boundary is the subject curriculum: expected learning outcomes for all pupils on defined topics. Combining school site and distance learning however requires a more holistic perspective, as the scope for bringing in other learning facilitators (typically other professionals or parents) and a personalised (learner-centred) approach potentially increases. Learning outcomes based on progression in various competence areas are potentially more likely to be valued than the time spent on a task, whilst ensuring that learners can develop all competences in a balanced way[69].

The teacher's decisions regarding the design of blended learning is likely to be based on: a) the requirements of the curriculum (which may or may not have changed to take into account blended learning approaches); b) the needs and capacity of their learners (including what

[69] Susan Patrick Chris Sturgis (March 2015) *Maximizing Competency Education and Blended Learning: Insights from Experts* Accessed at: https://files.eric.ed.gov/fulltext/ED557755.pdf

learning support they have elsewhere); and c) their own capacity as a teacher; d) the general approach of the school that they are working in; and e) the available resources.