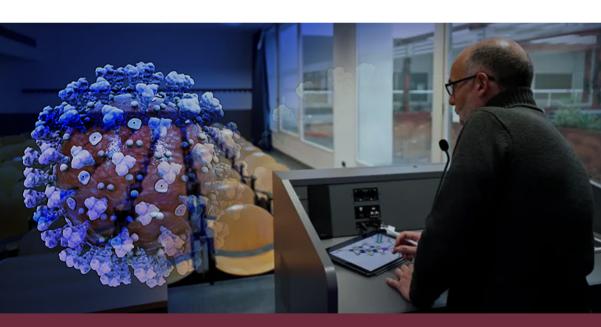# Thinking about Pedagogy in an Unfolding Pandemic

An Independent Report on Approaches to Distance Learning During COVID19 School Closures

Independent Report written to inform the work of Education International and UNESCO

Armand Doucet, Dr. Deborah Netolicky, Koen Timmers and Francis Jim Tuscano
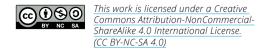
VERSION 2.0 29 March 2020

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EXECUTIVE SUMMARY

1. Planning for education in this pandemic requires three approaches. The first is a stop gap approach to ensure Maslow before Bloom, safety and survival first before formal education, during this first school closure. The second approach will include carefully considered long-term solutions that address the inequities in education that are exposed when schools are not physically accessible. This from all will spark pedagogical innovation towards blended learning in all schools for inclusive and equitable education for all.

2. A multilateral collaborative partnership across sectors is needed when approaching education during a pandemic with institutionalized dialogues that ensure teacher voices as a major part of the solution.

3. This type of school closures has never happened on this scale before. It will require all stakeholders to rethink how education happens during this emergency scenario and, then beyond.

4. Flexibility is key when planning for distance education, context matters. Many factors will shape how a teacher is ultimately able to address the learning needs of the student. The point is to ensure teachers have the resources, skills, support and conditions to teach, and that students have the resources, infrastructure and support to learn.

5. Designing the learning experience for students must be differentiated when possible. It is not just as simple as putting your course online. Teachers need to think and choose how they can incorporate a blended learning approach and which tools will best serve their students and pedagogical practice. They need to consider what is accessible and fit for purpose, as well as ways in which to bring connectivity, relationality and humanity into a distance learning model.

6. Multiple sectors including government agencies, technology professionals, superintendents and teachers need to be in continuous dialogue to determine what is and is not feasible across the policy cycle.

7. Assessing student knowledge presents a unique set of challenges during school closures. Students deserve authentic assessments and timely feedback within reason. Teachers need to use principles of assessment and their professional judgement to rethink the ways in which they generate evidence of student knowledge, understandings and skills.

8. Professional development is required for many teachers who do not use technology in their classrooms. A rapid and consistent response from administrators, 'techies' and colleagues can get teachers, who are unfamiliar with the enormous array of distance education options, confident and prepared to do what they do best.

9. Communication is key throughout school closures. Teachers need to be part of the communication process as they have strong relationships with their students that can be beneficial for students and families. Messaging must be coherent, clear, easily understood and aligned with school and system communication.

10. These are unprecedented times. Trust throughout the educational system, and of teachers, is key to ensure a collective approach on all fronts to mitigate the disruptions of school closures during a pandemic. This is not the time for unilateral, top-down only approach to education. Teachers can and should lead in many ways and use their professional judgement to make the best decisions for their students.

INTRODUCTION

The Coronavirus (COVID-19) outbreak is causing various levels of disruptions in education globally. At this current date (March 29th), UNESCO has 165 countries announcing school closures in an attempt to slow the spread of the disease, impacting over 1.5 billion students. The purpose of these school closures is to try to prevent further transmission of COVID-19 through self-isolation, shielding and social distancing.

This document is to inform practice and policy from the people on the educational frontlines of an unfolding pandemic. We need to address not only the current global school closures, but also the possibility of future stoppages over the next 12 to 18 months due to recurring outbreaks and the future of education. This means that we must have a multilateral approach that is collaborative and integrated to solve the social inequities that impact education. More importantly, we will need to professionally shift pedagogical practice to implement blended learning teaching the whole child instead of teaching for grading and sorting.

This report has been written by amassing, via crowdsourcing, research and discussions, the good practices of teachers around the world in relation to distance (remote) learning and online resources. The teachers, academics and professionals who have answered our call illustrate the ability to collaborate and innovate to find solutions even in a time of crisis.

While schools are closed, we are faced with two profound questions: Should we continue student learning? And if so, how?

As declared by all stakeholders coming out of the World Education 2015 Forum in Incheon, South Korea, hosted by UNESCO, "We all agree that every student has the right to quality, free, public education", which we support as authors of this report. The rights

and ambitions that were expressed outline what we should be striving for in our educational systems. However, during these extreme times, we are putting into context what this means for our students who may have short-term and long-term disruptions in their education. As such, we assert that 'Maslow before Bloom' should be our mission going forward for distance learning in this time. We should also remember the United Nation Sustainable Development Goals 2030 Agenda and not allow this pandemic to steer us from achieving them on time.

There is no precedent to guide us during this COVID-19 pandemic. However, we can innovate and find solutions by taking the best practices of UNHCR's Emergency handbook and distance learning examples from all over the globe to make positive changes in education for all learners. This is the foundation of our 'Maslow before Bloom' approach.

UNHCR's Emergency Handbook gives us a solid starting point to think about the first question. Although the refugee crisis is vastly different, it still has merit as we consider how to approach education when our students are thrust into a vastly different circumstance than the one they have known.

Firstly, UNHCR's education in emergencies protocol provides immediate physical and psychosocial protection (normalcy by schooling, schedule, procedures etc.).

Secondly, a safe and quality education during and after an emergency, which we recommend following the work done by The Inter-Agency Network for Education in Emergency (INEE), means that they will be exposed less frequently to activities that put them at risk. We must also think about many communities where social distancing will not be happening, where the risks of being out of school include a rise in drug usage, mental health issues, exposure to abusive parents, domestic abuse, child marriages, child labor, sex exploitation, militia recruitment and many more. With every passing day, we are losing more children who will never come back to school.

Thirdly, education provides a sense of continuity when everything else is in flux, and it provides a stable, safe and supervised routine

that is attentive to their academic and psychosocial needs which will benefit all our communities and countries in the long run.

So, to answer the first question, yes, when it is possible and when we as teachers have a say in the way it happens, we should offer some form of distance learning for our students. The reality is we will be doing agile learning from a distance. But, for the purpose of this report we will call it distance learning

VISION FOR EDUCATION DURING AND AFTER COVID-19

UNESCO has put together the Global Education Coalition to search for practical solutions. As per Director General of UNESCO Audrey Azoulay, "The goal is to identify and share the best innovations to keep children learning during the pandemic, and to help lay foundations for more inclusive and equitable approaches to education when the crisis subsides."

We can keep some children learning, but providing an equitable and universally inclusive public education for all is not possible under current condition in many jurisdictions. School closures mean that the infrastructure we have always relied upon to ensure equitable public education such as schools, textbooks, technology at school, teachers, and classrooms is now unavailable to students. Despite the existence of distance education programs, and other online resources the fact is many students will not have reliable access to these because of both structural, and socioeconomic

barriers. Over half of the world's population still has no access to the internet. Political leaders must provide resources and political will to find solutions that address the inequities but also equalize inputs so that the requisite infrastructure is in place when schools reopen.

From a global perspective, teachers, schools and districts will need to collaborate with multiple partners to teach all our kids mitigating the inclusivity and equity issues during this pandemic. This is a short-term fix. In plain English, we have high tech, low tech and no tech solutions depending on the context that is viable during this initial school closure. Some can move forward and were ready to do so when school stopped, but many are not ready to face the inequities and need more time to be able to deliver a diminished version of inclusive education.

What are some of the short-term solutions that we know will suffice? Right now, in this first stoppage, the goal is to get back to schooling with the least amount of learning gaps as possible. We have examples of how to do distance learning in vulnerable areas from years of experience in Latin America, Africa, Asia and remote areas in Canada. These can fill in the gaps for areas that don't have reliable access or can't afford the internet. However, these are not long-term solutions for countries that aspire to have inclusive and equitable education.

Fixing the societal inequities must be a large part of what we try to solve as we pivot to blended learning for long-term success in education. Blended learning refers to instruction that combines online, classroom and face to face education. The fear coming out of this pandemic for all involved in education is that these stop-gap solutions can't be the way forward. Developing a truly blended educational system will require significant investments. However, governments are likely to face pressures to implement austerity programs post pandemic in the face of an impending economic recession, widespread unemployment and a shrinking tax base. But it was austerity that have placed public services under such strain and unpreparedness at this time there is no question that public investment is needed to implement long-term solutions in education.

This short-term fix highlights the needs of education moving forward. We need to take care of societal inequities for teachers to be able to deliver a true blended learning experience for all. This crisis is a horrible opportunity to hit the reset button, change the rules and fix once and for all the inequities that make inclusive education impossible.

So, we should have a vision, plan for, and make decisions during and after this pandemic to emend education.

Generally, education is not set-up to teach the whole child, particularly in higher grades, based of the existing pressures of standardized testing. It is quite clear for those of us who have been working with blended models of education that with the right pedagogy and the right technological tools, we can teach the whole child. However, for a large part of the world, these technological tools are not feasible or realistic at this time so laying that foundation is key for coming out of this crisis stronger.

Crises drive innovations. In education, the tools do exist and teachers could be able to pivot to a blended model with the proper professional development. The pivot from in-school classroom teaching and learning to entirely distance modes of education is happening right now as necessitated by the COVID-19 crisis. The forced closure of schools has meant that education reform—including online and remote models, and the cancelling of standardised testing and examinations—is a result of this crisis, and presents some opportunities for positive change for the future of education. However, innovation will not happen if societal inequity issues are not addressed. We are seeing that the capacity for innovation in education is limited by wealth and access; those who have privilege, technologies, devices and safe homes are advantaged. What we need now are innovations that give educators the platform to enhance learning for a truly inclusive and equitable education for all.

MASLOW BEFORE BLOOM

As we mentioned above 'Maslow before Bloom' is the key in approaching distance learning during this pandemic and is at the center of the vision we have of teaching the whole child. At the onset of an emergency situation, formal education is not the priority. Children at home do need an education, but first and foremost, they need to be fed and protected. The priority is for governments to implement their emergency plans which, for most countries include social distancing to try to flatten the curve, support the economy and ensure that essential services are delivered.

Teaching and learning during a pandemic are of importance, but health, safety and wellbeing must come first at all times, and schools and teachers must operate with an understanding of the complexities of home lives and or the mental, emotional and physical strain their communities are facing.

Students

"School closure affects the poorest children most of all - but research shows we can limit the impact" says Becky Francis, CEO Education Endowment Foundation and former Dean of Education at UCL. (Francis, Becky. 2020)

The school is the service hub of many communities connecting students to services and basic needs that they require day to day. They can include providing laundry services, showers, free warm meals, mental health counselling, physiotherapy, occupational therapy, addiction services, sexual health nurse and the list goes on.

Furthermore, it is also the social hub. This is where many students have their only positive interactions of the day, sometimes life saving interactions. Teachers deal with students

in crises and create safe spaces for students who don't have one at home. They are empowered to lead their authentic lives. This physical distancing is creating anxiety and stress that can be felt across every age group. It is easier for the older age groups to stay connected with their peers. However, for the younger age groups teachers are finding ways to create online social connections where students can express themselves. We are seeing social media, video conferencing and Learning Management Systems being used to connect students in formal school culture ways such as assemblies and talking circles, but also informally through connecting friends one on one, story time with a teacher or group guidance sessions.

Many students are mourning the loss of the structure of regular schooling, and also the possibilities of more cancellations to come. They look forward to schooling events and traditions that may not come to pass. They need to be heard and talked through these emotions.

We also need to remember why we are physical distancing. This pandemic will result in sudden deaths of family and friends which will directly impact many students. In addition, the natural grieving process is eliminated because of social isolation, the impossibility of being there for the dying, cremation being forced upon families which has religious and cultural implications for some and finally, not being able to gather to mourn.

Furthermore, we have many older students who are front-line essential workers. They are dealing with stress and anxiety of witnessing first hand pandemic panic. We have children who worry about their parents working in hospitals who can't come home because they are at highest risk of contamination. Unfortunately, we also know that abuse and violence increase at times of confinement and stress and must ensure that we are staying conscious of signs and signals.

Taking care of our student's physiological needs, safety and sense of belonging should be our priority as educators.

Parents

Maslow is the priority for parents as well. The school is the conduit through which parents access recommended outside services for their children, and also for their families. Many of their worries can be taken care of by the schools connecting them to the right professionals. In urban areas with multicultural demographics, schools serve as the reservoir of resources for social programs and translation programs. Parents need support before they can support their children.

Some parents are facing sudden tremendous financial hardship. Some are losing their jobs. Some have no health insurance. Some are not able to do social distancing due to high-density housing. And, some are not fluent in the language of public service announcements or their child's instruction. These and many more circumstances could hinder their ability to adequately care for their children during this pandemic.

We need to make sure that the community the school serves stays alive and well, distributes meals and supplies that our most vulnerable students and families might need as well as communicate important information. Once Maslow's hierarchy of needs is taken care of, then teachers can proceed to formal education.

Teachers

Many teachers are parents too. Therefore, Maslow is the priority for teachers as well. If we are to deliver education during this pandemic, we need to acknowledge and plan for disruption in the workforce. If teachers don't take care of themselves, there will be a wave of mental health issues and this will result in disruptions in learning.

Teacher welfare is key. The reality is that teachers will be grieving as well. Also, they will be anxious about the massive changes in their work environment, worried for their students and could possibly be grieving the loss of loved ones. If we don't address

teacher welfare, we are going to have more collateral problems than answers to this crisis.

In terms of capacity and management of expectations, teachers need to be truthful, honest, transparent and clear on what they can and can't deliver. Teachers must manage students', parents' and their own expectations so that they do not become overwhelmed. They must ensure a home work/life balance. This can be achieved in a number of ways. For those teaching online, it would be beneficial to publish the school schedule, office hours for email or video conferencing and a resource hub on the chosen Learning Management System (LMS) so that parents/students understand clearly what is expected.

Once schools have set-up guidelines for distance learning, teachers must design and structure their day to be sustainable. Like everyone else working from home, teachers must prioritize and organize their personal routines.

If we don't make sure our students, parents and teachers are taken care of, Bloom will never happen.

HOW?

Distance Learning Challenges

Assuming parents, students and teachers are ready for distance learning, the question becomes: how should it be delivered? Should online learning be part of the distance learning package? Many elements need to be pondered. Inequities in online learning include access to infrastructure, availability of software, hardware, bandwidth, cost and training of staff to name a few.

Information from International Telecommunications Union (ITU), the UN Agency that tracks and supports the expansion of internet access, states that approximately half of the world's population has access to the internet and in the poorest countries that access is often happening via phone. Inequity can show itself in many ways, like parents needing access to the one device in the house to work remotely, high school students needing to babysit as parents must go to work, some students will have parents who are frontline emergency personnel who will be working overtime. The list goes on. Schools will vary by demographic, existing technology resources and practices.

We tend to think about online learning as the way to do distance learning. However, we might be able to learn from many South American and African countries that have been doing distance learning for many years via television and radio because of the lack of infrastructure in remote areas. A multi-media approach will probably be needed to reach all students in most jurisdictions. Unique ideas such as repurposing school buses with WIFI can work in some settings, but maybe unrealistic in others. That's why television, radio and texting might be the way to help bridge technological gaps. Mailing packages would not be feasible or financially realistic at this time.

Another challenge to think about is that distance education, particularly online learning, may not be appropriate for young students, especially those who have minimal or irregular adult supervision while at home. They may be distracted/worried, lose track of their schedules if not followed well, or may be negatively impacted by limited social interactions or delayed feedback from teachers. Their days may be better spent in nature, cooking, doing chores and in meaningful play.

An additional challenge is the technological culture among teachers and the access of teachers to technology. This issue needs to be raised by decision makers when they think about how to approach distance learning. Professional development will be needed to have teachers be ready to design distance learning for their students and manage the technological component of online learning. As well, most schools will need to create a bridge plan that matches technology experts with teachers who are not comfortable or possess the required capacities.

Educators must concern themselves with protecting their students' privacy and data. Meaningful conversations need to be had with key educational technology stakeholders which follows Education International's Protocol on the Use of Information and Communications Technology in Education. Many of them are now offering their platforms for free. These platforms take millions of dollars to create and we understand that it comes at a great cost to developers to offer the services for free. However, we believe that it would be unethical and unacceptable to use this crisis to data mine those who subscribed and keep information on students, teachers and schools utilizing these tools during a crisis. Protecting students' online privacy will be of paramount importance.

Furthermore, each school context will dictate what and how distance learning can happen for its students. In developed nations, there will likely be a mixture of both centralized and decentralized approaches with departments taking care of some aspects, and teachers taking care of others.

This is not the time to go searching blindly for solutions, time is of the essence. In approaching distance learning, the challenge is

selecting the right tools to do what teachers need for their students at this moment. In some jurisdictions, the context will dictate what approaches will best serve the students. In these cases, teachers will be limited to driving the learning component. This is definitely a short-term fix and not realistic over the long-term if you want to give everyone the same opportunity to educate without widening the equity gap.

For others, a central decision on the technology use should be to help fill the gaps to reach the most vulnerable that wouldn't have access to what the majority has. In a perfect educational world, students are at the centre of the pedagogy a teacher uses and drives the technological tools chosen in each individual classroom to create the blended learning approach personalized to each student.

Lastly, the ability to navigate Learning Management Systems and design physical classes concurrently with virtual classes in a blended learning approach is where we will see long-term success, while still practicing social distancing. As we get through this first stoppage, it will be key to prepare a list of possible LMS that could work for different age groups, let teachers research and test, give professional development to use as well as have the technical support available to keep these systems running. Over the last week, we have seen many issues with systems crashing or being too slow for video conferencing as our infrastructures are taxed to their limits. We will be recommending many ways to approach distance learning.

Considering all these elements, we are in complete agreement with the UNHCR's Emergency Handbook's first phase that "to establish child friendly spaces in association with the refugee community is key and that this space should be inclusive, physically safe, participatory and supportive environment." We should be doing distance learning in some form to give continuity to our students and support them in their learning and health, but as stated, this may not include online learning platforms. Furthermore, context matters greatly in the decisions being made by each jurisdiction, as it should be.

Pedagogical Practice

Going forward we will be discussing distance learning with an online learning component. Learning away from school can be effective and meaningful and take on many forms. It does not need to be only online and in looking at the question of inequity, can't be carried out by just anyone. Many studies detail the dangers of too much screen time for students. Therefore, we need to approach pedagogical choices through a distance learning lens. We also do not want teachers who have not had the opportunity for professional development in this area to think that they must become experts overnight. That is after all why they belong to unions, who among other things, work collectively to make sure governments and employers provide the necessary conditions and environment.

Firstly, there is no one-size-fits-all in distance learning. There is a great variety of subjects with varying needs. Some are easily translated into online or at-home environments. Others, such as those subjects with a large practical component (e.g. Physical Education, the Arts or Home Economics) or that require specialised equipment (such as Woodwork, Media or Science practical's), are not so easily replicated outside of the physical grounds of the school. Different subjects and age groups require different approaches to distance learning.

Distance learning can involve a combination of synchronous (live learning in which students learn with the teacher at the same time) and asynchronous (students learning independently at different times) approaches. Trusting teachers and school leaders must be the starting point. Trusting teachers to plan the appropriate approach for their classes allows them to select how students might best use the home environment and available tools to maintain the continuity of learning during a school closure, with realistic expectations.

We suggest a mixture of both synchronous and asynchronous learning for distance learning. However, this mix will depend on what type of distance learning you can do. If you have the ability

to do online learning with your students, you can easily do a mix. But if you are doing distance learning via radio or television this will not be the case. You might find yourself teaching to a class of students with diverse technological capacities which will influence the percentage of synchronous and asynchronous learning. A synchronous approach has communication happening in real time allowing for instant feedback and clarification (such as through live video conferencing). An asynchronous approach is done without live communication (emails, flipgrid, blog posts, pre-recorded flipped lessons, etc.), usually chosen when students work at their own pace which is more flexible.

An asynchronous approach can be done with the older grades for many subjects. They are closer to being or already are independent learners. The synchronous part of their day could be for a quick mini-lesson or assemblies/town halls to stay connected with their peers. Once moving to distance learning, it will be key to keep them connected and give them a space to express themselves in real time with their peers online. The asynchronous opportunities can allow for a humanising of the distance learning experience, such as seeing the faces and hearing the voices of teachers and peers. (Please see collaboration tools).

Distance learning doesn't have to mirror learning as it normally does in school. In fact, trying to replicate the pace and type of work that would be done at school is unrealistic. A school approach must be taken to decide on the daily structure, timetable or to-do list that the staff wants for its students. This will evolve as teachers see what works and doesn't for students and parents, especially the pace at which they get work done. Importantly, less is more when it comes to the scope of work teachers are setting in distance learning environments, especially in times of uncertainty and instability. For teacher workloads, student capacity and parent wellbeing, teachers need to pare back what they set and expect to the essentials. This is not a time for busy work or encouraging long days at a computer or a desk.

As this pandemic evolves, teachers will need to be flexible. A stop in schooling for two weeks is vastly different than no school for

many months. During this pandemic, as well as being reflective practitioners and reinventing best practices, what will be important is having consistent messaging that adapts to the circumstances as they unfold. This will help our students, parents, teachers, staff and communities maintain hope, while at the same time staying dedicated to physical distancing and maintaining resilience and social connection in the face of uncertainty.

Teacher Input

Teacher voice is a critical element in any successful approach. Firstly, the teachers know their students and have been with them as the approach to school closure unfolded, receiving the interpretation of students digesting and analysing of their newsfeed as well as how they are doing from a social-emotional and mental health perspective. Also, only the teachers actually know where the students were when COVID19 stopped the educational system. In plain English, they know their students.

Teachers will know their students' capacities for technologies and are able to best design the learning experiences that harness those tools with which students are familiar and make most sense for their learning. Context here will be key. Systems, districts and schools differ with what technological tools they use. It could be the same across the system or vary by classes in the same school. Teachers need to be trusted and empowered to deploy appropriate delivery of the distance learning, utilising tools that are fit for purpose and relevant to the subject, content and skills being learned, as well as to the age and stage of students. This is one of the major constraints of central solutions to this crisis by television, radio or even online central courses via one main teacher. Learning will happen, but it might not be what the students need. Teachers personalize the curriculum to the students and teach it in the sequence that makes sense for them. Take two similar classes, they will get to the same destination but it can be via different routes.

While listening to teachers is key, we also do not want to overwhelm students with inappropriate workload and expectations as teachers

also feel the pressures of meeting curriculum learning outcomes. As mentioned, distance learning can involve a combination of synchronous and asynchronous learning. Identical timetables can be one way to go, but could lead to giving lessons in didactic, one-dimensional ways with students staring at screens all day.

A UNIFIED APPROACH TO DISTANCE LEARNING IN DIFFERENT CONTEXTS

A unified approach to the online component and expectations is a necessity putting the student in the center. As stated, we do not want our students staring at screens all day. So, how do you get a unified approach to distance learning during a pandemic?

Communication Strategy

Having a clear communication emergency structure should be the first element. The priority is clear and concise communication when closing schools and moving to distance learning, this should be done by department or districts. Many jurisdictions have set-up their own platforms such as this UNESCO repository demonstrates, https://en.unesco.org/themes/education-emergencies/coronavirus-school-closures/nationalresponses .

This communication needs to become a education continuity action

plan, particularly in an emergency pandemic. The school becomes the center of communication for the whole community in many ways sharing the plan, ensuring everyone is getting the information, but also getting ready to meet the basic needs of their most vulnerable students and families. Schools can connect families to the right social services and government agencies in a time of crisis alleviating stress and anxiety.

Once formal education in distance learning is started-up again after the first wave in the emergency phase, this is when teachers communicate with their students via LMS, texting, WhatsApp or any other tool they have put into place for their students. If the distance learning will be done by television, radio or packages this communication might be done to check-up on work or provide clarification.

School Timetable

The second element is having clear expectations for the whole school, while being understanding and flexible for students that aren't capable of meeting those expectations during the pandemic. Setting up the guidelines for how teachers are going to teach and then listening to feedback from students, parents and staff is key to improvement.

As an example, for a high school, the school day could be structured as follows:

Period 1	08:30 - 09:00
Period 2	09:00 - 09:30
Period 3	09:30 - 10:00
Period 4	10:30 - 11:00
Period 5	11:00 - 11:30

This example reduces each class to thirty minutes in the morning for online synchronous learning with tasks for asynchronous learning as well as "office hours" in the afternoon. Teachers could have a to-do list or help students to plan for their day/week with

short one-on-one conferences or templates sent home. Flexibility is key with any of these timetables because maybe only 80% of their students will be able to follow this suggestion. For the other 20% you will have to have alternative strategies in place, almost like individualized learning plans. Giving students choices over how to approach their daily tasks, demonstrate their learning and communicate it is important once the daily structure and methods to communicate have been chosen.

An example for elementary students (who often have the same teacher throughout the day apart from specialties), would be to check-in on-line, get the checklist for the day and get-off within a 30 minutes period. Teachers can stay in touch with parents and students through varying means such as using LMS, texting, Apps, emails and phone calls.

Educators and administrators must be empathetic. They must assign a reasonable workload, encourage a balance between online and offline learning, encourage connecting with one another and understand that they have other classes, other responsibilities and worries. Educators must try to be a steady source of support and challenge without overwhelming them with their learning.

The method of communication must be one that is comfortable and familiar for students and their parents. It could be by simple email, texting or phone call. You could also have a Sunday night check-in on television or radio with the plan for the week. It will really depend on your context.

Quick tips for reaching a unified approach in your schools:

- **Do your best with what you know and can do.** This isn't like 'normal' school and it isn't going to mirror 'teaching as usual'. Students will struggle with technology and motivation, as teachers might. Have a plan to help teachers get through the initial start to the online component to distance learning.

- **Collaborate.** This needs to be a unified approach from how you will 'do school' in this new environment. Classrooms will differ, but the procedures and principles should be shared.

- **Keep it simple. Less is more.** Start with the learning intentions and find efficiencies. Not every lesson needs to be video, live, technology-based or amazing. Allow for space in the day for students and teachers to move and to be.

- **Trust your professional judgement.** Teachers know yourselves, your subject and your students. Do what works.

- **Seek feedback:** What is working for staff, what is working for students, what is working for parents. It's important to get feedback from all key stakeholders, listen and pivot when needed to keep the engagement high, take care of the whole child and make it workable for all parties involved.

- **Be kind to yourself and others.** This is distance learning during a global pandemic. It is continuing students' education while in the midst of a major health, societal and economic crisis. There will be a multiplicity of very real challenges for students, teachers and parents during this time. Everyone should give themselves permission to accept what they feel capable of during this time.

ASSESSMENT IN A TIME OF PANDEMIC

As schools and education institutions worldwide transition to distance learning in varying paces and degrees of success, teachers and school leaders slowly discover and experience the differences between face-to-face instruction and online learning in aspects such as learner interaction, engagement, motivation, and most especially, assessment of student learning.

Remember, we are in a health crisis, test and assessment will not matter when people around you are dying and fighting this disease. It's important to be constantly aware of what is happening and be realistic in your expectations.

Big Ideas on Assessments

For school leaders and administrators, a rapid transition to online distance learning can possibly lead to negative feelings or attitude towards the new mode of instruction delivery. Teachers can feel overwhelmed, lost, and exhausted even before the first week of online learning starts. Preparation time should be given to teachers so that they have enough time to design online learning modules, curate and create online instructional materials, design and strategically embed constructive formative assessment and feedback.

Schools and districts should exercise careful consideration for students who have problems or challenges with access to reliable and stable internet connection. These students should be prioritized for accommodation. For example, right when the pandemic started to force lockdowns on cities and countries, some schools decided to loan laptops, tablets, and portable Internet devices for students who lack access to tech tools needed for online learning. For schools and districts that lack enough funding, teachers were given enough time to design distance learning modules that make use of printed books, worksheets, and non-digital instructional materials. When summative assessments hurt student's grade or performance due to inequitable access, school leaders and teachers can practice flexibility and focus on formative assessments or feedback as opportunities of learning by themselves.

Teachers should always remember to design assessments that are developmentally appropriate for their students. Hence, an authentic summative assessment for senior high school students should not look similar to that of a primary student. It is always recommended for teachers to expose students to the specific

online tool that will be used for an assessment and give students the time to practice how to use it. Support should always be ready for students.

In the end, at this point of the pandemic, school leaders and teachers are called to practice and demonstrate empathy so that the planned online learning experiences and assessments become meaningful and relevant for the students who are trying their best to manage the anxiety that they feel about the pandemic and the excitement to continue learning from home. Parents and homes are sources of contextual and local knowledge that can be utilize when teachers are designing the learning experiences for each child. One of the many reasons why strong relationships and communication between teacher and parents is key in children learning. Parents have a wealth of knowledge and experiences that can bring to life any learning and are key part of the learning community.

Teachers on Assessment

In a survey to teachers who are currently in online distance learning mode and have deployed assessments, teachers have noted several issues and challenges. First, the quizzes that have been designed for classroom tests have become unreliable because students at home had access to notes and information via the internet. The observed unreliability also stemmed from the fact that the test also included items that were dependent on the lower tiers of the Bloom's Taxonomy. Moreover, adult supervision comes into play as teachers now grapple with the presence of parents or adults who can help or assist the students in answering the tests or assessments at home. Teachers are forced to reflect and decide on what is the acceptable level of parent or guardian involvement so that the students are still able to independently demonstrate mastery of learning.

Second, teachers found it more difficult and challenging to track student progress when they moved to online classes. For more developed nations, the number of students per class averages at

around 20-30 students, which enables the teacher to give better feedback to student's learning. However, for nations whose average class number goes beyond 40 and sometimes 100 students, high-quality feedback-giving and tracking of student progress online becomes a highly-challenging task. The teachers have recognized that online apps or web-based tools helped alleviate this challenge, but they still face the usual challenge of having enough time to send out formative feedback to all their students.

Third, teachers also faced the issue of inequitable access to proper and adequate technical infrastructure that will support student's online learning at home. Equitable access to an Internet-capable device or to the Internet remains to be a top problem among students. Teachers also observed that students were not well equipped with the needed technical skills. They admitted that some of their students were not introduced to web-based learning prior to their transition to online distance learning. Hence, students found it difficult to navigate and adjust to the online mode of assessment. While the needed skills can be learned and developed overtime, teachers observed that inadequate technical readiness hindered some students to focus on answering the work at hand.

Last, teachers were challenged to reflect on the most authentic kind of assessment that would allow their students to demonstrate mastery of learning while in an online learning mode. Teachers who teach courses that have been very hard to move into an online learning environment faced this specific challenge. Examples of courses that have been very difficult to move online include theater and technical-vocational courses. Teachers who teach highly content-focused subjects such as Social Studies needed more time to re-think the way of assessing mastery of learning that still balances integrity and quality. For some teachers, the issue also boils down into one important thing-enough time to re-design assessments so that authenticity is preserved in an online learning environment.

Common trends of actions from state or national governments in response to school closure included cancellation of state-wide or nation-wide high-stakes or standardized tests, which have been

widely welcomed and applauded by teachers, parents, and school leaders who recognized the adverse effect of school closure and disruptions on students' learning outcomes and student well-being. For example, the United Kingdom's Department of Education cancelled this year's GCSEs, AS, and A levels exams. The International Baccalaureate's Diploma Programme and Career-related Programme exams in May 2020 were also cancelled. Some states in the United States and provinces in Canada have also opted to cancel state-wide or province-wide standardized tests in identified grade levels. In the Philippines where the K-12 academic calendar runs from June to March, schools affected by the lockdowns have decided to cancel remaining assessments and to re-align final marks computation of students.

Designing for Authenticity

In an online distance learning environment, information is simply a click away from students. The availability of information makes it harder for teachers to use simple recall-based assessments as means to gauge mastery in student learning. While it is not totally bad to check a student's understanding about basic and foundational concepts, teachers need to design assessments that target the higher tiers of Bloom's Taxonomy. In an online learning environment, performance-based assessments give the students the chance to demonstrate learning authentically by applying newly acquired knowledge and skills on real-world problems. Moreover, students should be able to create something that would demonstrate mastery in that given problem. In performance-based assessments, students are required to accomplish task-based challenges rather than simply recalling information that may not even be grounded on the given real-world problem.

The problem to be solved in an authentic assessment should be situated or seen in the various facets of the real world, such as in the workplace, civic life, immediate society, or most importantly, in the global community. Following the main principles of approaches such as problem-based or project-based learning, the main

problem to be solved should be given to students at the beginning of the course. The early introduction and exposition of the main problem for the authentic summative assessment immerses students early on the online course. Students can become deeply engaged with the content, directly making sense of what they are learning at hand while at the same meta-cognitively connecting ideas and finding ways on how these sets of ideas and skills fit with each other. In these kinds of assessments, students are given the chance to exercise judgment and innovatively create a solution that solves the given problem. In an authentic assessment, teachers should be able to utilize online resources that allow students to rehearse skills, consult resources, and gather feedback that can inform and help them improve their performances and products.

In designing authentic online assessments, the following important steps are recommended:

1. Identify key standards of the assessment.
2. Identify tasks for students to perform or do that are grounded on real-world scenarios. Identify accepted evidence of learning.
3. Identify performance or product task criteria.
4. Develop rubrics for performance or product.
5. Identify benchmarks or check-ins for the duration of the assessment.
6. Plan for sharing to the public or to an authentic audience for feedback and showcase.

Technology tools in online learning should enable students to choose and decide how they will demonstrate their learning. Tech tools allow them to have a choice on which platform to use and how to create these products that target the given key standards. In an authentic assessment, students should not be simply submitting papers or answering long tests or quizzes. They too can use online tech tools to amplify their voices through creating and publishing their products or performances. With proper guidance and readiness especially with younger students, authentic assessments can be opportunities to give students voice and choice, thereby developing and promoting higher learner agency.

Examples of authentic assessments in an online learning environment and web-based tools or apps that students can use:

Sample Authentic Assessments	Web-based tools or apps
Student performance or products that solve given real-world problem	
• **Synthesis Papers** • **Research Papers** • **Collaborative Inquiry Projects** • **Learning Logs**	• **Text-Processing** – Word, Google Docs, Pages • **Slideshow Presentations** – PowerPoint, Google Slides, Keynote • **Spreadsheet** – Excel, Google Sheets, Numbers
• **Showcase** or **Project Portfolios** • **Peer Reviews** • **Case Studies**	• **Digital Web-based portfolio/ journals** – Google Sites, Weebly, WordPress • **Digital Posters** – Canva, Photoshop • **eBooks** – Book Creator, Pages, iBooks Author
• **Multimedia** or **digital products** as evidences of authentic learning	• **Video/Film-Making**– Clips, iMovie, Adobe Spark Video • **Podcasting** – Anchor, GarageBand • **3D Modelling** - Tinker CAD • **App Creation** – XCode
Process-related activities in creating products or performances	
• **Immediate feedback-giving** via synchronous activities	• Skype, Google Hangout, Microsoft Teams, FaceTime
• **Collaborative** activities	• Google Suite for Education, O365, iCloud versions of iWork
• **Consulting** or **connecting** with an expert	• Skype, Google Hangout, Microsoft Teams, FaceTime, email apps

Designing for Formative Assessment and Feedback

A very crucial part of online distance learning is the presence of helpful formative assessments and timeliness of feedback to the online learners. In an online distance learning environment, we recognize that there is a geographical, pedagogical, and psychological gap between the teacher and learner which can have a negative effect on the side of the learner. In distance education, this theory is often referred to as the transactional distance theory. According to Michael Moore, the proponent of this theory, teachers in distance education should ensure that the structures in a distance education course promote sustained interaction between the teacher and the learners. One way of fostering that interaction is through providing timely and regular feedback to their learning through formative assessments, which are strategically embedded throughout the online course.

Probing deeper, formative assessments are ways that can help the learner to individually and personally gauge his or her understanding of the content in the instructional material, lesson, or unit. Formative assessments serve as checkpoints for students to check-in and gather feedback on how well or not they understood the lesson. The feedback that comes from formative assessments will in turn inform both the teacher and the students to make necessary actions geared towards improvement of teaching and learning. For the teacher, the pertinent information from the formative assessment helps in adjusting the content and process of instruction delivery. It helps the teacher to specifically target students who may need guidance and assistance in learning. For the student, the feedback from formative assessments helps the student to focus on the more pressing content or skill that needs to be further developed and mastered. In a way, the feedback from formative assessments help develop self-monitoring skills in students as they become more mindful of their progress throughout the course. If the teacher promotes the idea of growth mindset-learning from mistakes and failures-formative assessments in distance education becomes a key ingredient in promoting better

learning and achievement of desirable learning outcomes because feedback and formative assessments are learning by themselves.

Some principles in designing and embedding online formative assessments and feedback include:

1. Formative assessments should help in developing skills and mastering concepts that students need to make sense of and accomplish the summative assessment at the end of the online course.

2. Formative assessments should engage and enable students to individually construct and connect what they are learning to what they already know.

3. Formative assessments should engage and enable students to collaboratively construct and connect what they know with what other students know.

4. Formative assessments should provide proper feedback. In giving feedback, Grant Wiggins recommends that feedback should be tangible, transparent, actionable, user-friendly, timely, ongoing, and consistent.

5. Formative assessments may also be accompanied by helpful rubrics or checklists for students to use as they reflect on what they know and can do.

6. Formative assessments should give students the chance to reflect and monitor their own learning.

Formative assessment and feedback converge with online tech tools or materials to deliver online formative assessments. Indeed, technology tools are very helpful in delivering feedback especially in online courses, which allow a great amount of self-paced learning. Online technology tools should be taken advantage of to provide timely feedback even when students are learning on their own through asynchronized learning activities. Feedback should continue even when there are no direct interactions between the teacher and the learners. In a way, the feedback in formative assessments takes on and manifests the needed teaching presence in an online distance learning course.

Here are some helpful online tech tools for formative assessments and feedback:

Sample formative assessments	Web-based tools to support formative assessments
Online quizzes with automated feedback	Quizlet, Google Forms, Kahoot, Pear Deck Learning Management Systems such as Schoology have quiz features that provide immediate feedback to students.
Guided learning through videos and other interactive media	EdPuzzle, Khan Academy, NearPod, YouTube
Recorded explanation/feedback on diagrams, solutions, or processes created by students	Flipgrid, Explain Everything, Seesaw, Screencastify, Screen Recording feature of Apple devices, Kaizena
Tracking of student progress through uploading learning artifacts for process portfolios	Seesaw, Book Creator, Pages, Google Sites
Discussion Threads/Boards	Flipgrid, Padlet Learning Management Systems such as Schoology have discussion boards or threads
Feedback Poll	Mentimeter, Poll Everywhere, Survey Monkey
Sharing of Checklist/Rubrics	Any document-based app that shows the rubrics or checklist

THOUGHTS ON PROFESSIONAL DEVELOPMENT

Professional learning matters because it is a key way for us to make education better, but the way we define, implement, engage in, and seek to determine the effectiveness of professional learning also matters. With traditional professional learning decimated around the world, as events, gatherings and travel are all cancelled, professional learning needs to be rethought. What may 'professional learning' look like, when teachers need to change at a very rapid rate?

The kind of learning teachers are doing now is transformational.

Transformational professional learning, learning that makes a difference in and for schools, is "learning that shifts beliefs, and thereby behaviors, of professionals. It is tied to an individual's personal and professional identity" (Netolicky, 2020, p.18). With the rapid rate of change currently being experienced, teachers are learning in situ, on the fly, and at their point of need.

Ways in which professional learning is happening during this pandemic include.

1. Professional Learning Communities - Colleagues helping colleagues with planning, learning technologies, remote pedagogy, feedback strategies and ways of assessing.
2. Webinars offered by teacher experts.
3. Schools, where possible, providing one-on-one, online, or telephone support from IT, either internally or from outside experts.
4. Social media platforms in which teachers, school and system leaders, and education organizations around the world are sharing resources, processes and learnings as they address education needs in this uncertain time.

Usually, in order for teachers to process and implement professional learning, they require the time and space to do so. The rate of educational change and school closures has meant that there is no time and space, and schools have different levels of resourcing. Tech companies are providing free online professional learning on their platforms and tools, which is useful at this crisis time, but as stated, we need to be cautious about those pushing corporate agendas or using this as an opportunity to build databases and collect user data.

"Effective professional learning is targeted, ongoing, differentiated, carefully planned and has a balance of high support and high challenge" (Netolicky, 2020). Currently there is more challenge than support, as teachers are adapting by necessity. There is targeted professional learning available, but much of how teachers are currently learning is job-embedded: learning as by doing and by collaborating as they figure out what teaching in a time of global crisis looks and feels like.

TO SUPPORT PARENTS, GUARDIANS AND CAREGIVERS

Parents are also experiencing anxiety as they try to balance many different stressors at this time. A glance at social media and you can see parents sharing tips on scheduling, routine and online learning sources. They are trying to minimize the disruption of learning in this unusual time. During school closures, parents/guardians/caregivers will need support for their child's learning if a system or school decides to implement distance learning or not.

This is not homeschooling; this is crisis learning done from a distance. Expectations need to be measured and realistic. Parents will not be able to spend their entire days educating their children.

Acknowledging that every context is different, a teacher, school, district and department should try and communicate with parents/guardians/caregivers using all available tools such as mail, email, text and phone call. This should be with no pressure to deliver the learning if they are not capable for any reason. Children should not be punished for having to do distance learning within a context of a pandemic.

A checklist of outcomes with resources that the parents/guardians/caregivers can access, as well as times they can reach the teacher for clarification, should be provided. This should be age appropriate and sent with the routine/schedule that is suggested.

Also, an explanation of what they are doing and why, would definitely be useful for parents. For elementary school parents, this will be important, but for older students this is a good time to become more autonomous learners. This is one of many great examples globally, of a plan sent from a District to the parents:

https://docs.google.com/document/d/1-0RLGt32itIq5sMDva

DIVPj5hYAVJinGdp_jDy9qMUs/edit?fbclid=IwAR0VpzSZgGjH2kCd xBjxCDcnWBIZft73OOcOIagxBRp2UTmMfWeJB42hSQM

Here is a second example from the Beijing City International School for elementary students, which showcases the plan, the evolution and how they are implementing school culture:

https://drive.google.com/file/d/1tv617U9OOy0W 0ejuvmoCv1ofy8vQkVlY/view?fbclid=IwAR39JSb_ SYOzUjV6M1vmzfisxQo9Dn5kyPJn3LlHh9RG1Fu2ODnUPRBrf6E

RECOMMENDATIONS

1. Acknowledge that every system/district is different and each context should have a unified approach to education during the school closure.

2. Educational authorities should be well informed by their teachers and school leaders on their capacity to deliver distance learning. The information should clarify what gaps exist in order to inform policy on the needs of the students who don't fit in the distance learning plan. They may require supplemental support from some form of media or ICT.

3. Communicate consistently and clearly what the expectations are during school closures.

4. Distance learning is suggested; however, as stated, it depends on each context during this pandemic. All forms of media and ICT should be considered to reach all children.

5. If systems/districts allow for online learning, they

should decentralise the decision making for this component to individual schools when possible.

6. Districts/systems should be key supports throughout this process, but should rely on the expertise of their professionals to make the right judgement call on how to deliver the education.

7. Schools should put a plan together with their staff on what distance learning will look like weekly and daily. This needs to be based on the tools, timetables, availability, demographics etc.

8. Designing the learning experience will take time. Teacher experts in designing blended and online learning experiences that support distance learning should be collaborating with colleagues to help them think through the design process.

9. Evolution over the period of school closure will be necessary.

10. Discussion needs to be had with education technology companies to make sure that data and privacy of students are protected during this time.

11. Recommendations for schools/teachers for distance learning:

    a) Distance learning can involve a combination of synchronous and asynchronous approaches. Teachers can create experiences for students to work at their own pace and take time to absorb content. Assignment likely will take twice as long to complete at home because of different factors; prioritize and be realistic.

    b) Manage the expectations – give explicit guidelines, publish those guidelines, give explicit instruction outlines and be specific regarding the length of time to complete the session of learning.

    c) Don't reinvent the wheel – plenty of videos and websites for content already exist, during this crisis it is not the time to record all your content.

    d) For which tool to use, it might be decided for teachers from a central decision maker or you might be able to choose what LMS platform works the best for you. Lean on the experts within your network to help you out.

    e) Be empathetic – Ask how they are doing, care, assign a reasonable workload; encourage students to balance

online and offline, and connect with one another – understand that they have other classes and other responsibilities. The key is being a steady constant reliable place at the moment without overwhelming them.

f) Communicate consistently – all instructions and assignments must be communicated via one source – consistency is key -particularly at young ages.

g) Send templates or already made checklist for self-regulation, to-do lists and/or outcome lists to make planning easier for parents and students

h) Students need a space to talk. For some, the teacher is the person they open up to in times of crisis. They need to share their feelings.

i) Build in time for them to become used to the online platform if you are using one as you design the learning experience.

CONCLUSION

"Maslow before Bloom"must be our mission. First and foremost, we must ensure that our students are safe and have their basic needs met. This will not be the case in many settings around the world. Second, that parents and teachers are safe, needs are met and capable to help in their learning.

We must do our best to alleviate their worries and have at our disposal the most updated information from our governments to help get the messaging across to parents of what's expected and where they can go for help. Learning will not happen without this being done first and foremost. The relationships the teachers have built with their students over the year or semester are key to help them navigate this difficult time as well as build upon to start the distance learning process.

Platforms that allow teachers to see their students' faces, enable teachers to look for anxiety or fatigue giving them a better understanding of how to personalize the distance learning. Then, we must ensure that as the on-line part of distance education proceeds, that our students' data is safe. The rest is up to the district and teachers to decide what platforms to use (or not use), looking to our colleagues around the globe who have already endured what we are now facing as suggested in the recommendations above. Finally, we must allow our educators to do what they know is best for their particular group of students as long as it stays within the unified messaging. One voice is key for direction, once this is established and the parameters given let the teacher identify what works best for them as a school and for their own individual students.

Considering how social media has brought us closer to people globally, but in many ways isolated us from our neighbors in our own community, it is ironic that in this time of social distancing,

social media has brought us together like never before to find solutions that work for education during this pandemic. We will get through this, together. In the meantime, we can use this opportunity to learn from each other, prioritize the most vulnerable and make pedagogical decisions based on our unique educational context keeping children at the center.

RESOURCES

Resources for Educators, Schools and Systems

The resources listed in this report are for example purposes only. This does not constitute an endorsement of any products or services mentioned.

As stated, there are many elements to think about and ethical questions to ponder when designing distance and blended learning. Many online professional learning networks, online collective help groups, threads and hashtags for teachers have been created or already exist. Teachers are doing a great job gathering resources to try and make the online component of distance learning work. Professional learning networks on twitter run education focused chats and Facebook groups permits more interaction and sharing of resources. On most major social media platforms, you can find information searching for the hashtags.

Here are some examples:

Hashtags:

- Project Based Learning - #pblchat
- Australia PLN - #aussieED
- Arts Education - #ArtsED
- African PLN - #AfricaED
- What is School Community - #whatisschool
- Education Technology PLN - #edtech #edtechchat
- Podcast Professional Development PLN - #PodcastPD
- 21st Century Education PLN - #21stedchat
- Digital Citizenship PLN - #digcit

- Flipped Classroom PLN - #FlipClass
- Gamification PLN - #Games4Ed
- Apple Education/Apple Distinguished Educators - #AppleEDUChat
- Microsoft Education/Microsoft Innovative Educator - #MicrosoftEDU #MIEExpert
- Global Teacher Prize - #TeachersMatter
- ActivatED: Education Technology and Society – Facebook group
- Educator Temporary School Closure for Online Learning - Facebook group
- Online Learning Collective – Facebook group
- Hashtags - #distancelearning #onlinelearning #remotelearning #education #teaching #unesco

Learning Management Systems (LMS)

- *Blackboard*
- *Canvas*
- *CenturyTech*
- *ClassDojo*
- *Edmodo*
- *Edraak* – Arabic
- *EkStep*
- *eKool*
- *Fresh Grade*
- *Go Bubble*
- *Google Classroom*
- *Microsoft 365* – Teams
- *Moodle*
- *Nafham* – Arabic
- *Schoology*
- *Seesaw*
- *Skooler*

- *Study Sapuri*
- *Cell-Ed*
- *Funzi*
- *Ustad Mobile*
- *2 Simple-Purple Mash*

Video Conferencing Tools

- *Dingtalk* (Alibaba Group)
- *Lark* (ByteDance)
- *Hangouts Meet* (Google)
- *Teams* (Microsfot)
- *Skype* (Microsoft)
- *Zoom*
- *Cisco Webex*
- *Whereby*
- *Collaborate* (Blackboard)
- *Facetime* (Apple)
- *Youtube live* (Google)
- *What's App* (Facebook)
- *Google Hangouts* (Google)

TOOLS FOR CREATING

- *Screencast-o-Matic*
- *ScreenCastify*
- *Microsoft powerpoint audio recorder*
- *Canva for Educators*
- *Camtasia Anchor*
- *Flipgrid*
- *Padlet*
- *Screenflow* (Mac)
- *Quicktime* (Mac)

- *WeVideo*
- *Clips* (Apple devices)
- *Thinglink*
- *Buncee*
- *EdPuzzle*
- *Kaltura*
- *Nearpod*
- *Pear Deck*
- *Squigl*

Collaboration Tools

- *Google* docs, slides, sheets, etc.
- *Microsoft Office 365* Word, Excel, Sharepoint, Teams, etc.
- *Icloud* Pages, Keynote Numbers, etc.
- *Trello*
- *Evernote*
- *Book Creator*
- *Canva*
- *Padlet*
- *Piktochart*
- *Flipgrid*
- Social Media Groups

Formative Assessment Tools

- *Kahoot!*
- *Poll Everywhere*
- *Socrative*
- *Mentimeter*
- *Pear Deck*
- *EdPuzzle*
- *Quizlet*

- *Google Forms*
- *Survey monkey*

Content Tools

- *Numberbender*
- *Youtube channel*
- *Sustainable Development Goals*
- *BrainPop*
- *Buncee*
- *Explain Everything*
- *Alison*
- *Coursera*
- *EdX*
- *University of the People*
- *Icourses* – Mandarin
- *LabXchange*
- *Canvas*
- *Ubongo*
- *Newsela*
- *BrainPOP*
- *Byju's*
- *Discovery Education*
- *Khan Academy*
- *KitKit School*
- *Mindspark*
- *Mosoteach* – Mandarin
- *OneCourse*
- *Quizlet*
- *Siyavula*
- *Curated Collections*
- *Explorer Classroom*
- *Educator Community*

Resources for Students and Parents

All Grade Levels

- *https://classroommagazines.scholastic.com/support/learnathome.html?promo_code=6293&eml=CM/smd/20200312//txtl/sm/ed&linkld=84269747*
- *https://kidsactivitiesblog.com/135609/list-of-education-companies-offering-free-subscriptions/*
- *Kennedy Space Center - Lessons for Students*
- *http://www.amazingeducationalresources.com/?fbclid=IwAR0EW_vlxGlHuHqJxQYUk0KVOtFWJxwLsjBe5M2sVv-8pj-Vssyai-iFUrQ*
- *https://docs.google.com/spreadsheets/d/1UYhVO0vH84Nfv2NZuAFttvK6x8lCI3dl-7x-jqUiR_E/edit#gid=0*
- *https://www.familyeducation.com/at-home-learning-resources-for-the-covid-19-outbreak*
- *https://www.familyeducation.com/user/10010111/edit*
- *https://www.familyeducation.com/?utm_source=partner&utm_medium=referral&utm_campaign=FEN_Outreach_032020*
- *https://www.teachervision.com/teachervision-opens-its-resources-in-response-to-covid-19*
- *Twinkl*
- *The New York Public Library*
- *White Box Learning - STEM*
- *NASA STEM Activities*
- *https://schools.tinybop.com/*
- *Apps for Students with Special Needs*
- *Physical Education at Home*
- *Online Classes at Ivy League Schools* (Free)

4 Years Old to 8 Years Old

- *https://docs.google.com/spreadsheets/d/1MX2SE6VH31wSmuBkEBnNKabHhlMTMdmCc1XAoMf6nTA/edit#gid=2015456289*

- *https://www.hopster.tv/*
- *https://www.curiousworld.com/*
- *https://www.funbrain.com/*
- *https://tinybop.com/*

9 Years Old to 13 Years Old

- *https://docs.google.com/spreadsheets/ d/1kDKiYpMkYljpcF366kyH3nu- byx4JU5MlMcF7jLQzLw/edit#gid=710393283*
- *https://www.poptropica.com/*
- *https://www.factmonster.com/*
- *https://www.coolmath4kids.com/*

14 Years Old to 18 Years Old

- *https://docs.google.com/spreadsheets/d/1-alvbcZGH_e241DwGs- 99XZSLZ1Uc7-oPfHuX0mXzHM/edit#gid=1989279191*
- *https://www.coolmath.com/*
- *https://www.infoplease.com/*
- *https://www.coolmathgames.com/*

Literacy

- *Speakly.me*
- *African Storybook*
- *Lingvist.com*
- *Global Digital Library*
- *StoryWeaver*
- *Worldreader*
- *Newsela*
- *UFDC Digital Library of Historical Children's Books*
- *Rivet*
- *Scribd*
- *Epic*

- *ReadingIQ*
- *Oxford Owl*
- *Story Shares*
- *International Children's Digital Library*
- *Project Gutenberg*
- *Raz Kids* - on-line guided reading
- *Faded Page*
- *Open Library*
- *ReadWriteThink*
- *Lit2Go*
- *Audible* - Tons of stories to stream during COVID-19
- *Storyline Online* (YouTube)

Math and Science

- *99math.com*
- *Math Aids*
- *https://www.avaya.com/blogs/ archives/2020/03/avaya_spaces_cv/*
- *www.mathycathy.com/blog*
- *Math Playground*
- *PBS Kids*
- *www.pathstomath.com* (grades 7,8,9)
- *Super Kids*
- *University of Waterloo Math/Computing Courseware*
- *Symbolab*
- *Math Is Fun*
- *Periodic Videos* (Chemistry)
- *Sixty Symbols* (Astronomy and Physics)
- *Numberphile* (Mathematics)

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https://unesdoc.unesco.org/search/N-EXPLORE-e9f5a4e2-7093-45fa-b58b-93296544e88e

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https://news.itu.int/itu-statistics-leaving-no-one-offline/

https://www.oecd.org/education-industry-summit/EI_ICT_Protocol%20(1).pdf

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Thinking about Pedagogy in an Unfolding Pandemic

An Independent Report on Approaches to Distance Learning During COVID19 School Closures

Independent Report written to inform the work of Education International and UNESCO

Armand Doucet, Dr. Deborah Netolicky, Koen Timmers and Francis Jim Tuscano

15 March 2020

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