European Parliament

Education in isolation in the pandemic, following the path of Isaac Newton

SUMMARY

While schools have remained closed due to the coronavirus pandemic, students' education cannot be suspended indefinitely without severe consequences. Alternative methods, mostly dependent on digital technology, have been adopted very rapidly. Organisations such as Unesco have been quick to monitor the situation, and the European Union too has followed developments in the Member States through its agencies and networks. Video-conferences between education ministers have been pivotal for them to discuss issues and learn from each other's best practices.

What has started as an emergency has become an eye-opener, as existing educational gaps have become more visible. Socio-economic inequalities, greater difficulties of access for those with special educational needs, barriers in home–school communication and between teachers and educational authorities have been compounded by missing digital tools and skills.

The sudden leap has also given rise to outreach initiatives and a growing awareness of resources whose potential was still under-exploited. These included numerous online platforms and other resources that became freely available to salvage the situation. As teachers, students and parents experiment with new tools, policy-makers try to understand what can be more systematically adopted in the future to make education more flexible and inclusive, and what needs to be debunked.

Learning is not limited to schooling; vocational education and training, universities and adult education sectors have also struggled to maintain their activities. At the same time, they will be expected to contribute to the relaunch following the end of confinement. Given the economic downturn, guidance and career counselling will have a pivotal role in reskilling and upskilling the labour force. The European Union has a supportive role in this process and also needs to safeguard the wellbeing of participants in its programmes Erasmus+ and the European Solidarity Corps. The European Parliament is keen to ensure the institutions do all they can. Where does Isaac Newton fit in all this?

In this Briefing

- Monitoring responses to a crisis
- Policy challenges
- Homes
- Schools and universities
- Erasmus+
- Vocational education and training
- Career guidance
- Adult learning
- Supporting the transition to remote teaching and learning

EN

Monitoring responses to a crisis

Disrupting education is a big decision. While it is true that Isaac Newton formulated the laws of gravity away from Trinity College Cambridge as he self-isolated from the bubonic plague, closing down educational institutions can hinder the study of basic notions of science, languages and mathematics. One policy response has been to observe the impact of the coronavirus pandemic on schools, in this way applying a technique in empirical research initially developed by natural scientists like Newton. Unesco, for instance, performs global monitoring of school closures caused by the pandemic. Accordingly, it notes whether a given country has closed its schools nationally or locally and identifies the number of students affected by the measure, broken down by level of schooling (pre-primary, primary, secondary and tertiary) and gender. Similarly, the European network monitoring educational systems in the EU, Eurydice, is following the situation in Member States. It published three maps on 16 April, which are reproduced below.

Early childhood education and care

Figure 1 – Impact of Covid-19: Closure of early childhood settings
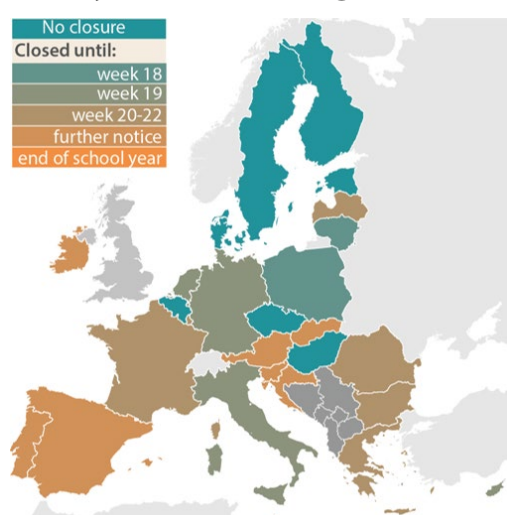
Data source: EPRS, based on Eurydice data.

The map in figure 1 reflects the closure of early childhood education and care settings with an expected date of opening. This covers settings at ISCED levels 01 and 02. The levels differentiate between provisions for children who are younger or older than three years of age. If settings accept only children of key or essential workers but no other children, then they count as closed on the map. The map reflects the decision taken for settings for younger children, where this decision is different to that for children three years and over. The category 'Operating or authorised to operate' includes systems where decisions are taken by local authorities or the facility itself. In the case of Belgium and Portugal, closure affects settings at ISCED level 02. In Germany, the map reflects the most common situation in the country, given that it is not uniform. In Denmark, settings are allowed to operate if they can respect social distancing and hygiene norms.

Schools

The map in figure 2 reflects the closure of schools at ISCED levels 1 to 3 indicating the expected date of opening where they are closed. Schools are considered closed if pupils and students may not attend them, and receive instruction from home. This does not change if only the children of key or essential workers are welcomed on the premises. In Czechia, primary schools (ISCED 1) opened their doors from 25 May for groups of not more than 15 pupils. However, the final decision to open the school lies with the school head, and parents may opt to keep their children home. Upper secondary schools (ISCED 3) opened their doors only for students in their final grade on 11 May in order to allow them to take the national exam. In Denmark, primary and upper secondary schools opened their doors on 15 April to students in their final year, on condition that the schools

Figure 2 – Impact of Covid-19: Closure of schools (ISCED 1-3)
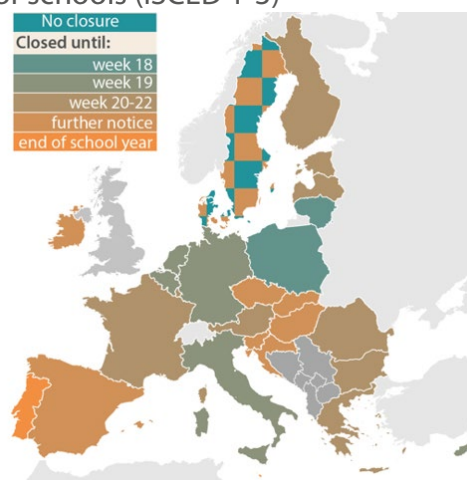
Data source: EPRS, based on Eurydice data.

can ensure social distancing and hygiene standards. Schools remain closed for all other students until further notice. The map indicates the most common date in Germany, as some variation exists. In Luxembourg and Austria, upper secondary schools opened only for final-year students on 4 May. In Finland, the first three grades of primary school remain open, but whenever possible, children should stay home and use distance learning.

Tertiary education

The map in figure 3 reflects the situation in universities and universities of applied sciences that provide programmes at ISCED levels 5-8 covering short cycle, bachelor, master and doctoral studies. A higher education institution is considered to be closed when students may not attend classes on campus, though in many countries, institutions switched to distance learning. In Czechia, tertiary education institutions could open just for individual consultation and exams as from 20 April. In Germany too, on 20 April, some higher education institutions could resume on-site activity, provided that they respected social distance and hygiene standards; ultimately, the *Länder* (federal states) are autonomous in deciding when institutions can open.

Figure 3 – Impact of Covid-19: Closure of higher education institutions

Data source: EPRS, based on Eurydice data.

Policy challenges

Monitoring exercises reflect preoccupations related to the impact of closures and the extent to which educational continuity can be assured. A survey published by HundrEd in partnership with the OECD has indicated that only 6 % of respondents thought that their education system was well prepared for the pandemic, while 17 % believed their education leaders were learning from other countries.

Furthermore, the respondents indicated that many authorities have failed to indicate which areas of the curriculum they consider a priority. On the other hand, a widespread measure has been to introduce or scale up distance learning based on different mixes of technology. Teachers and school administrators have been encouraged to use applications to support communication with learners and their parents, and to deliver live or recorded lessons. Television and other media have also been delivering educational content. Government agencies have launched awareness campaigns to communicate their distance learning strategies to generic audiences as well as to specific target groups.

The respondents to the HundrEd survey considered the highest education priorities necessitating government decisions to be: ensuring continuity in academic learning for students, supporting students who lack skills for independent study, ensuring the wellbeing of students and teachers, and providing professional support to teachers. Respondents claimed that the greatest challenges were the unavailability and lack of management of a technological infrastructure addressing student emotional health and setting the right balance between digital and screen-free activities such as reading books. A significant percentage saw the introduction of technologies and other innovative solutions and an increase in students' autonomy in managing their own learning as unexpected positive educational results of the changes caused by the crisis. However, 87 % of respondents were concerned by the fact that there is less equality in education due to the crisis. EU education ministers met by videoconference in the Council on 14 March and discussed issues such as organising virtual learning and teaching, upgrading existing IT systems, providing fair access to education and training without compromising on quality, and providing different types of tailored support to students, teachers and families.
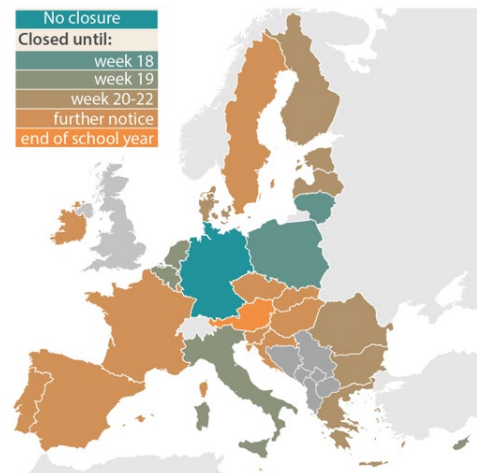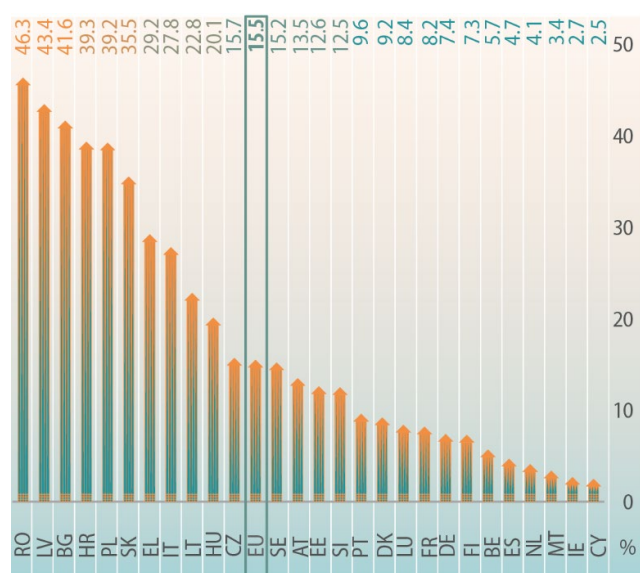
Homes

Students

While the transition to online tools and greater student autonomy are seen as positive outcomes, the OECD has claimed that it is likely that many students are unable to navigate the world of online learning on their own. According to the 2018 round of the Programme for International Student Assessment (PISA), just one in nine students was able to distinguish between fact and opinion based on implicit cues in the content or source of a piece of information. OECD analysts therefore consider that students still need considerable guidance and support from teachers. In addition, students with learning difficulties may struggle even more than their peers to work alone. As they study at a distance, they need special provisions to cater for their needs. Some examples of special provisions are applications to make the curriculum more engaging for students with Attention-Deficit Hyperactivity Disorder; subtitles and remote live captioning for hearing-impaired students; digital textbooks or special software for dyslexic students; educational learning materials for parents and communities of autistic students; and the use of teaching assistants to support individual students with their lessons. At the same time, some teachers have noticed that some students who struggled in the school environment are thriving with greater autonomy and remote learning.

Figure 4 – People living in overcrowded households

Data source: Eurostat.

On average across OECD countries, 9 % of 15-year-old students do not have a quiet place to study in their homes. In the EU, 15.5 % of people live in overcrowded homes (figure 4). These tend to be students from the most disadvantaged backgrounds. Where schools have shut down, the situation of such students becomes worse if they do not have access to online tools.

Distribution of computers in schools is more equitable than it is in homes; in fact, according to the OECD schools with students who come from disadvantaged backgrounds have a higher proportion of computers per student than schools with advantaged populations. On the other hand, in disadvantaged schools, computers are less likely to be portable. In a shutdown, students can take portable computers home but non-portable computers remain at school and cannot compensate for the lack of privately owned materials.

The issue is not limited to schools, but affects academic establishments as well. A rector has commented that there is a difference between moving towards a digital environment strategically and being thrown into it overnight. The lockdown imposed a sudden switch in all universities to distance and online learning, regardless of how well prepared they had been for the change. The digital divide exists for university students as well, and universities are investing to ensure access. They have identified socio-economic status and special learning needs as significant barriers.

However, the relationship between access to computers and educational achievement is not a simple one. While there is evidence that upper secondary school students enjoy better digital skills in schools that have more digital equipment, 2020 PISA analysis indicates that students attending schools with more computers per student scored lower when having their knowledge assessed than their peers. After statisticians eliminated the difference in scores attributable to students' and schools' socio-economic profiles, they were still left with a 6-point decline in reading scores. Analysts

interpreted this score difference as an indication that the availability of technology alone was not sufficient. A 2020 study by NESET, the network of experts working on the social dimension of education and training that provides research support to the European Commission, suggests that children gain in their capacity for empathy and attention when they are exposed to digital content that is educational and pro-social and when this does not interfere with face-to-face interactions. On the contrary, these capacities suffer when children are over-exposed to violent games, engage in bullying and discrimination and spend long periods of time on non-educational activities. Although the study refers to online activity outside school, this is interesting, as both empathy and attention are employed when learning how to read.

Member States are aware that they need to tackle the digital divide in this emergency period, where the remote provision of content, including educational, is the norm, by ensuring that all children and young people in education have access to digital tools, radio and television, which have become alternative sources of educational activities. In France, there are efforts to lend devices and provide printed assignments to the 5 % of learners who do not have access to internet or computers. In Portugal, the government has suggested a partnership with the post office services to deliver work-sheets to the homes of students without internet access; furthermore, the security forces have collaborated with some schools to deliver homework to students who do not have internet at home.

On the other hand, when children and young people do not attend school, they also miss a number of opportunities for social interaction, including participation in school sports. These are essential and integral to learning and development and have an impact on students' emotional well-being. Conversely, students who suffered bullying at school may currently find respite, discounting the eventuality of online bullying. Those whose homes are not safe spaces may be suffering from an increased sense of isolation and vulnerability, but so too may be children and young people who simply enjoyed being with friends at school. In Finland, school psychologists and counsellors offer online or in-person meetings. Spain and other Member States have set up psychological assistance for those in need, including a 24-hour hotline and monitoring of calls.

There is also concern that children and young people from disadvantaged and marginalised backgrounds have lost access to healthy meals, and may become more vulnerable to economic and social stress. This brings to mind the Commission's priority, following a call from the European Parliament, to establish a child guarantee that tackles child poverty in the EU in a sustainable and strategic way. It also highlights the two-way relationship between education and health. On the one hand, children suffering from poor nutrition and health find it harder to concentrate on their education. On the other, people with a poor level of education are more exposed to illness. A number of authorities have adopted measures to bring school meals to students who depend on them. The Autonomous Community of Catalonia (Spain) has issued credit cards redeemable in any commercial food establishment to provide meals for vulnerable children. Beyond the EU, countries such as Argentina and some parts of the United States have continued to provide meals to schoolchildren even after their schools' closure.

School closures have had an impact on the EU school scheme. This scheme budgets for the distribution of fruit and vegetables, milk and dairy products to schoolchildren. The European Commission has indicated that for the 2019-2020 school year, Member States can recognise the case of *force majeure* to reimburse suppliers and also to donate their products to hospitals, charitable organisations and food banks to reach those in need.

After protracted periods of closure, dropout rates tend to rise, as some children and young people do not return when schools reopen. One of the lessons learnt from the Ebola crisis is that refugee girls are less likely than other student groups to return to schools. This happens for a number of reasons, such as having had to assume a primary carer role, which they would not be able to shift away from later.
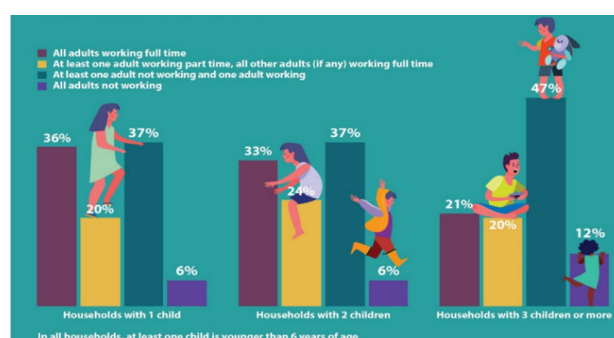
Parents

In the case of young learners, parents must take on an even more active role in their children's education. However, many parents are juggling considerably as they contend with child supervision, work duties and chores (figure 5). Some authorities provide parents and caregivers with resources. Italy is offering parents online courses on how to manage their relationship with their children as learners during confinement. Spain is using a variety of communication platforms and apps (e.g. Edugestio) through which teachers can communicate with parents and caregivers to build the learning process with them. The European safer internet centre has published a set of resources, localised help and advice by country, for parents and carers who must safeguard their children from online threats, now that they are spending even more time online.

Figure 5 – Adults in EU households with young children by working pattern of the adults, 2019

Source: Eurostat.

Even so, not all parents are equally well equipped to support distance learning and home schooling. In fact, the Asia-Europe Meeting (ASEM) has highlighted that school closures bring problems related to socio-economic disparities to the fore. Parents with limited education and resources face huge difficulties to undertake home schooling, and their children may miss opportunities to learn. Moreover, a 2020 study by Resolution Foundation has revealed that while 47 % of degree holders can work from home, only 6 % of those in work without qualifications can do so.

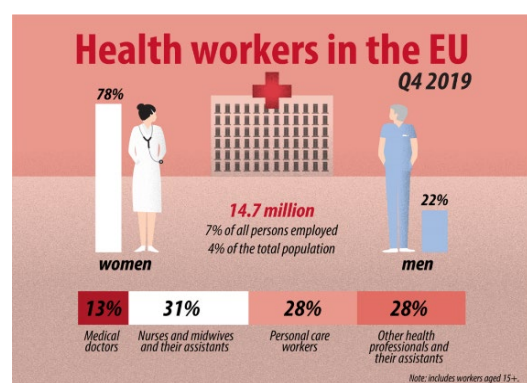Figure 6 – Key data on health workers

Source: Eurostat.

In the absence of alternative options, some working parents are obliged to leave their children alone when schools close. Other working parents miss work or reduce their working hours in order to take care of their children, incurring wage cuts and possibly financial strain. There has been the risk of strain on health-care systems and other key areas, as key workers are disproportionately likely to be female and parents (figure 6). It is for this reason that France and Belgium, for instance, have maintained a childcare service even with schools closed.

Schools and universities

Education authorities have also had to assist teachers as they adapt to online and distance teaching and establish new forms of school–home communication. Ireland, for instance, has published guidelines on how to support the continuity of education of students at risk of educational disadvantage at primary and post-primary levels. Not all school systems had been equally ready though, and teachers have reported increased stress levels. Among the causes they have cited are insufficient two-way communication between them and education authorities, additional strains related to lesson preparation and delivery, exams, and a greater demand for emotional support. Besides, school systems differ in their use of learning platforms, for instance, at the time of the 2018 PISA study, in Denmark 9 out of 10 students were in schools with an effective online learning support platform, but this was only the case for 3 out of 10 students in Luxembourg. Since the year 2000, the European Investment Bank has financed investment in school infrastructure (including digital) and in teacher training involving the handling of distance learning and digital tools. Such an

infrastructure is pivotal to a smooth operation. Another factor has been whether schools have sufficient technical staff to support teachers using platforms and other online tools.

Schools also need to support teachers to keep in touch with each other, besides their students and the parents. Sharing lesson plans on platforms and developing mechanisms that encourage collaboration for innovation and development rather than simple compliance could improve the quality of the remote and online educational experience. The School Education Gateway and eTwinning, both being platforms for schools that are part of the EU programme for education, training, youth and sport, Erasmus+, have been proactive in providing their space for collaboration.

Education authorities are also adjusting school and exam calendars. During their informal video-conference meeting on 14 March 2020, ministers exchanged information on national plans for the end of the school and academic year. Issues considered were assessment, grading, exams and enrolment in different levels of education, including higher education institutions. Austria is expecting to be able to hold end-of-compulsory-education exams normally and follow the usual procedure for university admissions. Some have rescheduled exams and assessments for all levels of schooling, including universities (e.g. France and Spain). Spain has also adjusted the school calendar to accommodate lost days of learning. Other Member States have decided to cancel exams and either organise them at a later date or else switch to other forms of assessment, such as basing the grades on the latest round of exams taken or on continuous assessment. Beyond the EU, China has provided some exams online, while Japan and Thailand have organised sessions with small groups of students taking the exam at one time, if they could not change the dates. Some parts of the United Sates have cancelled all state testing for 2019-2020. Analysts from Eurydice have reflected on how students are admitted to university and on the use of exams and on-going assessment.

University lecturers are more accustomed to online and distance teaching than school teachers, but universities are facing their own specific challenges. Rectors' conferences have called for open access to coronavirus and related research, a call that has been supported by governments and the Commission and positively received by many publishers and funders. Libraries too have asked for the easing of licensing restrictions, user limits, interlibrary loans rules, paywalls, and campus-only rules to allow higher education institutions to function under these circumstances. Quality assurance activities too have needed to carry on despite the impossibility of on-site visits. The European quality assurance register (EQAR) and the European quality assurance association (ENQA) have issued indications on how activities can be maintained together with guidelines for online learning and teaching, alternative assessment methods, and indications on how to maintain academic standards and student-support services.

The European Students Union has drawn attention to the efforts made by healthcare and medical students and interns who are staffing healthcare facilities in the face of staff shortages, pointing out that provisions need to be made to ensure that they will be able to conclude their studies without additional burdens. They have also pointed to the contribution of restrictive university admission rules and expensive university fees to shortages of health professionals in some countries. The union has also been concerned by the impact of measures on the continuation of studies for all local and mobile students and on student finances in general. It has therefore appealed to extend the term for repayment of student grant instalments, and to introduce measures that would ensure full access to online learning by all students. Last but not least, the union has also joined an appeal to universities to include students in decisions taken to manage the crisis.

Erasmus+

Some 165 000 people across Europe are currently on an Erasmus+ exchange and 5 000 more are involved in European Solidarity Corps volunteering projects. They need reassurance regarding their status and financial situation. In the first months of 2020, the Erasmus Student Network published a study on the impact of the coronavirus pandemic on student exchanges in Europe. Results showed that towards the end of March, 37.5 % of students had faced difficulties to return home, had

problems with accommodation and had found it difficult to access basic needs such as food and sanitary products. In these circumstances, the Commission's first priority has been to give full flexibility to participating institutions and national agencies so that current Erasmus+ students would be able to carry on in any way possible. The Commission has published a factsheet to support participants in the Erasmus+ and the European Solidarity Corps programmes with indications addressed to individuals, institutions and national agencies on the best course of action in the current circumstances. In the case of decentralised actions, such as mobility activities, national agencies and the Education, Audiovisual and Culture Executive Agency (EACEA) are in charge of providing the necessary information to affected individuals and organisations. Innovation, Research, Culture, Education and Youth Commissioner, Mariya Gabriel, has reported to the European Parliament Committee on Culture and Education (CULT) that 60 % of those on a long-term exchange and 70 % of those on a short-term exchange had cancelled their participation. Most of those who decided to carry on said that they had access to online learning. The crisis has created greater awareness of the need for blended mobility, which should be accessible to all students and complementary to physical mobility, rather than being a replacement for it. On the other hand, in mid-April the Members of the CULT committee sent a letter to Commissioner Gabriel, asking for a more coherent and consistent approach, as national agencies in different Member States had adopted different solutions. The impact on Erasmus+ is also larger than on learning mobility. For instance, one of the new European Universities that have recently been approved was set to hold an event that would bring together participants at different levels of all the participating universities to build the network. The organisers had to rethink their strategy and create alternative online networking activities instead.

Vocational education and training

The vocational education and training sector (VET) in all the Member States is setting up online environments, from simple messaging services for students who do not have a computer at home to elaborate IT learning platforms. On 18 March, the Commission undertook a survey among VET providers and policy-makers on their responses to the pandemic, with the aim to monitor developments.

Cedefop, the European centre for the development of vocational training, is monitoring vocational education and training policies during the crisis. The focus is on school closures, the role of VET stakeholders in addressing the crisis, the organisation of teaching and learning, practical training in companies, decisions on final exams and assessments, and reflections on the main challenges. The results of the monitoring will be published by the end of June in the form of national news stories.

Other institutions are taking similar actions: the International Labour Organization (ILO), the United Nations Educational, Scientific and Cultural Organisation (Unesco) and the World Bank Group have joined forces on a survey of good practices seeking to mitigate the impact of the pandemic on technical and vocational education and training. It targets providers of initial and continuing technical and vocational education and training, policy-makers, such as ministries of labour and education, and social partners. The ILO and the Global Apprenticeship Network (GAN) have launched another survey on staff development and training in the context of the pandemic. It is targeted at public and private enterprises and other organisations. Unesco and the International Centre for Technical and Vocational Education and Training (Unevoc) have also set up the TVeT Forum, a platform that provides mutual support, knowledge-sharing and peer learning for providers of technical and vocational education, as well as a list of resources to support continuity.

A number of Member States have been sharing VET-specific content, including Ireland, Belgium, France, Spain, Croatia and Romania. Distance learning focuses mostly on theoretical knowledge, but in some cases, videos include demonstrations or step by-step instructions to demonstrate practical skills. In France, the ministry in charge of vocational training has made resources available to facilitate continuity. This was made possible after a number of partners offered to share training content free of charge. This included Massive Open Online Course (MOOCS) and materials for core subjects in the technological field. The ministry has also published a list of technical solutions: web

conferencing tools, collaborative tools, server links and clouds. Spain has extended the calendar for work placements and rescheduled university entrance exams. Austria has amended its law on vocational training and some companies are allowing trainees to telework. Italy is promoting work-based learning through simulated enterprises and distance internships. In Ireland, apprentices are supported by a Moodle learning platform.

Under-investment in the sector has undermined the quality of face-to-face teaching. Inequalities between regions in their digital infrastructure has had an impact on distance provision of educational content. Some VET professionals, like other teachers, do not have the necessary skills to devise adequate online teaching and even lack access to the necessary distance-learning tools. Some students have not been ready to maintain engagement with digital learning either. At the same time, it is not easy to transfer technical and vocational education and training, as well as skills-learning, to online solutions, and emergency responses cannot be seen as permanent substitutes for face-to-face and hands-on learning.

Career guidance

The current situation highlights the importance of career guidance to help students who are at the end of their studies and adults making employment transitions. The economic downturn will likely delay the transition of school-leavers to the labour market, forcing them to consider other options including further studies. Adults looking for a job will need help to identify upskilling and reskilling opportunities, develop career management skills, resilience and adaptability. In a moment of greater needs, guidance too has had to make a sudden leap to the digital environment. As is the case for teachers, the transition to a multi-method and multi-channel delivery is essential to reach all students but requires training and experience to develop a flexible approach. For instance, practitioners have been surprised to discover that the telephone is still a very good tool to keep in touch with students at risk of early school leaving.

An example of good practice comes from Estonia, regarded as a digital champion. Already before the crisis, the country had been offering remote guidance to widen its outreach, though professionals and users generally preferred face-to-face encounters. This practice has made it easier to upscale the remote offer, especially as all schools have a contact point with the central guidance service that keeps them updated on any changes and developments. Estonia is also experimenting with online careers fairs following its experience with the EURES international online job fairs. Careers fairs had already proven their value in connecting students with prospective employers and in giving students an overview of existing opportunities, so migrating to online alternatives seemed preferable to foregoing any opportunity to organise these fairs.

There has also been an increase in online training of guidance councillors themselves during the lockdown period and, when opportunities have not been available, guidance professionals have expressed an increased demand for training. There is also evidence of increasing collaboration among guidance professionals and cooperation with other public, private and community players.

Adult learning

As yet, stakeholders cannot estimate the exact proportions of the impact the pandemic has had on adult education. However, as funding for non-formal adult education is usually project and programme based, it stops for activities that cannot be carried out remotely. In this case not even *force majeure* provisions introduced by Member States to safeguard education and lifelong learning apply. Consequently, many educators and trainers have lost their jobs. Adult education providers are even unsure they will be able to resume their activities after social distancing rules relax. The European Economic and Social Committee (EESC) adopted an opinion in May 2020 highlighting the importance of sustainable funding for lifelong learning for the development of skills, and called for coherence within the European Semester between the invitation for investments in education and optimisation measures.

As workers face long-term unemployment, which leads to skills obsolescence, social protection measures can be complemented by reskilling and upskilling opportunities, recognition of non-formal learning and counselling. On 22 April, the Commission and the European Investment Fund (EIF) launched a new pilot guarantee facility to improve access to finance for individuals and organisations looking to invest in skills and education. The €50 million pilot scheme will support financing for students, learners, enterprises investing in the upskilling of their employees, and organisations supplying education and training.

Self-improvement courses for adults require time, appropriate devices, good internet access, and adequate digital literacy. Giving resources to those who lack them is essential. Competition within a household for digital tools, as several members try to study or work at the same time, may be a barrier. Some adults might have the time and digital tools but not the knowledge of how to manage self-directed e-learning. Two-fifths of the adult population in the EU has low digital skills, so many would find it difficult to participate in learning activities that are delivered online. Introductory courses would be useful in both instances.

Adult education is not limited to teaching new skills. It also has the function of providing social networks to adults at risk of social isolation. Adult education institutions that have shut down courses still employ their core staff to preserve at least minimum social contact by phone or by other means, for example, to reassure people on financial matters, to counter fake news that spikes in crisis periods, and act as neutral outsiders in cases of domestic abuse.

As adult educators have to explore and adopt new online tools and techniques to maintain their training and learning activities, EPALE, the EU platform for adult learning, has sought to keep their community connected and help them to share experiences and expertise with each other. On the one hand, blog posts in the form of expert interviews investigate digital learning opportunities and ways to overcome barriers. These are complemented by a call to the whole community of adult educators to share their stories of problems and solutions related to e-learning, online teaching and virtual mobility. These stories will provide inspiration both to the platform members and, through social media, to those beyond it. EPALE has also tapped into its rich content to produce a series of resource kits promoting tools and best practices in the delivery of adult education opportunities through distance learning.

Supporting the transition to remote teaching and learning

A number of key players have made efforts to support the transition to off-site teaching and learning. This briefing will cite a few more examples to give a flavour of the initiatives on the ground.

The Commission has compiled lists of online platforms and EU-funded projects to support continuity in education and training activities, while also indicating that the online tools presented serve different educational purposes. For instance, these tools connect educators and learners who are in separate locations; provide access to information and environments that are not usually available in every home or institution; and support flexible continued professional development of educators. The European Schoolnet published resources by Member State, and the European Committee of the Regions (CoR) has complemented this initiative by publishing some resources and examples of good practice emanating from the regional level.

The OECD, in partnership with HundrEd, has published a report providing resources for learners, teachers, schools and education leaders, as well as a number of reflections on how the crisis can turn into an opportunity to improve quality and equity in education. The report presents a 25-point checklist for a structured educational response. This includes points such as the establishment of a task force or steering committee and coordination with public health authorities. It also indicates that there should be a clear definition of learning priorities, clear roles and expectations for teachers, and structures that foster collaboration among professional teacher communities. It further

suggests the establishment of structures that support parents and ensure that school leaders receive the financial, logistical and moral support they need to succeed.

Estonia has decided to share with other countries its solutions and best practices that support distance learning. Accordingly, teachers from the ASEF Classroom Network have offered to provide online tutorials for teachers, students and parents in need. The Erasmus Student Network (ESN) has set up a page with volunteering suggestions and collected messages of reassurance and comfort from students to students across the globe in a video. The European Students Union has published practical health information for students. The digital repository of Ireland has offered social studies students access to its data sets as a source of learning materials. It also provides tips on how to choose a platform to conduct video conferences.

As the transition to the second phase of the lockdown with some easing of measures approaches, the Commission has issued a roadmap to guide the lifting of containment measures; this includes the reopening of schools and universities. The United Nations Children's Fund (Unicef) and Unesco have produced a set of guidelines on how to prevent and control the spread of the coronavirus when schools re-open. EU education ministers held another informal video-conference on 18 May 2020, to discuss the gradual reopening of schools, the organisation of school-leaving examinations and admission to higher education institutions. In many Member States, school attendance will be restricted to specific levels and small groups respecting social distancing and hygiene standards. Most Member States confirmed they would organise school-leaving exams with some adjustment to content and timing. Ministers appealed for flexibility in higher education admissions.

Taking a medium- to long-term view, the Commission has organised a pan-European Hackathon, to incite disruptive solutions to challenges linked to: e-learning methods and tools; family life during remote working and education; challenges related to primary, secondary and university education; and others focused specifically on students. Other initiatives include Impact EdTech, a €6 million programme co-funded to boost innovation in education by accelerating the most disruptive EdTech solutions with two open calls that will run until December 2022, and a mapping exercise of online digital skills modules supported by the European Parliament. The Commission has also indicated that it would use the upcoming review of the Digital education action plan in mid-2020 to further support the development of online learning at different levels of education across the EU with short, medium- and long-term planning. Short-term planning will focus on opening and widening access. The Commission has been considering whether it is time to relaunch the idea of a European platform given that a similar idea had not taken off five years ago. Alternatively, it could make existing platforms interoperable.

The current situation has opened a number of long-term opportunities. Secure systems are being tested for making it possible to take exams remotely. Educational systems can develop models that give students greater agency and autonomy, while keeping appropriate levels of guidance to keep them engaged. Teachers can be encouraged to think creatively as a profession on how they can combine digital tools with their expertise to better effect. The sudden transition to distance learning provides an unexpected opportunity to consider the development of a mature use that will enhance the flexibility of our educational systems as well as the development of sound emergency remote teaching models that can be activated when the situation requires. The period of school closures has also brought to the fore lacunae in our education systems. Policy-makers, educational leaders and teaching professionals have had to contend with gaps in home–school cooperation as well as with challenges posed by the fact that groups of learners are left behind, and digital tools and skills are missing. This is an opportunity to reflect on the initiatives that have developed while schools remained closed, on what the new situation has rendered possible, on what innovations have worked or failed and on how policies can build more resilient, more equitable and more inclusive learning systems. Educational research can document and systematise the experimentation that has taken place so that different systems can learn from each other and reflect together.

The massive transfer of teaching and learning activities to online tools and platforms may have kick-started a shift that brings learning more in line with the technological innovations that have been under way for some time. Negative experiences such as higher stress levels and dissatisfaction with the results achieved compared to the efforts made within the teaching profession and among parents may also create resistance.

An analyst from the OECD has suggested that intelligent systems helping teachers and parents navigate digital resources available for free and smart systems helping teachers decide on the right type of task could have alleviated some of the burden of online teaching for both teachers and parents. Intelligent systems that help students with homework could have benefited children, especially those who can count less on their parents' support than their peers. However, such systems are neither widespread nor yet sophisticated enough. The EU lags behind China, the United States and India in investments in EdTech, which could lead to a situation where children are educated by companies originating from a small number of countries.

At the same time, the use of online platforms for teaching and learning raises issues of safety and security that are especially sensitive when children are involved. As materials are created and exchanged, the issue of authorship and ownership of intellectual property rights can become contentious, especially within higher education institutions. It is also widely known that online activity generates big data, and companies have added a twist to Isaac Newton's empirical methods, which combine detailed observation with mathematical operations, adding a quantum leap in the extent to which they profile users for commercial purposes. The EU has started to address some of these issues through the General Data Protection Regulation (GDPR, introduced in 2016), copyright rules and rules on intellectual property rights; yet, as education increasingly adopts digital tools, strategies and regulation too may need to cover new ground.

Another anecdote about Isaac Newton revolves around his role as scientific advisor on navigation; this is a poignant image as educators steer their course by navigating the internet. Yet, what is more striking is that Isaac Newton made enormous contributions in a variety of roles, becoming a figure representing an era that, like our own, stood at the cusp of huge changes. The documents issued by EU institutions require an important contribution from education and lifelong learning stakeholders, both of whom should undertake the role of preparing youngsters and adults alike to rise up to the challenge of disruptive technologies, to set EU economies on a green and sustainable course and to live as active and inclusive citizens. Education and lifelong learning are national domains, but on the EU horizon are the update of the digital education action plan, the launching of the European education area and the approval of the funding programmes in the multiannual financial framework.

DISCLAIMER AND COPYRIGHT