Tertiary Education and COVID-19:
Impact and Mitigation Strategies in Europe and Central Asia

Contents

Executive summary

Since the arrival of COVID-19 and the subsequent lockdown in many Europe and Central Asia (ECA) countries, tertiary education institutions have had to move swiftly toward online provision to ensure continuity of teaching and learning and, at least to some extent, exams. It seems that this transition was comparatively easy for those countries that had invested in the sector and approached digitalization in a strategic way precrisis (for example, Denmark, Estonia, Finland, France, Germany). Countries that had not developed a strategic approach toward digitalization did not provide the support; those that, more broadly, had seen decreasing investment in higher education faced significant difficulties. This goes beyond digitalization in the narrower sense and also applies to issues like student financing, quality assurance, and the status of academic staff.

This Summary Note offers the following 10 key recommendations to policy makers and tertiary education institutions, and to donors and multilateral agencies, on how to address the crisis.

1. Account for all staff and students, particularly those who were engaged in any mobility programs away from their home institutions, and support to the extent possible the return of staff and students to their home countries. While ensuring the continuity of teaching and learning is a key task, guidance and counseling need to be maintained during the crisis.

2. Address infrastructure issues and lack of equipment swiftly, to the extent possible. Share educational materials and resources among institutions. Many countries provide open-access resources; make sure they are known and available.

3. Take timely decisions on the academic calendar (exams, admission, graduation) based on epidemiological guidance and available information. Communicate them clearly, so that all the involved actors, particularly students and their families, can plan. However, be prepared to reassess and adapt quickly to rapidly evolving circumstances. Move ongoing and end-of-year exams online where possible.

4. Make equity a priority during the crisis and beyond. Provide additional support to at-risk students who are particularly affected by the crisis, to the extent possible. Where learning is discontinued, plan flexible measures to bring students back on board as soon as possible and help them catch up. Countries are encouraged to ease requirements for course completion and extend student funding arrangements (stipends, grants, loans).

5. Institutions should consider a freeze on staffing arrangements as long as it is feasible. The end of the crisis will provide a more opportune moment to consider medium-term staffing needs. Staff lost by institutions and academia in some cases might be difficult to bring back. Further, management needs to consider the specific situation of administrative staff, who are likely to be under pressure.

6. Communicate with current and prospective international staff and students, take care of their specific needs, and where decisions cannot be taken right away, provide flexibility and facilitate decision making. Countries are encouraged to extend visa arrangements. Institutions might want to consider additional "internationalization at home" measures in order to maintain student global learning efforts.

7. Work with <u>quality assurance</u> agencies to adjust quality assurance mechanisms to the crisis and the evolving situation. This concerns not only online learning but also established schedules and mechanisms for the accreditation and evaluation of programs and institutions.

8. Liaise with <u>pre-tertiary decision makers to find suitable joint solutions</u> in countries where university access is based on high-stakes exams. To ensure continuity of learning, it might be advisable to replace these exams with continuous assessment or find a suitable online option, where the circumstances allow, and facilitate equitable access to these options. Admission to tertiary institutions will need to be adjusted to the new circumstances.

9. <u>Ringfence public funding for tertiary education.</u> Decreasing funding for teaching and learning, research, and innovation will harm postcrisis economies in a lasting way.

10. <u>Plan for a gradual reopening,</u> prioritizing the areas that would need to be accessed at the earliest opportunity (for example, labs necessary for exams that cannot be conducted in any other mode), and analyzing the precautions (such as masks and number of people in the building), which should apply and could help speed up the process of reopening.

Context

Since December 2019, COVID-19, a highly infectious disease caused by a new virus, has had an increasing impact on countries and regions around the world. Schools have been closed and economies affected. As of 26 May 2020,[2] there were 5,371,700 cases of COVID-19 worldwide, of which 1,828,598 were recorded in Europe. While Western Europe (in particular, France, Germany, Italy, Spain, and the UK) have been badly affected, the influence of COVID-19 has also been significant in the World Bank client countries of (Eastern) Europe and Central Asia (ECA). The full impact of the crisis will only become visible over the next months and even years.

Besides schools, universities and other higher education institutions have also quickly suspended campus-based operations, such as teaching and research. This is likely to have a significant impact on countries' competitiveness and their ability to foster advanced skills and regional development. With student and academic mobility being a key dimension of the Bologna Process (a pan-European higher education reform process), mobility restrictions particularly affect tertiary education. Furthermore, restrictions on research activity might affect the COVID-19 response in a direct way, as universities through their research and training of technicians are key players in developing the response to the COVID-19 pandemic.[3]

State-of-the-art university infrastructure, developed within the World Bank HERIC project in Montenegro, helps battle COVID-19

While developing economies like Montenegro are facing massive challenges in successfully battling the COVID-19 pandemic, the universities can help in many ways. As reported by Montenegrin minister of science Sanja Damjanovic, "Due to the recently funded Higher Education Research for Innovation and Competitiveness (HERIC) Project financed by a World Bank loan, which closed last year, after a successful implementation, the country is now much better prepared to fight the Covid-19 pandemic. …(T)wo out of 8 HERIC project-funded academic centers are now directly contributing to the fight against the Covid-19 in Montenegro."

Part of the HERIC-Lovcen project led by Dr. Igor Pajovic at the **University of Montenegro**, led to the installation of a real-time reverse transcription polymerase chain reaction (RT-PCR) machine for the detection of viruses, which is now stationed at the Institute for Public Health in Podgorica (a partner in the HERIC-Lovcen Project) and is being used to perform the RT-PCR analysis of COVID-19. According to the International Atomic Energy Agency (IAEA), use of RT-PCR is "one of the most accurate laboratory methods for detecting, tracking, and studying the coronavirus."

3D Printed Visor <mark>The photo should have a credit.</mark>

In addition, through HERIC's support, **ProDe Laboratory** was established at the **University of Donja Gorica (UDG)** in Podgorica and was equipped with a state-of-the-art professional 3D printer, a 3D scanner, 3D modeling software, and equipment for mechanical testing of materials and more. 3D printing in Montenegro is now being extensively used to produce visors for protection against COVID-19. Visors provide an excellent shield and are being used by medical staff in the Clinical Center of Montenegro, the Institute for Public Health, and other clinical centers throughout country in the fight against COVID-19. The HERIC-ProDe project, led by the UDG, is making significant contributions to this rapid-response initiative.

Source: https://blogs.worldbank.org/education/montenegro-how-higher-education-and-innovation-project-helping-covid-19-coronavirus.

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[2] https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases.

[3] "At universities around the world, international teams of researchers are working around the clock to find a cure for, and mitigate the impact of, COVID-19, the disease caused by the novel coronavirus. During this time of global need, these scientists and scholars have become increasingly connected and interdependent, disregarding traditional concerns such as academic credit. They are sharing data and collaborating across national borders in extraordinary new ways. I can speak directly only to the work of my own university, the University of Oxford. But our researchers' efforts are being aided and informed by the work of countless others….," - states Louise Richardson, Vice-Chancellor of the University of Oxford. (https://www.foreignaffairs.com/articles/world/2020-04-09/universities-fill-void).

Impact and mitigation 1: teaching and learning

Teaching and learning:

Teaching and learning have been impacted by the COVID-19-related crisis in the most direct way. This is primarily due to the absence of options for face-to-face interactions for an extended period. Some countries in the ECA region initially stopped the education process at universities for a short break only (for example, early holidays were announced in the UK, and an additional one week of vacation took place in Russia; the Kyrgyz Republic announced a longer holiday break to be able to prepare universities for distance learning). However, after understanding that the COVID-19 epidemic and quarantine measures would last for months, the learning process has continued in a distance mode using online technologies. In fact, most countries of the region have by now moved to online learning at the tertiary level, with only a few exceptions due to a specific political environment that has resulted in a "business-as-usual" approach (Belarus, Tajikistan). However, on 10 April 2020, the Ministry of Education of Belarus asked the universities to develop a mechanism securing distance teaching and learning.[4]

> ### COVID-19 affects all aspects of university operations: Testimony from North Europe
>
> We have had good help from the Ministry [of Education]. They have created a number of provisionary measures that allow us to bypass normal grace periods in terms of making changes to formats, content, etc.
>
> We are running most of our classes through Zoom or Blackboard Collaborate. The curriculum has also been transformed so that students could follow specific readings and assignments. It would be fair to say that there is an increased load on students to be self-disciplined and follow classes without the normal supervision. We have encouraged students to continue their study groups – now only doing it online through Skype for Business or the like.
>
> Exams is a complicated business. So far, we have converted almost all exams to take-home assignments, for example, a response paper within 24 hours. We are also experimenting with oral exams online. This has required us to develop new procedures in order to prevent any dishonest behavior. As for the summer exams, we decided to conduct these almost entirely online as well. The most difficult exams are tests in the lab or clinical exams, for example, in the health sciences. In those few cases we may see the need to postpone until August.
>
> It has been difficult to continue operating student exchanges. Some have stayed, but most students have returned to their home country. The same goes for our students. They are mostly following online classes at their host institution, but now in some cases from a different country. For a number of our returned students, we have had to enroll them in [our] classes and have them catch up. This is, however, more the exception than the rule.
>
> *Source*: **Authors' exchange with Kristian Thorn, Director of Education, Aarhus University, Denmark.**

Switching to the online mode of teaching and learning has revealed several global and local challenges that universities are facing right now. In some ECA countries, around 40 percent of the population still do not use (or do not have access to) the internet.[5] Countries like Bulgaria, Georgia, Ukraine, and Uzbekistan may thus face difficulties in the full implementation of distance learning.

Among global challenges, the following are related to the online infrastructure:
- Weakness of internet connection and internet speed in many countries
- High prices for a good internet connection
- Absence of computers/laptops/tablets/smartphones that support online teaching and learning
- Many online instruments, platforms, and websites crashed when an unexpectedly high number of clients connected to them.

There are also the following logistical, social, and psychological challenges:
- Not all students and professors have a separate room/workplace at home that provides an opportunity to focus on teaching and learning.

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[4] https://edu.gov.by/news/organizatsiya-uchebnogo-protsessa-na-vsekh-urovnyakh-obrazovaniya-na-osobom-kontrole/.
[5] https://data.worldbank.org/indicator/it.net.user.zs?end=2018&start=2018&view=map.

- The distance mode does not always allow for advanced ways of teaching in terms of group work, discussions, interactive project work, etc., which as a result affects the development of soft skills among students.
- Long periods of self-isolation can have an adverse impact on the psychological well-being of students and staff, especially for those who live alone, international students, and students/staff who are not in their place of origin.

Socioemotional learning in a digital context

Our colleagues who moved their classes online a few weeks ago have had to walk a tightrope between addressing everyone's disorientation and getting on with their curriculum. Putting socioemotional learning before the cognitive work helped them acknowledge reality and set the frame for learning. One colleague opened the class with a short meditation. Another invited students to share what it felt like connecting remotely in a document that everyone could see like a live whiteboard. Both told us that those moments made them – and their students – renew their commitment to each other and move on with lively classes. Surveyed afterwards (as it is easy to do with digital tools), their students said that those were the most useful moments of the daily class. This kind of learning isn't prepared and imparted – a leader facilitates it, but it's built together.

The combination of these two types of learning [that is, cognitive and socioemotional] makes us competent and keeps us human. Their separation makes us clueless, paranoid, or both.

Source: *Harvard Business Review*; https://hbr.org/2020/04/keep-your-people-learning-when-you-go-virtual.

Furthermore, there might be a tendency to focus on delivering cognitive skills at the expense of socioemotional skills.

Overall, it is important to collect feedback from students, not only with regard to the content but also modalities of learning.

In addition to global, common challenges related to teaching and learning, there are also local considerations specific to a number of countries and universities, though perhaps not all, of the ECA region. The following list covers both:

- Not all academic staff are ready to switch to an online mode of curriculum delivery. This might not be a matter of personal preferences, but an absence of the skills needed and previous related training.
- Though there was significant interest in distance tertiary education during the last decade, in some countries, there is an insufficient amount of learning materials available online. This particularly affects countries teaching in languages that are not used in other countries (which would allow for synergies).
- In many universities, the existing online infrastructure does not allow for a massive use of distance learning – university websites and library websites stop working, professors are not equipped as needed with electronic devices, research facilities do not provide opportunity for remote work, etc.
- Guidance and counselling for students work less well or are not available at all in the distance mode for academic guidance, career guidance, psychological counselling, and professional orientation for school graduates.

Short- and medium-term COVID-19 impact mitigation policies concerning teaching and learning could include the following:
- Strong immediate support to the existing national (including private) websites, platforms, and instruments to ensure their functioning even with a high number of connections. Support can be provided in terms of granted/loaned hardware (servers), but also through the work of IT specialists, organized on both a volunteer and paid basis. Such work could also include design and strengthening of university portals.
- Development of short (freely accessible) video courses on how to use existing instruments for distance learning and uploading them to the most applicable or readily accessible platforms (for example, YouTube) for both professors and students. These courses should be succinct and practical and cover differences across subject areas and training approaches like group work, projects, etc. This can be done on both a national and institutional level.
- Universities need to commit to keeping all their staff and students connected – not only those directly affected by teaching impacts of the pandemic. Universities can assign staff and recruit volunteers to

regularly connect with colleagues and students and develop joint activities and events online. Guidance and counselling should not be considered a side issue during the crisis but should become an integral part of an institution's core response.

- This is a time to gear up learning management systems and networking: Universities and individuals should reach out to partners and collaborators, strengthen established partnerships, and develop new ones. More affluent and better prepared universities (and countries) are encouraged to make their online resources available to universities, regions, and countries which are less well prepared. Such academic partnerships and networks should receive dedicated support on the national level. Beyond an immediate crisis response, the partnerships might prove helpful and inspiring beyond the crisis.

- During this time, there is high pressure on, and a tremendous workload for, management and administrative staff of universities, as they are responsible for ensuring the continuity of the teaching and learning process. Their work is often not seen or recognized; however, there is no successful transition to quality distance teaching and learning without capable and committed support staff.

Besides the challenges listed in this section, it is worth noting that the ECA region is, overall, in a more favorable situation than many other regions of the world. This is due not only to the endowment and comparatively stable financing of institutions, but also to the Bologna Process, which aligns most national tertiary education systems, gives them some joint direction for development, makes them more compatible, and provides a joint "language" for communication on tertiary education. This alignment might help mitigate the COVID-19 impact through peer discussions, learning from the experience and best practices of neighbors, and support for finding the most effective way to address challenges, even though countries face different challenges.

Impact and mitigation 2: exams, admission, graduation

Beyond teaching and learning, there are serious challenges regarding the academic calendar and associated issues such as exams, admission, and graduation. All ECA countries face these challenges and are trying to find solutions.

Exams:

- *School leaving/university admission exams.*

Face-to face exams are not possible within quarantine and confinement situations. Therefore, countries with national school leaving exams that are separate from university admission, but also those where both form part of one process, face the question *of how and when* to conduct these exams. For example, several Latvian universities anticipate serious issues if school graduation exams are canceled, as the universities have neither the required infrastructure nor additional resources to conduct entrance examination remotely.[6]

At this stage, it seems that most ECA countries have not taken a final stand on this: some are still trying to adhere to the usual dates in May/June, some have already postponed exams to July/August or early autumn. All these countries are in a waiting mode, hoping that the COVID-19 crisis is not going to last very long. At the same time, some countries (for example, France, Ireland, Norway, and the UK) have already canceled their 2020 school leaving exams; in some cases, student results will be proposed by teachers and/or calculated on the average progress in studies during the last year(s). However, some countries are trying to adhere to normal procedures. For example, the Georgian Minister of Education, Science, Culture and Sport is sure that the school graduation examination will take place as usual,[7] mostly because of the successful *Teleskola*[8] (TeleSchool) initiative, which also provides consultations for university applicants. The Organisation for Economic Co-operation and Development (OECD), in a recently published document, highlighted the Georgian

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[6] https://bnn-news.com/universities-in-latvia-have-no-plans-for-entry-exams-if-central-exams-are-cancelled-212100.

[7] https://sputnik-georgia.ru/society/20200406/248169068/Etot-semestr-obyazatelno-sostoitsya---ministr-obrazovaniya-Gruzii.html.

[8] *Teleskola* is a Georgian educational project in collaboration with a Georgian public broadcasting channel. On 30 March 2020, the Georgian Public Broadcaster's Second Channel started live transmission of lessons for students. The project envisages the execution of tele-lessons provided by the national curriculum.

example as good practice with regard to overcoming the challenges posed by the coronavirus outbreak.[9] In Finland, university entrance exams are going to be replaced by other alternatives: digital admissions procedures, online courses, certificate-based admission, or the open university route. Small-scale entrance examinations are still regarded as an option, however, under careful precautions to protect the health of applicants.[10]

Admission:

- *University admission procedures for both Bachelor's and Master's degree.*

The COVID-19 pandemic affects administrative procedures in universities, as well. Many countries have yet to take a decision on how admission to universities will work in 2020. It seems clear that admissions to universities will be postponed, and some countries have already articulated that expectation (for example, Russia); however, no final decision has been taken regarding how long this is going to be and what will be the procedures for applicants. Other universities, however, are proceeding with online applications.[11]

- *International student admission procedures for both Bachelor's and Master's degree.*

Some of the related issues are the same as above; however, international students will face additional challenges concerning admission as some countries closed their borders to foreigners (for example, Denmark, Georgia, and Hungary). While some Master's degree programs accept applications throughout the year, and there is still a possibility to apply later, for others, and notably for Bachelor's programs applicants, the timing of the crisis poses a profound challenge. Some countries have already announced a delay in visa applications (for example, the Netherlands).[12]

Graduation:

- *University graduation exams and procedures for both Bachelor's and Master's degree.*

Graduation is being handled with less uncertainty in ECA countries. Several approaches are used: postponing thesis defense and graduation (for example, in Turkey[13]), undertaking them online, and sometimes providing students the opportunity to choose (for example, medical students in Germany). For universities, this is not as hard to manage either academically or administratively. At the same time, the COVID-19 pandemic will have a huge negative impact on entrance to the labor market of 2020 graduates. Based on the experience of previous crises, this cohort will feel the impact of the recession throughout their lives.

Uncertainty is clearly dominating countries and universities across the ECA region in terms of formal procedures and changes in the academic calendar, especially with a view to admission. Decisions need to be taken and publicly articulated as soon as possible to ensure transparency and confidence in the system, especially for prospective students and their parents.

Possible COVID-19 impact mitigation strategies in the areas of examinations, admission, and graduation policies include the following:
- Postponing decisions in the expectation of a quick end of the COVID-19 pandemic is not recommended. This should be a time for policy makers and institutional leaders to provide clear guidance on how to approach examinations and related procedures this year.
- Examining options for school leaving/university entrance exams: first, to move them online,[14] if possible, and second, to cancel them for this year with results to be proposed by teachers and calculated on

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[9] https://globaled.gse.harvard.edu/files/geii/files/framework_guide_v2.pdf.

[10] https://www.unifi.fi/uutiset/university-entrance-exams-to-be-replaced-by-alternative-admissions-procedures-this-spring/.

[11] Business schools in Europe, for example, are proposing various solutions; https://www.topmba.com/admissions/business-school-admissions-covid-19-coronavirus.

[12] https://www.nuffic.nl/en/subjects/coronavirus/.

[13] http://www.fbe.yildiz.edu.tr/announcements/996/Graduate-Education-Procedural-Adaptations-due-to-COVID-19-Outbreak.

[14] Defending a PhD Dissertation could also be held online. Illustrative experience provided by Ashton Merck, PhD, Duke University, USA; https://docs.google.com/document/d/1ktdFVX0gBVErixR1wWZeguPTw6HQmf_zwPEUYVmuVqc/edit#.

the grades/average progress during the last year(s). The International Bachelor Organization, for example, has announced that the related "examinations scheduled between 30 April and 22 May will no longer be held. Students will be awarded either a diploma or a course certificate which reflects their standard of work. The achievement will be based around the students' coursework and the established assessment expertise, rigor, and quality control already built into the programs."[15]

- Extending the admission period for Bachelor's degree programs. Where university admission processes are moved online and extended this year,[16] it is time to recommend on the national level that the admission period for Bachelor's degree programs be extended, depending on the country's situation with respect to the pandemic.
- Making decisions on international student admissions for this year as quickly as the situation permits. Prospective students need to know in advance what to prepare and what are possible scenarios from a menu of options (online admission only, extended admission, with decisions taken as quickly and clearly as possible, etc.).
- Providing support to graduates/school leavers to navigate the uncertainties of the labor market. In terms of graduation, it is critical to provide support to labor market newcomers on the national level, to avoid future negative effects of the COVID-19 pandemic. This support can include specific online career guidance and advice, and national short-employment programs and special labor-market transition arrangements, including those related to the fight against the epidemic.[17]

Issues and potential solutions

Equity

Issues:
The pivot to distance learning due to the pandemic is already having major implications for equity in most ECA countries. For at-risk students, these implications could be academic, social, financial, and physical. Students without access to technology are being left behind, as are students with learning challenges and disabilities. Disparities in access and retention are increasing as students of lower socioeconomic status are constrained by their financial situation. Likewise, as families are impacted by the economic fallout of closed economies, students may be needed to help support their families, placing their studies in jeopardy. Without coordinated institutional guidance, counseling, and support, the most vulnerable students are likely to fall out of tertiary education.

Institutions receiving limited or no government funding, such as private institutions, and those serving a higher percentage of at-risk students, are facing extreme adversity. This was true even before the pandemic, but the present crisis is exacerbating the speed at which disparities are affecting student persistence as well as institutional survival, threatening education's capacity to serve as a "great equalizer."

Potential solutions:
- Communicate with all students, particularly those who are at risk of dropping out, and establish various communication channels in order to be able to reach them on a regular basis. The European Students' Union (ESU) has provided contact details of national student unions that stand ready to help and support all students by answering questions about studies, assessments, exams, credits, mobility

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[15] https://www.ibo.org/news/news-about-the-ib/covid-19-coronavirus-updates/.

[16] Some higher education institutions are considering interim online tests for the GRE (https://www.ets.org/gre), or are extending the admission process (Imperial College Business School), also with a review of applications of international students.

[17] https://www.theguardian.com/world/2020/mar/20/final-year-medical-students-graduate-early-fight-coronavirus-covid-19.

travels, etc.[18] A similar initiative has been taken by Sparqs in Scotland.[19] Another example includes the University of Bremen in Germany, which is using podcasts to address student questions and concerns.

- Create conditions for peer-to-peer student support. For example, Aarhus University in Denmark encouraged students to continue meeting in study groups online through Skype or other platforms. At Brunel University London, the residence student ambassador provides useful tips on Twitter on how to spend the extra time at home in a constructive way and shares her favorite TED Talks. At Dublin City University, the Student Support and Development and DCU Healthy have launched a YouTube video in which they provide tips for students to stay healthy during the crisis.[20]
- Survey students on their capacity to engage in remote learning, for example, with a view to equipment, family responsibilities, home environment, etc., to understand how realistic it is for students to adapt to instructors' plans for delivery and to work with instructors to adapt according to student capacity to partake in distance learning.
- Provide/lend hardware and enable internet access to students without access to technology, where feasible. The University of Bologna in Italy distributed free SIM cards to students without access to the internet.
- Consider establishing dedicated (financial, logistical, pedagogical, psychological) student support programs. Maastricht University has launched a series of webinars explaining the functioning of the Dutch health care system and tackling the issues of anxiety and stress in light of COVID-19. The University of Essex has put a strong focus on the mental well-being of its students by providing a series of mindfulness classes to help reduce stress.
- Consider greater provision of free educational resources for institutions serving disadvantaged postsecondary student populations.

Staffing

Issues:
Due to the COVID-19 pandemic, university staff on precarious contracts have been dismissed by their institutions in an attempt to cut costs (for example, at some UK institutions). In some ECA countries, these include academic and non-academic staff on fixed-term contracts, such as visiting lecturers, researchers, and student affairs professionals. Human resources management measures often include a hiring freeze, as well. In addition to job uncertainty, many university staff lack clear guidance and information on institutional operations and functioning during the pandemic crisis. These staff-related issues are complicating even further the grave situation that most institutions find themselves in, endangering both teaching and research continuity.

Potential solutions:
- Make furlough arrangements that could apply to all staff – including those on precarious contracts.
- Consider suspending staff dismissals at least during the period of the crisis and then review staffing needs. Staff dismissed at this time will find it almost impossible to secure alternative employment amid the crisis and might in some cases be difficult to replace later on.
- Establish protocols for transparent, timely, and consistent communication with staff regarding imminent closure needs and the steps being taken to ensure smooth transitions.
- Establish regular and consistent meeting times with essential staff, to ensure engagement and that the management of the institution is ongoing and evolving according to current circumstances. Also, liaise regularly with key operational staff to monitor and address regular and crisis-related operational challenges at all levels of the organization – academic and administrative departments, facilities, etc.
- Delegate procedural decision making to Faculty Deans and Academic Chairs as early as possible; they know the complexities of their day-to-day operations best and are best positioned to support their staff in adapting and suspending their teaching and research, as needed.

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[18] https://docs.google.com/spreadsheets/d/14F5asjJljLucEeYOULV5mYbt_svhMJYCExDbw_9Mo_0/edit?fbclid=IwAR2-RfF-mJRmsgG9vUbnkCJN_uJtgZqVS3SM2-nUMUXmr4cx0b6MHVjQ3_k#gid=0.
[19] Sparqs = Student Partnerships Quality Scotland; https://www.sparqs.ac.uk/upfiles/sparqs%20COVID-19%20information%2031.03.20.pdf.
[20] https://www.yerun.eu/2020/03/fighting-against-covid-19-young-universities-adapting-to-an-unprecedented-situation/.

- Provide support to allow research fellows and staff to maintain access to networks, materials, technology, and any virtual laboratories and simulators, to provide some level of research continuity.

Internationalization

Issues:
Many aspects of internationalization in the higher education sector in ECA have been and will continue to be severely impacted by the pandemic, most of all regarding inbound and outbound student mobility.

Going forward, study abroad programs in which students participate for a semester or even shorter periods may encounter significant issues, as students assess possible risks and challenges related to such experiences and might face funding difficulties. The curtailing of both short- and long-term international mobility bears additional major implications for prospective students (for example, reduced choice of high-quality tertiary education institutions one can attend) and institutions (for example, loss of tuition revenue), as well as logistical hurdles – for example, repatriating or locally housing international students and staff, as many countries have closed borders and flights have been suspended. However, despite the crisis having a severe negative impact on various aspects of internationalization, international cooperation among countries and higher education institutions is needed as much now as ever.

Potential solutions:
- Make use of crisis response measures provided by the EU. In light of the pandemic, the European Commission has adopted several measures related to the Erasmus + programs: national education agencies have been authorized to invoke the *force majeure* clause in all cases where the application of national limitations affects the implementation of Erasmus+ or European Solidarity Corps projects. Also, deadlines for all planned activities may be postponed by up to 12 months per project.
- Provide flexible pathways and support for students. Higher education institutions – in accordance with the European Commission guidance – need to be "as flexible and pragmatic as possible to help students achieve the outcomes indicated in their learning agreements, regardless of the students' geographical location, for example, through remote studying arrangements with the use of digital tools. This flexibility will in particular help students who have returned to their home countries to finish their courses at their host institution and to have the European Credit Transfer and Accumulation System (ECTS) obtained through remote studying arrangements

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Impact on mobility

A survey conducted by the European Association for International Education (EAIE) reports that more than two-thirds (73 percent) of the respondents indicated that outbound mobility of students had been affected as a result of the COVID-19 outbreak, whereas 43 percent of respondents reported a decline in inbound mobility. Since the data have been collected for this report (late February/early March 2020), the pandemic situation across ECA has worsen considerably. Another more recent report prepared by Erasmus Student Network (ESN) and issued on 9 April, analyzed the impact of COVID-19 on student exchanges in Europe. According to the ESN survey, conducted from 19 March to 30 March 2020:

- A quarter of student mobility periods were canceled.
- Almost 40 percent of students experience problems related to their exchange (such as loss of transportation to return home, accommodation issues, access to basic needs).
- Italian and Asian students have experienced discrimination based on their nationalities.
- While less than 10 percent of the students reported they will receive no grants at all for their studies, and 25 percent of students will keep their grant, partially or fully, the crisis has frustrated the majority of students, and they do not know what will happen to their grants.
- 50 percent of the exchange students have moved to online classes and 34 percent have switched to partial online or partially postponed classes.
- 75 percent of the students whose exchange programs were canceled got support from their home universities, particularly help with course schedules and their academic program.

Source: EAIE, ESN; https://esn.org/covidimpact-report; https://www.eaie.org/our-resources/library/publication/Research-and-trends/Coping-with-COVID-19--International-higher-education-in-Europe.html.

fully recognized."[21] Support cooperation between national agencies and higher education institutions with local Erasmus Student Network sections and national student unions in order to ensure timely information exchange with students on mobility abroad and arrange for peer-to-peer support for students in need. One option could be buddy mentoring programs for international students who feel stranded in the current situation and particularly challenged, to bring them together with local students, thereby providing additional social and psychological support.

- Maintain flexible application deadlines and start dates for prospective and current international students during this uncertain period, as indicated earlier.
- Expand domestic internationalization efforts, ("internationalization at home"), now that student, faculty, and staff mobility has been reduced – focusing institutional efforts on internationalizing the curriculum and co-curriculum to support and expand student global learning.
- Ensure to the extent possible adequate visa-related and other services for international students and staff during these times of uncertainty. To mitigate such issues, some countries (for example, Belarus, Kazakhstan, the Netherlands, Russia, the UK) have introduced a three-month visa extension for international students.

The World Bank's Key Principles for EDTECH in Tertiary Education

✓ **Ask why?** For today's crisis response, the use of EdTech is to support remote learning at home for students during closure of schools due to COVID-19.
✓ **Design for scale:** EdTech interventions must be designed for scale for all students. For most low- and middle-income countries, adopting a *mobile first* approach is critical.
✓ **Empower teachers:** Technology should enhance teachers' capacity and capabilities for teaching and learning. In remote learning, the parent is now also a "teacher," but less so for higher ed.
✓ **Engage the ecosystem:** Universities should consider a multistakeholder approach – engaging actors both inside and outside the university, for example, government, National Research and Education Networks (NRENs), telecom companies, local/global IT companies, publishers, local EdTech startups.
✓ **Be data-driven:** Set up feedback mechanisms to be able to collect, analyze, and respond to feedback, and provide appropriate Quality Assurance.

Infrastructure

Issues:
A rapid assessment of the experiences of COVID-19 disruption to tertiary education in ECA exposed many significant challenges facing tertiary education systems and institutions, including demand for improved utilities and national infrastructure to support continued distance and blended learning models. Several ECA countries (for example, Kyrgyzstan, Tajikistan) are hampered by poor internet connection. Even some advanced European countries find themselves constrained by a technical "debt" – the use of outdated learning management systems and technology platforms. In contrast, a number of countries and institutions have been able to transform their operations online relatively quickly, primarily because they have been making investments in digital connectivity for decades. However, research and innovation are experiencing difficulties, as well, and require attention.

Better coordination and guidance at a national level, as well as sharing experiences and information among the ECA countries, would contribute to more efficient responses to infrastructure challenges faced by higher education institutions. An open letter by the members of the European Parliament has been sent to the European Commission stating that "[t]he European Union and member states need an EU created, funded and driven educational platform for European schools and universities. While some educational establishments can appeal to available tools, a vast majority of schools and universities do not have access to an infrastructure ensuring quality educational solutions on a permanent basis. This makes the e-learning environment unequal both at European level as well as at national level."[22]

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[21] https://ec.europa.eu/programmes/erasmus-plus/resources/documents/coronavirus-essential-practical-advice-erasmus-and-european-solidarity-corps_en.
[22] https://www.esu-online.org/wp-content/uploads/2020/04/Open-Letter-to-the-EU-Commission-and-the-Member-States-demanding-a-clear-action-regarding-access-to-education-particularly-e-learning-in-the-context-of-the-COVID-19-crisis.pdf.

Potential solutions:

- Encourage ministries and institutions to find collaborative solutions, including for infrastructure issues. As part of Croatia's Presidency of the Council of the EU, the Croatian Minister for Education and Science rounded up fellow EU ministers for a web conference to discuss, among other topics, best ways for universities to continue providing courses online.[23]
- Conduct rapid technology assessment (if not done yet) – how great is the technical "debt" and what would it take to sustain continued teaching and learning (including infrastructure/equipment, connectivity, etc.)?
- Identify weaknesses in infrastructure – including power and broadband – and equipment to strengthen when possible or work around when not (for example, through providing access to hotspots, tablets, etc.).
- Engage financial management and procurement teams as early as possible, to understand the opportunities and constraints related to purchasing of technology, licensing, and hardware and software for students and academic staff, etc.
- Assess and plan for security issues related to empty buildings filled with expensive technology and laboratories.
- Strategically allocate funding dedicated to expanding and updating technological infrastructure for digital pedagogy and adequate training of faculty members.
- Apply the most widely used and existing technology and resources available. An example of such resource is a fiber-optic infrastructure known as National Research and Education Networks (NRENs). NRENs are particularly important as mediators between higher education and the market and have increased services offered beyond connectivity, providing digital libraries, subsidized or free software, cloud services (for example, video conferencing or storage), capacity building, and learning management solutions.[24]
- Finally, consider the opportunities and risks of working with specific providers.

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[23] https://eu2020.hr/Home/OneNews?id=211.

[24] The most well-known NREN system is Eduroam, which allows students and faculty to connect to Wi-Fi, anywhere in the world. Another key service is EduGAIN, which is an identity and access management system. This allows higher education institutions to provide users with credentials that can, in turn, be used to seamlessly access any services being provided online. Within the COVID-19 crisis, a community of NRENs has launched a new initiative called Up2U, which is a bundling of several open-source systems, including Moodle LMS, cloud storage (CERNBox), video-conferencing solution (EduMEET), and online notebook (SWAN).

Financing (institutional financing and student financial aid)

Issues:
As is evident by now, national economies in ECA will take a massive hit as a result of the pandemic.[25] Government expenditures will be needed to stabilize economies during and after the crisis, which will likely lead to a shrinking of future public allocations for higher education. The segmentation and differentiation of higher education institutions will become even more apparent, as poorly funded institutions – in many countries, those are primarily private institutions depending almost entirely on tuition fees – will suffer the greatest losses. In addition, both public and private institutions in lower-income countries are likely to suffer more and take longer to recover.

The financial impact of the crisis will be felt by students, as well, especially by those receiving traditional mortgage-style (non-income-contingent) student loans. Nontraditional, part-time, and working students, as well as students of lower socioeconomic status, are also likely to face significant financial challenges, which could translate into a decline in access, retention, and degree attainment. To mitigate the financial effects of the crisis on students, some countries suspended student loan payments and interest accrual.

> **"Vultures and Angels"**
>
> The abrupt, broad-based transition to online education provoked by the pandemic has been a boon for education technology companies, a few of which have shamelessly taken advantage of the crisis to boost their prices or dump flawed products on the market. Fortunately, these companies appear to be a small minority. Many firms, from the education sector and beyond, have shown boundless generosity in support of the thousands of institutions and millions of students left stranded by the pandemic.
>
> Academics and students all over the world now have access to free courses in many languages. They can use digital platforms for virtual meetings and videoconferences. They can benefit from free, online tutoring programs. And they can use virtual labs for simulations and experiments. Some telecom companies have offered free or highly subsidized internet packages to students and academics and have exempted sites that contain open educational resources from data charges.
>
> *Source*: Medium.com; https://medium.com/todays-students-tomorrow-s-talent/readying-for-the-future-covid-19-higher-ed-and-fairness-f7eeb814c0b8.

Potential solutions (institutional financing):
- Begin discussions immediately and continually with relevant ministries on likely budget impacts for the next 3, 6, and 12 months and into the long-term future – including related to tuition levels to charge and expected income from government and nongovernmental sources to support operations.
- Establish operational budgets accordingly – notifying staff of related potential program closures as soon as reasonable for transparency and to maintain trust.
- Engage financial management and procurement teams as early as possible, to understand the opportunities and constraints related to purchasing of technology, licensing, hardware and software for students and academic staff, etc.
- Consider/seek opportunities for diversification of financing sources, including EU funding resources where available, private sector partners, foundations, multilaterals, and international organizations.
- Consider network implications – closures/mergers of institutions are particularly likely to be acute among tuition-dependent private, small institutions.

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[25] See, for example, Scotland; https://www.thetimes.co.uk/edition/scotland/coronavirus-universities-facing-a-500m-shortfall-as-pandemic-costs-mount-mh6qsbhch.

- Adapt and possibly simplify the paperwork for research projects to keep funding activities functioning. For instance, the German Research Foundation (DFG), has eased reporting and similar obligations for research projects,[26] provided some flexibility with regard to the stipends for mobility,[27] and shifted the deadlines for some applications.[28]

Potential solutions (student financial aid):
- Assess adequacy of provision of financial and material support for needy students. To tackle this issue, the European Student Union (ESU) called for an immediate extension in the payment of the student grant instalments.[29] In Finland, for example, state student aid will be disbursed even if studies do not progress at a regular pace during the pandemic. The period of support per degree may be extended, as well. In case of prolonged crisis, students will be eligible to receive income support to complete their studies. Finally, the Finnish Ministry of Education is planning to assess the effects of the crisis on the adequacy of the student support and, if necessary, prepare amendments of the Student Aid Act.[30] In Germany, students who depend on academic achievements according to the Federal Education Promotion Act (BAföG) will not suffer financially if courses at their institutions are temporarily canceled due to the pandemic, or if the start of the next semester is postponed. In France, substantial support has been provided to students,[31] including financial and food aid. The Romanian government is providing EUR 200 to students from disadvantaged families (both pre-university and higher education) to buy computers/tablets.[32]
- Consider deferring/suspending tuition payments (see, for example, Armenia)[33] for vulnerable student populations. In Italy, the University of Bologna extended deadlines for students to pay tuition fees.
- Consider suspending student loan payments and interest accrual, following examples of some non-ECA countries, like the United States.

COVID-19 affects all aspects of university operations: Testimony from Northern Europe

In terms of infrastructure, we have faced some headwind as regards security. Aarhus University has responded, working with our vendors to double-check their compliance with GDPR [General Data Protection Regulation] and reviewing data-handling agreements. The Danish government has informed us that hacking has become an increasingly pertinent issue in these times of crisis.

Regarding student financial aid, the Danish government has done two things. Firstly, the government has increased the monthly student loan amount for students to finance their subsistence despite losing their student jobs. These loans come on top of monthly stipends from the government. Secondly, the COVID-19 situation will likely mean that some students encounter delays in their studies. Therefore, the Danish government plans to extend the number of months that students are eligible to receive grants from the government. The objective of both measures is to safeguard equitable access to higher education in times of the health emergency.

On quality, Aarhus University has begun discussions on how we will run our institutional quality system (foundation for our 2018 institutional accreditation) despite the physical lockdown of our campus. We have not settled yet but will likely undertake annual program reviews in online meetings in a lighter format than normal. Hence, educators and reviewers will meet online and base their discussions on compiled evidence and indicator maps. We are also taking steps to quality assure the specific situation that we are in, for example, collect evidence on how students and staff alike experience learning and teaching online in new formats. To this end, we are in the process of developing survey questions that will be sent to students by the end of the spring 2020 semester.

Source: Authors' exchange with Kristian Thorn, Director of Education, Aarhus University, Denmark.

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[26] https://www.dfg.de/download/pdf/presse/download/20200318_schreiben_an_alle_gefoerderten.pdf.

[27] https://www.dfg.de/download/pdf/presse/download/anschreiben-corona_massnahmen_stipendien_fellows.pdf.

[28] https://www.dfg.de/foerderung/info_wissenschaft/index.jsp.

[29] https://www.esu-online.org/?news=7144.

[30] https://minedu.fi/artikkeli/-/asset_publisher/valtioneuvoston-linjaus-suosituksista-varhaiskasvatuksen-esiopetuksen-perusopetuksen-lukio-ja-ammatillisen-koulutuksen-korkeakoulutuksen-vapaan-sivist?_101_INSTANCE_vnXMrwrx9pG9_languageId=en_US.

[31] https://www.etudiant.gouv.fr/cid150432/covid-19-%7C-faq-crous-studies-services.html.

[32] http://legislatie.just.ro/Public/DetaliiDocument/224536.

[33] https://ru.armeniasputnik.am/society/20200321/22471921/Erevanskiy-meditsinskiy-universitet-predostavit-studentam-otsrochku-oplaty-za-obuchenie.html.

- Consider extension of rent payments or setting up hardship funds.

Quality Assurance

Issues:

Given the urgent need of higher education institutions to move toward online tertiary education, one of the main challenges for university leaders in most ECA countries is the weakness of quality assurance of such educational delivery. This issue is exacerbated by a general distrust in the quality of remote learning, accompanied with the fact that the regulatory environment is not yet sufficiently aligned with online learning. If there is a will to adapt and add flexibility to their practices, however, national quality assurance agencies can play an important role in offering guidance and support to institutions on matters such as the transfer to online learning and teaching, alternative assessment methods, and maintaining academic standards and student support services. The European Association for Quality Assurance in Higher Education (ENQA), which reviews agencies as part of the membership process, informed review applicants of its willingness to "adapt the timelines where necessary, particularly in relation to the postponement of site visits due to international travel restrictions and quarantine measures. We will continue to offer flexibility to agencies in this regard." The European Quality Assurance Register (EQAR) provided the same advice.[34]

Guidance on quality assurance

The UK Quality Assurance Agency for Higher Education (QAA) has issued a series of guidance reports to support the higher education sector in its response to the COVID-19 challenge in four areas:

- Securing academic standards and supporting student achievement. The guide includes key information on exams and assessments in the current environment; communication and consultation with students; approaches to grading; credit volume and progression; degree algorithms; the use of externals; whether certificates or transcripts should be marked to indicate the special circumstances of this year; and advice on re-sits and appeals.
- Practice and lab-based assessment. The guide includes advice for the creative arts, music and performance, as well as laboratory and simulated clinical environments, and proposes alternative modes of assessment and student support.
- Accelerated degrees. The guide focuses on alternative assessments, progression, learning outcomes, student deferrals, and delays.
- Work-based learning (including placements / partnerships / apprenticeships / study abroad). The guide provides advice on professional and optional placements, study and work placements abroad, apprenticeships, and partnership working.

Source: QAA COVID-19: Thematic Guidance; https://www.qaa.ac.uk/docs/qaa/guidance/covid-19-thematic-guidance-practice-lab-based-assessment.pdf?sfvrsn=f3cccd81_6.

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[34] https://www.eqar.eu/covid-19/.

In the same vein, ENQA advised its members "to show flexibility in their own review processes, adapt their current activities where necessary and seek ways to support higher education institutions, which are facing an unprecedented disruption to their normal operations."[35]

Potential solutions:
- Seek suspension of compliance deadlines for quality assurance requirements of existing programs, including accreditation and re-accreditation requirements (for example, Russia for 2020).
- Adapt quality assurance regulations for a more flexible approach for online and blended delivery of academic programs.
- Set up feedback mechanisms to collect and analyze data on course results and student responses, providing appropriate quality assurance related to education technology and online delivery.

Outlook

Over the past few weeks, countries and individuals, as well as tertiary education institutions, had to pause, reconsider, and revamp their activities in the light of COVID-19. Much of the initial discussion has focused on infrastructure for online teaching and learning and connectivity.

However, countries and institutions should consider not only making short-term adjustments in terms of accessibility, infrastructure, and equipment, but also drawing the right conclusions for the medium to long term. This applies not only to modalities for teaching and learning, where a stronger emphasis on blended learning and more and better opportunities for online learning will be a desirable result, but also a stronger emphasis on continuity of operations, student support, and welfare, including preparing for any possible *future* crises. Besides the broad challenges it poses, the COVID-19 crisis might retrospectively be considered as an opportunity to strategically revamp systems and prepare for the challenges to come. As two higher-education experts recently wrote:

> *Institutions would be well advised not to consider the COVID-19 pandemic as a once-in-a-lifetime crisis whose effects will disappear in a few months. Most colleges and universities failed to heed the lessons of the SARS epidemic. Hopefully, this crisis will serve as a wake-up call to reassess the vulnerabilities of the higher education sector and the challenges of living in a global and interdependent world. If anything, it has shown the importance of contingency planning and risk management, the benefits of supporting innovative delivery methods, and the need for flexibility in learning assessment and admissions requirements.* [36]

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[35] https://enqa.eu/index.php/enqa-statement-on-covid-19-pandemic/.
[36] "Readying for the Future: COVID-19, Higher Ed, and Fairness," by Courtney Brown, PhD, vice president for strategic impact at Lumina Foundation; and Jamil Salmi, PhD, an expert in global higher education and former World Bank tertiary education coordinator. *Medium.com*, April 8, 2020; https://medium.com/todays-students-tomorrow-s-talent/readying-for-the-future-covid-19-higher-ed-and-fairness-f7eeb814c0b8.

Right now, countries and institutions are under stress. The social and economic fallout of the crisis will become more and more visible in the weeks and months to come and will likely result in some short-sighted, reactionary decisions. However, structures destroyed, staff laid off, and students not taken care of, might be lost forever. Protecting a sector which is crucial not only for social cohesion and regional development but also for competitiveness and innovation and the productive and sustainable growth of societies is the task at hand. This issue can only be addressed in a collaborative way, through cooperation among individuals, institutions, and countries. In this, as in so many other ways, the COVID-19 pandemic might expose the challenges and potential solutions to the problems we will see in the future.

On 13 March 2020, the Government of Estonia declared a state of emergency[37] in the country and introduced a set of measures (effective until 1 May) to fight coronavirus spread. The following actions and principles were established for education:

- All educational institutions were closed.
- Research and development activities would continue at universities and research institutions.
- Education institutions serving students with special needs would be handled separately.
- Local governments or other kindergarten operators would make decisions about the operation and organization of kindergartens and daycare centers. The situation of students with special needs and of closed educational institutions is to be approached individually, and decisions on the organization of studies are to be made in cooperation among the school, the schoolmaster, and the parents.
- Extracurricular activities were canceled.

Teaching and learning have been entirely moved online in Estonia. It was quite a smooth process for the country, given that since 2015 Estonia has been investing in developing a digital learning environment and e-study materials, accessible to a broader audience.[38] Those investments in the infrastructure and ecosystem helped enable a very quick switch to remote learning during the first days of the crisis. So, studies were not canceled in March but were organized from a distance. For most people in Estonia, it was an extension of a way of learning they had already been practicing for years.

The following solutions have facilitated the transition to digital e-learning:
- Investment in internet connections and devices for teachers, supporting the creation of digital learning materials and advancement of teachers' digital skills.
- Advancement of teachers' networks for sharing good practices. In the first week of remote learning, the Information Technology Foundation for Education (HITSA)[39] collaborated with education technologists and counsellors to hold webinars for parents, teachers, and school leaders.[40]
- Developing the freeware environment Moodle for creating e-learning courses.
- Providing ongoing support to teachers, parents, and principals through the information line opened by HITSA and the Facebook groups created especially for supporting technology-based remote learning.

When the COVID-19 pandemic broke out, Estonia, number 1 in Europe for digital learning,[41] shared all its online education tools to support other countries' education systems during the crisis. The list[42] includes tools for preschools, general education, and higher education.

The higher education institutions were also fast to adapt. For example, the University of Tartu switched to distance learning in just one day, mainly thanks to already existing experience and infrastructure.[43]

The final examinations for upper-secondary schools have been postponed. The exams will not start earlier than two weeks after the start of the regular schoolwork. If, by May 15, the students are allowed to return to school, state examinations will take place at the end of May and at the beginning of June, following the rules in place at that time. In that case, the results of the state examinations will be published on June 30.[44] The exams could be arranged as distance examinations or done in such a way that no more than 10 people gather in one room at a time, and students are dispersed in different rooms of the school building.

[37] https://news.err.ee/1063224/estonian-government-declares-emergency-situation-against-coronavirus.
[38] https://www.hm.ee/en/news/minister-ligi-all-school-studies-digital-2020.
[39] https://www.hitsa.ee/en.
[40] https://www.hitsa.ee/about-us/news/hitsa-is-providing-schools-with-guidance.
[41] https://www.hitsa.ee/about-us/news/estonia-no-1-for-digital-learning.
[42] https://education-nation.99math.com/.
[43] https://e-estonia.com/covid-19-is-likely-to-change-the-future-of-learning-in-estonia-this-is-old-news/.
[44] https://www.kriis.ee/en/education-and-distance-learning.

The conditions of admission to an upper-secondary school, vocational educational institution, or tertiary educational institution are determined by each educational institution and will depend on the evolution of the pandemic. Many universities are prepared to be flexible.

On 12 March 2020, when 811[45] cases of COVID-19 were confirmed, the Government of Norway introduced several drastic measures to prevent the spread of the virus, which included[46]:

- Closing kindergartens, primary schools, secondary schools, high school, universities and colleges, and other educational institutions. However, some school and daycare facilities for certain groups (for example, children of parents who work in the health and care service, financial services, security of supply, defense, and others) stayed opened to maintain critical social functions.
- Closing and banning various events and organized sports activities, both indoors and outdoors, and hospitality industry businesses; however, retail trade and public transport remained open.
- Prohibition of travel abroad for health professionals working in patient care.
- A 14-day quarantine when entering Norway, and, since 15 March, for those who travel from the south to the north of the country.[47]
- Restricted access to health institutions.

By 25 March, when 3,180[48] cases were registered in the country, the Norwegian government had introduced a set of measures regarding exams and diplomas.[49] The authorities decided to cancel all written and oral exams in the 10th grade, and all written exams in upper secondary school in spring 2020. Moreover, it was announced that these categories of students would receive a full diploma without an exam. The diploma will say that the exam was canceled.

Although written exams are not being conducted for graduating students this spring, this does not entail any changes to the admission regulations to higher education institutions,[50] according to the Norwegian Universities and Colleges Admission Service (*Samordna opptak*[51]). The usual rules apply to both the score calculation (grades from high school[52]), the quota system, and the qualification requirements for studies that have special admission requirements. The deadlines for admission to vocational schools, universities, and colleges were not changed.

According to instructions from the Norwegian Directorate for Education and Training,[53] teachers should conduct the assessment before the summer, so that all pupils receive grade points. Recommendations on how to conduct assessment have also been collected to guide teachers.[54]

When Norwegian campuses closed, it soon became clear to the authorities that examinations must also be changed to new digital solutions. In this regard, the universities have moved their campuses online and will conduct exams digitally. For example:

- Norwegian University of Science and Technology (NTNU): The form of assessment for many courses has been changed from a written on-campus exam to a take-home exam in the spring of 2020. Guidance for the university staff provides detailed instructions.[55]

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[45] https://www.vg.no/spesial/2020/corona/.

[46] https://www.helsedirektoratet.no/nyheter/helsedirektoratet-har-vedtatt-omfattende-tiltak-for-a-hindre-spredning-av-covid-19.

[47] https://www.euractiv.com/section/coronavirus/short_news/norway-update-covid-19/.

[48] https://www.vg.no/spesial/2020/corona/.

[49] https://www.udir.no/kvalitet-og-kompetanse/sikkerhet-og-beredskap/informasjon-om-koronaviruset/eksamen-2020/.

[50] https://www.samordnaopptak.no/info/om/informasjon-2/index.html.

[51] *Samordna opptak* is a Norwegian government agency responsible for application and admission to all public universities and university colleges in Norway for entry-level degrees, Bachelor's degrees for liberal studies and some professional studies, and certain Master's-level programs in professional studies.

[52] Classwork participation throughout the year accounts for fully 80 percent of a student's report card marks.

[53] The Norwegian Directorate for Education and Training (UDIR) is a Norwegian government agency under the Ministry of Education and Research. The Directorate is responsible for the development of kindergarten, primary, and secondary education, including vocational training. The Norwegian Support System for Special Education (*Statped*) is managed by the Directorate.

[54] https://www.udir.no/laring-og-trivsel/vurdering/sluttvurdering/standpunktvurdering/.

[55] https://innsida.ntnu.no/wiki/-/wiki/English/Home+exam+in+Inspera+Assessment+spring+2020+-+guidance+for+employees.

- Norwegian Business School: All exams will be digital take-home examinations and will be conducted from 15 to 30 June.[56]
- University of Agder: All exams scheduled for the spring semester that can be taken digitally from home will be done in that format.[57] The faculty boards may decide to change the grading system from tiered grading to pass/fail evaluation for some subjects in spring 2020 and in subsequent new or postponed exams.
- University of Oslo: All examinations are being conducted digitally in the 2020 spring semester.[58]

Digital examination is not new to the Norwegian higher education system. For instance, the NTNU has been performing online assessment since 2016,[59] using a cloud-based assessment platform called Inspera.[60] The University of Stavanger is working with the same platform.

Norwegian universities have introduced special assistance for students and staff due to the pandemic. For example, the University of Oslo has used its Digital Teaching Initiative[61] to provide:
- Tools for lectures (on how to make recordings at home and upload to the semester page), meetings and communication (the Zoom platform for video meetings or interactive lectures), and Canvas (for communication between lecturers and students and for submitting papers).
- Solutions for home office, including Remote Desktop, UiO Program Kiosk (for programs use without installing them on a home computer, and access to the home directory and shared spaces), and Webmail.
- Pedagogical advice for professors on how to make teaching digital, and for students on how to maintain a study life when going digital, and creation of a Help Desk for digital services assistance for students and staff.

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[56] https://www.bi.edu/about-bi/coronavirus-outbreak/exams/.
[57] https://www.uia.no/en/about-uia/information-and-guidelines-about-the-coronavirus/provisional-regulation-as-an-addition-to-the-regulation-on-study-programmes-and-examinations-at-the-university-of-agder.
[58] https://www.uio.no/english/about/hse/coronavirus/questions-and-answers-about-the-coronavirus.html.
[59] https://www.inspera.com/blog/ntnus-approach-to-digital-exams.
[60] https://www.inspera.com/.
[61] https://www.uio.no/english/services/it/digital-teaching/.

At a time when classes have to be replaced by an online format, it is important to analyze students' perceptions of a new reality during the COVID-19 crisis, as the learners are at the center of education, according to the *EDUCASE Review*[62] (an open-access digital publication for the higher education IT community). *EDUCASE* has collected and analyzed tweets from U.S. and Canadian students regarding this transition. Their analysis reveals the following.

1. *Students appreciate faculty who remain positive and calm.* Plenty of posts reveal that students appreciate encouragement, support, and positivity—not "disaster plans." This pandemic may be the most uncertain and difficult life situation most students have ever faced, and they may be looking to faculty for some calm in the storm. If faculty feel comfortable, they should share their thoughts and emotions with their students and talk about their personal lives as appropriate, being careful not to overshare or overemphasize their fears and anxieties. Students appreciate – and need – communication.

2. *Students would like faculty to maintain a proper perspective.* Education and learning continuity are important, but students who are fearing for their livelihood, well-being, or health might legitimately have more important things to deal with than a professor's class. Some students have posted about the need to choose between doing what faculty want for class and what they need to do to survive or what they are expected to do by society. For example, if a student is being forcibly evicted, it should be okay for that student to pack while listening to a faculty lecture – or not join the live lecture at all.

3. *Students appreciate faculty who are empathetic, flexible, and have reasonable expectations.* Because everyone's lives have been upended, we cannot know or account for every possible difficulty that students are facing. Faculty should be flexible and accommodating. For example, some students' tweets mentioned that faculty need to recognize that students who went home may now be in different time zones. Holding class at the same time that it was originally held may now be too early or too late for some. Because some students are dealing with health, financial, and life difficulties, it is reasonable to expect that these issues will impact some students' ability to focus on class. Canceling some assignments and/or restructuring them to accommodate students' emerging needs are reasonable ways to apply empathy and flexibility to pedagogy.

4. *Professional behavior norms benefit students as well as faculty.* A number of students' posts mentioned seeing other students lie down and take a nap on-camera or show up shirtless to a webinar. Some students also noted that they could hear faculty yell at their children or pets. Because remote teaching and learning may be a new experience for both faculty and students, faculty should be explicit, but reasonable, about how they expect students to dress, communicate, and behave. Likewise, they themselves should follow those expectations. Just as classrooms need structure, faculty and students need to structure their learning environments while participating in remote educational efforts so that the experience is professional, safe, and not distracting.

5. *Students want faculty to be comfortable with technology.* There are many ways to teach remotely. Faculty should not assume that all teaching must be done via a live lecture. The most common tweets from students involve complaints that professors try to use technology that they clearly have not practiced, lecture for some time before realizing they were muted, show whiteboards upside-down, and do not notice when students tell them that something is wrong. If faculty are going to lecture, one way to avoid these problems is to simply record the lecture and ask students to watch it on their own time. Recording lectures in short five- or ten-minute chunks may provide added flexibility. Or if faculty want students to take notes, why not provide them with the PowerPoint file as a starting point? But most importantly, faculty should practice using technology before incorporating it into their classes.

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[62] "What (Some) Students Are Saying about the Switch to Remote Teaching and Learning," *EDUCASE Review*, 6 April 2020; https://er.educause.edu/blogs/2020/4/what-some-students-are-saying-about-the-switch-to-remote-teaching-and-learning.

6. *Not all students are tech-savvy and connected.* Students wrote a number of self-deprecating posts about recognizing the limits of their own technical expertise. For example, they sometimes need help getting the audio to work, understanding how to unmute themselves, or troubleshooting glitchy Wi-Fi. While faculty may be tempted to assume that students are more tech-savvy than their professors, it is important for faculty to recognize that students have varying degrees of proficiency with technology, that they make mistakes, and that online learning requires digital skills, literacies, and resources (for example, bandwidth) that they may not currently have. Creating equitable learning opportunities is an essential aspect of remote learning, and one way to begin doing this is by recognizing that while some students may be able to quickly figure out how to participate in online environments, others may need more support and assistance.