

the BlueDot

Exploring new ideas for a shared future

Reimagining Learning Spaces for Uncertain Times



FEATURES

- **Designing for Care: Hybrid Pedagogy in the Time of COVID-19**
- **Facilitating Parent Involvement in Distance Learning**
- **Unleashing the Potential of Digital Learning: Framerspace and Libre Pedagogy**



ISSUE 12, 2020

THE BLUE DOT features articles showcasing UNESCO MGIEP's activities and areas of interest. The magazine's overarching theme is the relationship between education, peace, sustainable development and global citizenship. THE BLUE DOT's role is to engage with readers on these issues in a fun and interactive manner. The magazine is designed to address audiences across generations and walks of life, thereby taking the discourse on education for peace, sustainable development and global citizenship beyond academia, civil society organisations and governments, to the actual stakeholders.

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Akriti Mehra, UNESCO MGIEP

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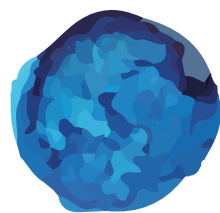
*Prevention of Violent Extremism
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*Instructional Designer,
UNESCO MGIEP*





“Look again at that dot.
That’s here. That’s home. That’s us.

On it, everyone you love,
everyone you know, everyone you ever heard of,
every human being who ever was,
lived out their lives.
The aggregate of our joy and suffering
thousands of confident religions,
ideologies, and economic doctrines,
every hunter and forager, every hero and coward,
every creator and destroyer of civilization,
every king and peasant, every young couple in love,
every mother and father, hopeful child,
inventor and explorer, every teacher of morals,
every corrupt politician, every superstar,
every supreme leader, every saint
and sinner in the history of our species lived there-
on a mote of dust suspended in a sunbeam.”

CARL SAGAN

PALE BLUE DOT: A VISION OF THE HUMAN FUTURE IN SPACE



CHIEF EDITOR'S
MESSAGE



The COVID-19 pandemic has disrupted the norm, forcing us to rethink how we live, work, study, educate and learn. The pandemic has affected learners globally with 1.2 billion students out of school in over 140 countries worldwide. COVID-19 has forced us to relook at education with a fresh lens and in many ways given us an opportunity to explore novel learning spaces. These include the use of the digital medium by students, but also defining the role of teachers, families and content developers.

I would venture to say that a majority of education systems have failed to deliver during this pandemic. Even those which had online learning systems were not prepared in the true sense of providing a rich learning experience that took advantage of what the digital medium could offer. Instead, education was reduced to YouTube videos, visual presentations (such as through Microsoft Powerpoint) and PDF versions of traditional text books.

The time is right to reflect and reimagine how education systems should be designed for the future – not just for the uncertain times but post COVID-19 and beyond. The shift towards digital learning during the pandemic has revealed the advantages the medium has to offer in the form of interactive, immersive and personalised learning. On the other hand, the change has also brought to light the grave challenges that educators and policymakers are faced with - while trying to provide accessible, inclusive, quality and equitable education for all, in line with the United Nations’ (UN) Sustainable Development Goal (SDG) 4.

². <https://en.unesco.org/covid19/educationresponse>

Recreating Novel Learning Spaces *for the Post-Pandemic World*

Is digital learning the answer for the 21st century? Is a hybrid-learning approach the best answer for the future of education? What principles of universal design need to be incorporated while designing digital content to ensure inclusive and equitable learning for all? How do we reach the most vulnerable children and youth in times of crises and otherwise?

These are some of the thoughts that triggered the conceptualizing of Issue 12 of The Blue DOT, titled ‘Reimagining Learning Spaces for Uncertain Times’. The Issue aims to capitalize on learning from the pandemic and propose transformative alternatives to today’s education systems in terms of purpose, delivery and content as we proceed to a world that presents a lot of opportunities, but also its own set of challenges.

In this issue, we hear from educators, academics, researchers, practitioners, policymakers, and youth contributors on learnings from the pandemic and proposals of novel learning systems for the 21st century and beyond. Amongst others, we hear from the Minister of Education, Sri Lanka, Suzie Boss on Pushing the Boundaries of the Traditional Classroom through Project-Based Learning, Jesse Stommel on Hybrid Pedagogy at the time of COVID-19 and Caroline Torres on Critical Place-based Pedagogy for Rural and Distance Learning.

Additionally, for the first time in The Blue DOT, we invited external Guest Editors to be a part of our Editorial Board. I am very pleased to introduce Kavita Rao, Professor

in the Department of Special Education at the University of Hawai’i, College of Education; Juan Felipe Restrepo Mesa from the Montessori Schools in Colombia and Matthew Farber, Assistant Professor of Technology, Innovation and Pedagogy (TIP) at the University of Northern Colorado as part of the Editorial team of this issue. Their contributions to the issue have been invaluable and we at the Institute appreciate their guidance and expert views in shaping the publication.

I would like to thank the authors of this issue for sharing their ideas and thoughts with us and our reader audience. I sincerely hope that some of the proposed principles, learnings and suggestions can be applied to education systems for the post-pandemic world. I would welcome your feedback/suggestions through email on bluedot.mgiep@unesco.org

I would also like to take this opportunity to dedicate this issue to Sir Ken Robinson – whose ideologies on education have inspired the Institute’s vision and approach as well as many of the programmatic activities, including the focus on creativity, critical thinking and inquiry. His famous words “If you are not prepared to be wrong, you’ll never come up with anything original” have driven the formulation of the Institute’s Manifesto, which governs how we operate at the Institute, specifically the one that focuses on risks and learning: “we are willing to take risks because without risk we do not learn.”

ANANTHA KUMAR DURAIAPPAH



Concept: Reimagining Learning Spaces for Uncertain Times

The speed and magnitude with which COVID-19 spread across the globe has been a wake-up call to many. The current crisis has made the notion that we live in a world characterized by uncertainty and vulnerability much more concrete and personally relevant. **Amid the COVID-19 outbreak, as of 30 March 2020, 1.5 billion children and youth – close to 90 per cent of the world's student population – were affected by school closures in more than 180 countries.**ⁱ This has given a renewed impetus for taking seriously calls for making education systems prepared for, and responsive to, interconnected global challenges – from climate change to pandemics like the one we are facing today.ⁱⁱ

The present crisis offers an opportunity—albeit forced rather than voluntary—to explore alternatives to face-to-face instruction that takes place in schools. Calls for radical alternatives to institutionalized

education systems are not new, and times of uncertainty and turmoil often advance calls for such alternatives to counter what is seen as de-humanizing tendencies of school education. Early in the 20th century, between the two World Wars, Maria Montessori travelled around Europe and urged teachers to replace authoritarian pedagogies with a dynamic curriculum which allowed students to choose what to study.ⁱⁱⁱ In the 1970s, following radical leftist movements rejecting traditional standards and authorities in the 1960s, Paulo Freire and Ivan Illich led the international education debate, hitting a chord with many alternative educators. Freire's theories approached education as civic, political, and moral practice, whereby learners espouse their own power as critically engaged citizens. In Deschooling Society, Illich developed a radical critique of schools as stifling genuine learning and proposed the creation of 'learning webs' with the technologies of the time, such as tape recorders.^{iv} Although Illich's ideas, reflecting radical

criticism of capitalist society and its institutions including schools, largely became obscured in recent decades, his ideas of learning webs or networks went far ahead of the time, proposing to make learning personalized (driven by learner interest), collaborative (supported by peers), interconnected and equitable.

Novel Learning Spaces

The Issue 12 of the MGIEP Blue Dot highlights how novel learning spaces and modes of learning that emerged in response to the global COVID-19 pandemic provide valuable lessons for preparing for future shocks and disruptions. In so doing, it also underscores our potential to innovate existing education systems to be better equipped to cultivate young people's competencies for engaging creatively and responsibly with the uncertain—difficult yet hopefully reflexive and transformative—times ahead. The individual and collective experiences of the current education systems following the COVID-19 crisis are important sources of reflection and inspiration that can be mobilized to shape the future of education. This issue of Blue Dot introduces inspiring examples of educational programmes and interventions aimed at (1) providing distance learning solutions (both high-

The Issue 12 of the MGIEP Blue Dot highlights how novel learning spaces and modes of learning that emerged in response to the global COVID-19 pandemic provide valuable lessons for preparing for future shocks and disruptions.

tech and low-tech), (2) reaching the most vulnerable children and youth, and (3) enabling people to cope with stress, fears and uncertainty and resist a capture by narrow self-interest at the times of crisis. It also provides insights on ways forward to make a transition from an education system designed for face-to-face instruction to a blended and hybrid system combining the best of what the physical and virtual worlds have to offer. It reflects on both the promises and challenges of going digital, including development of partnerships with the private sector for the provision of infrastructure, hardware and software as well as the collection, management and use of data, especially the personal data of children and youth.

This Blue Dot issue aims to propose transformative alternatives to today's education systems in terms of purpose,

delivery, and content – alternatives that are more fully human and allow us not only to survive but to thrive, leading a life that makes sense and a difference in our interconnected, interdependent world, into an inherently unknowable future. ►

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- i) <https://en.unesco.org/covid19/educationresponse>
- ii) During the United Nations of Decade of Education for Sustainable Development (2005-2014), Education for Sustainable Development (ESD) was conceived very broadly. For example, Member States in the Asia Pacific region developed the following operational definition: "Education for Sustainable Development (ESD) facilitates the degree to which an education system is prepared for, and is responsive to, existing and emerging challenges (e.g. disasters)". See page 2 of Astrolabe: a guide to education for sustainable development coordination in Asia and the Pacific (UNESCO Bangkok, 2011) at <https://unesdoc.unesco.org/ark:/48223/pf0000193013>
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Reimagining Learning Spaces for Uncertain Times



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Imagine the children and youth of today in 10, 20, 50 years time... What kind of adults do you hope they are? What drives, informs and inspires them? What challenges do they face and how do they solve them?

I have been doing this thought experiment for years and getting similar responses from people all over the world. **Collectively, we wish future generations to be curious, critical and independent thinkers.** We also hope that they become life-long learners and develop the tools to build their own futures, with effort and motivation. We aspire that they become responsible and committed citizens, showing empathy to others and respect for the environment. We also seek to give them the tools to solve the global challenges they will most certainly have to face as a generation, such as climate change, rising inequalities, violent extremism and pandemics like the COVID-19 we are facing these days.

If that is the future we dream about, then another question arises: what do we need to do now? How should we educate our children today in order to plant the seeds for that future? For some time now, the idea that we live in a VUCA (Volatile,

Uncertain, Complex and Ambiguous) world has been part of the discourse of innovation in many fields, including education. Yet, educational innovation has mostly occurred on the margins, led by passionate and adventurous individuals and organizations (and, sometimes, states or countries) with a clear vision that transforming education is both urgent and possible.

The COVID-19 pandemic has been a wake-up call to many, making the notion that we live in a world characterized by uncertainty and vulnerability much more concrete and personally relevant.

Amongst the hardship involved in this global crisis, perhaps one of the opportunities we are finding as an international community is a renewed impetus for making education systems prepared for, and responsive to, interconnected global challenges. We are starting to understand the need to reimagine learning spaces, therefore transforming traditional classrooms into environments where children can thrive and develop the knowledge and tools they need for the uncertain future they will need to navigate as adults. Addressing this goal requires taking educational innovation to the

Scaling up innovative approaches to reach all children and youth in the world requires a sense of adventure and a big commitment of policymakers, practitioners, academics and the society as a whole.

next level, scaling up current initiatives and creating new ones that look at education as a lifelong endeavor that occurs both within and outside of schools. It means, thus, working with teachers and school leaders, but also with families, informal educators, social organizations and the community as a whole.

I believe a good starting place is to build on what we know about effective educational practices. We already know a lot. **For instance, we know how to design experiences that spark a love for learning, including the power of play and collaborative learning.** We are aware that content needs to be meaningful to students and connected to the real world. We know about the value of teachers' high expectations and careful

scaffolding. We recognize the importance of emotional well being in order to learn and that the physical environment where learning occurs matters. We have seen the potential of digital resources to enrich learning experiences.

Over and over, research has confirmed a set of ideas about the nature of effective teaching and learning that we can and must draw upon to ensure that we best prepare the children and youth of today for the VUCA world they will face in the future.

Scaling up innovative approaches to reach all children and youth in the world requires a sense of adventure and a big commitment of policymakers, practitioners, academics and the society as a whole. In this 12th issue of The Blue Dot you will find many great examples and reflections of what is possible in educational innovation, which I hope will be inspiring for all seeking ways to make it happen.

Crises push us forward. Perhaps more than ever, the education we dream about is closer than we think. Let's take the plunge. ►



Re-looking at Learning Spaces



DULLAS ALAHAPPERUMA
MINISTER OF EDUCATION,
SPORTS & YOUTH AFFAIRS,
SRI LANKA

Dullas Daham Kumara Alahapperuma is a Sri Lankan politician, current Cabinet Minister of Education and Sports and a Matara District member of the Parliament of Sri Lanka.



Being invited by UNESCO MGIEP's Director, Professor Anantha Kumar Duraipappah, to write a foreword to the 12th issue of the Institute's flagship publication The Blue Dot, under the theme of "Reimagining Learning Spaces in Uncertain Times.", has been one of the greatest honors and privileges of my life and I wish to express my utmost gratitude to the Director for his kind invitation, on behalf of the Government of Sri Lanka.

Growing up, I idolized and admired some of the greatest humanitarians such as Mahatma Gandhi, Rev. Martin Luther King and Nelson Mandela. In a world where each of us has been interconnected through globalization while living in a highly divisive world, I strongly believe the necessity to draw inspiration of those extraordinary human beings, their vision and ideology has been more important than ever. UNESCO MGIEP is following the path guided by virtues established by Mahatma Gandhi himself, and I was delighted to find out, The Blue Dot, as the organization's premier publication, shares wide information, knowledge and news in the diverse sphere of education, globally shedding light especially on education, and how such values of education could be utilised as a viable tool for building social integrity, cohesion and sustainable global citizenship in a plural world.

As the theme of this Issue suggests, **the world has quivered in uncertainty in the face of greatest adversity humankind endeavoured in a century.** The COVID-19 pandemic has

The world has quivered in uncertainty in the face of greatest adversity humankind endeavoured in a century.

affected entire educational systems globally leading to the closure of schools, and higher academic institutions. The pandemic has also resulted in various social and economic challenges and changes, including increasing student debt, migration to digital learning, food insecurity, and homelessness, as well as limited means to access to childcare, health care, housing, internet, and disability services. To make it worse, the impact of COVID-19 has highlighted the apparent disparity in our societies and hit it the hardest by growing severer day by day for the disadvantaged children and their families, causing disruption in learning, malnutrition, childcare problems, domestic violence and related economic problems to the unemployed and families who could not work.

According to UNESCO, "one section of the population is enjoying online learning, with virtual classrooms, with all kinds of apps, whilst a total of 826 million students are kept out of classrooms - and only 43 percent of this number has access to some form of online learning today." To meet with this critical challenge, **the Ministry of Education in Sri Lanka launched a series of subject - wise academic programmes nation-wide through TV channels for school children from morning**

till late in the evening according to the schedule of the academic calendar. Thus, the less privileged children who did not have wide access to the internet were able to benefit from this method of teaching.

Most countries with advanced technological development, have curtailed in-person classes and switched to online teaching and they had the ability to make that transition smoothly. Because of the pandemic, technologically ill-equipped countries have suffered the most, due to lack of a proper alternative to in-person classes. This particularly holds true for the South East Asian and African countries - where about 56 million learners live in places without mobile technology. Half of this population is in sub-Saharan Africa experiencing disruption in studies due to the closure of higher educational institutions. Only 24% of the population has access to the internet; poor connectivity, exorbitant costs and frequent power interruptions are serious challenges.

Hence, at this critical situation, it is our duty to protect the children and equip them with educational facilities. **Precautionary measures need to be taken to prevent the potential spread of COVID-19 in academic institution settings.** I believe that utmost care must be taken to avoid stigmatizing students and staff who may have been exposed to the virus. While taking effort collectively to mitigate the deadly threat of COVID-9, we must ensure the protection of children and young people.

I urge the international communities to give a helping hand in unison to the less affluent and digitally ill equipped nations, and create a vision to deal with the global pandemic challenge, create new models realigning priorities and entering a post-coronavirus in order to rebuild the world not in isolation but in collaboration.

I also wish to appeal the younger generation be more resilient, adaptable and skillful - as essential aspects to navigate this critical situation effectively, mainly because, if history has taught us anything, that would be the human spirit is and has always been able to bounce back and grow stronger in the face of adversity. The same human spirit has led humanity to overcome the most brutal wars, pandemics, natural and man-made disasters throughout history. I have faith in us to overcome this difficulty together and if we do so, in near future we will reap benefits of our efforts and determination, perseverance. I'd like to end my foreword quoting the Greek Philosopher Aristotle who said, "the roots of education are bitter, but the fruit is sweet."

Finally, I wish the Director of The Blue Dot UNESCO MGIEP, the editorial committee and the contributors of the magazine all the very best for their future endeavors.

Thank you.

DULLAS ALAHAPPERUMA
MINISTER OF EDUCATION, SPORTS & YOUTH AFFAIRS
SRI LANKA

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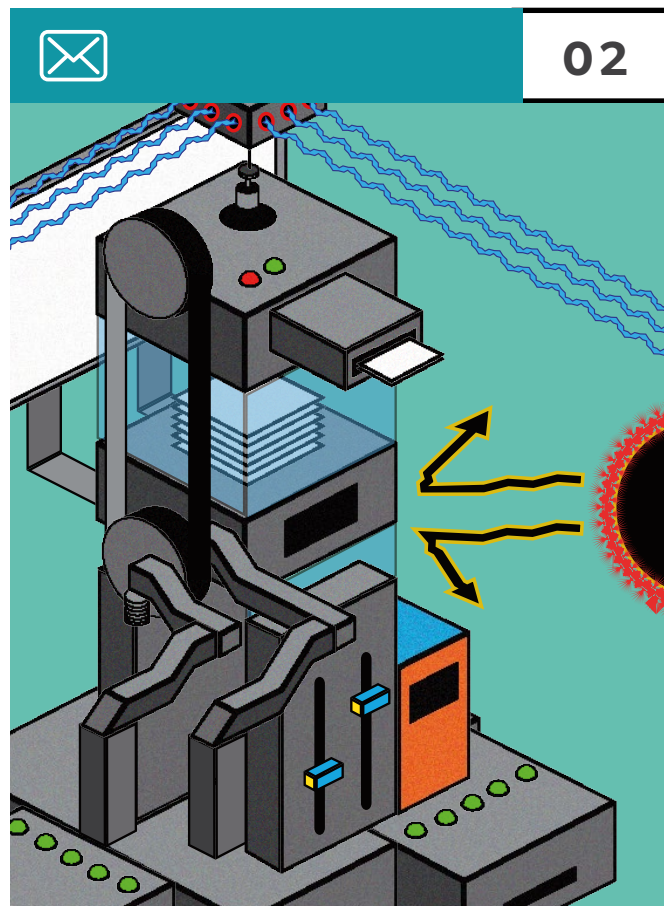
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Recreating Novel Learning Spaces for the Post-Pandemic World

By Anantha Kumar Duraipappah | Director, UNESCO MGIEP

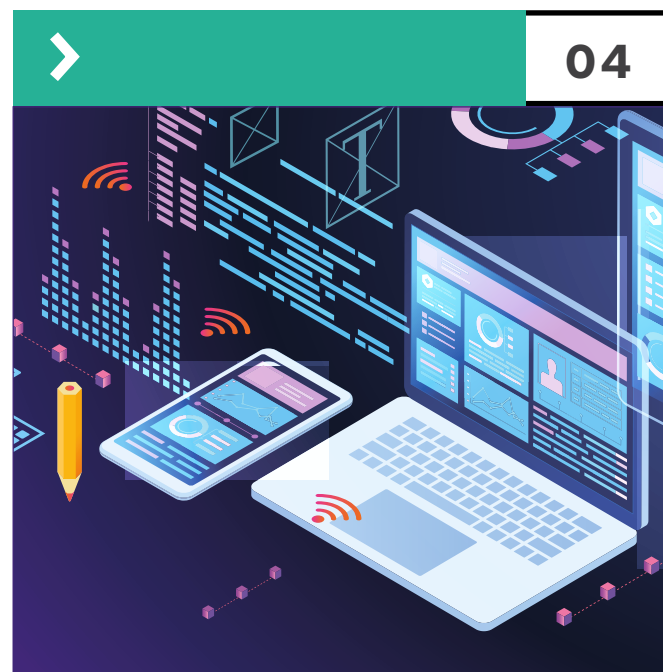


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Designing for Care: Hybrid Pedagogy in the Time of COVID-19

By Jesse Stommel | Co-Founder, Digital Pedagogy Lab & Hybrid Pedagogy: The Journal of Critical Digital Pedagogy



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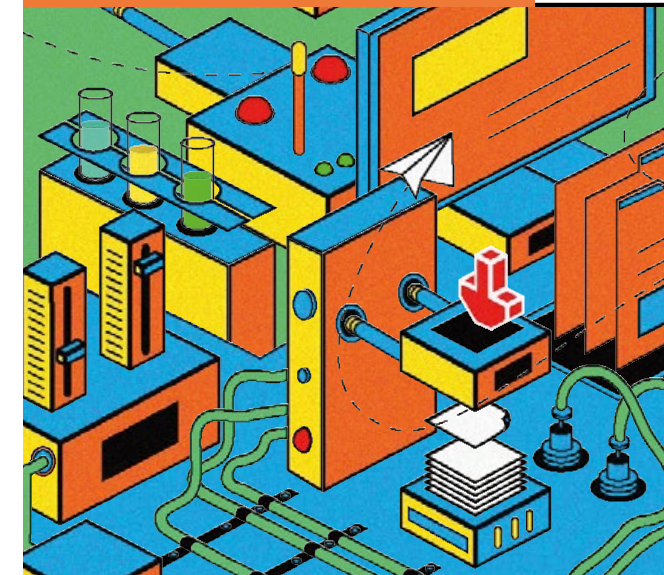


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Designing for Care: Hybrid Pedagogy in the Time of COVID-19



JESSE STOMMEL
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CRITICAL DIGITAL PEDAGOGY

Jesse Stommel is co-founder of Digital Pedagogy Lab and Hybrid Pedagogy: the journal of critical digital pedagogy. He is co-author of *An Urgency of Teachers: the Work of Critical Digital Pedagogy*. Jesse is a documentary filmmaker and teaches courses about pedagogy, film, and new media. Jesse experiments relentlessly with learning interfaces, both digital and analog, and his research focuses on higher education pedagogy, critical digital pedagogy, and assessment. He's got a rascal pup, Emily, two clever cats, Loki and Odin, and a badass daughter, Hazel. He's online at jessestommel.com and on Twitter @jessifer.

In the wake of COVID-19, I've seen and participated in lots of discussion about where learning happens and how our work can (and must) be restructured so education is available and accessible to students in the midst of this pandemic. I've heard many institutions use the phrase 'pivot to online,' which implies this is just a moment, a sudden turn, and that we will very soon (and just as easily) 'pivot' back. We need to be thinking about how we respond in the moment to this emergent crisis, but it's just as important that we talk about more sustainable ways forward. What we are facing right now will have an effect on education that lasts years (or longer), and it's exposing inequities and systemic injustices that many students have faced all along.

Educational institutions are spaces for learning, but more specifically, they are spaces for social learning. To create these spaces, our roles as educators and administrators of educational institutions have to be focused on building community in addition to offering courses, designing curriculum, and credentialing. Right now, supporting community is the piece of our work I see as most vital. How do we stay connected? How do we ensure learners from varied backgrounds can stay connected? The answer to these questions is personal and also pedagogical.

Carey Borkoski writes in 'Cultivating Belonging', "There is consensus in the literature about the benefits of a student's sense of belonging. Researchers suggest that higher levels of belonging

lead to increases in GPA, academic achievement, and motivation (p.30)." There has been much talk over the last several months about maintaining 'continuity' of instruction and assessment, but less discussion about how we maintain the communities at the heart of our educational institutions. This is the design challenge before us.

There is no one-size-fits-all set of best practices for building a learning community, whether on-ground or online. And there is no secret mix of ingredients that create the perfect hybrid strategy. When I co-founded the academic journal Hybrid Pedagogy in 2011, our tagline was "all learning is necessarily hybrid." What I meant when I wrote that phrase is that when we learn online, our feet are still on the ground, and even our physical interactions are often (or even usually) mediated by technology. The challenge of our present moment has made a discussion of hybrid pedagogies even more immediate and practical.

Right now, we have to find ways to design first for the folks who can't be present in-person or synchronously. Even if we have to sacrifice some attention to what can happen live and synchronously. A static recording of an on-ground classroom isn't sufficient. If we want to provide access to students who can't be present physically, making them feel on the wall after the fact isn't enough. Robust asynchronous learning requires that students can engage (as full participants) no matter how and when they are available. Too often,

institutions build for synchronous, in-person learning and find ways to make content also available remotely and asynchronously (lecture capture, for example). Those who have to learn online get an inferior copy of the original experience. Building for students facing issues of access means creating learning opportunities that center their experience. But we must also recognize that not all students can easily learn at home.

Many students face very specific challenges at home: housing insecurity, domestic violence, lack of access to internet or other technology, physical disability, chronic and acute illness. Virtual communities must be hybrid communities, or else we fail to acknowledge (and be responsive to) the lived realities of our fellow teachers and students.

We can't assume all students (or teaching staff) can simply join our online learning communities from home. We have to design and build with an understanding of these challenges and, even where learning remains fully (or mostly online), we have to continue to offer physical spaces in education (like dorms and libraries) for students who have no other homes from which to 'shelter in place.' Our efforts toward building community should be directed toward the students who need that community the most, the ones most likely to be feeling isolated even before the pandemic: disabled students, chronically ill students, black students, indigenous students, LGBTQ students, etc. We need to write policies, and imagine


Many students face very specific challenges at home: housing insecurity, domestic violence, lack of access to internet or other technology, physical disability, chronic and acute illness.

new ways forward, for these students, the ones already struggling, already facing exclusion. Access and inclusion for marginalized students should not require accommodation. Instead, these should be core values built into the design of our educational systems.


In a recent article for *Academe* (2020), the publication of the American Association of University Professors, I argued that "the path toward inclusivity requires structural change but starts with small, human acts" And Cathy Davidson has often said, "You cannot counter structural inequality with good will. You have to structure equality" (2017).

What does it look like to do this kind of work online? How do we walk our virtual campuses to address accessibility concerns? Where do we hold the necessary town hall meetings to address hard questions about inclusivity? How do we connect students learning on-ground to students who can only learn online? How do we craft compassionate approaches to grading and assessment? What kinds


THE TEACHING TOLERANCE GUIDE TO ‘A TRAUMA-INFORMED APPROACH TO TEACHING THROUGH CORONAVIRUS’ (2020) OFFERS SOME STEPS THAT CAN BE ADAPTED FOR (OR SUPPORTED BY) HYBRID LEARNING ENVIRONMENTS:




Establish a routine and maintain **clear communication**.



Relationships and wellbeing take priority over assignments and compliance.



Actively encourage and **support a sense of safety, connectedness, and hope**.



Acknowledge that **trauma is not distributed equally**.

of decisions must we make now to ensure access for students who become sick? The answers to these questions aren’t easy. There are not clear models for responding to what we are facing in education right now.

Flexibility and trust are key principles of any pedagogy worth its salt, but they are particularly important when we’re in crisis.

Our ability to develop community will depend on our willingness to acknowledge the trauma that members of our community have and will experience. "There is robust evidence that social isolation and loneliness significantly increase risk for premature mortality, and the magnitude of the risk exceeds that of many leading health indicators" (Holt-Lunstad et al., 2015). The trauma is even greater for students who are sick or caring for loved ones who are sick. And many of the symptoms of isolation, loneliness, or acute illness can’t be adequately anticipated by our more traditional pedagogies and institutional bureaucracies. Starting by frankly acknowledging this is key.

Cathy Davidson argues, in ‘The Single Most Essential Requirement in Designing a Fall Online Course’ (2020), “From everything we

know about learning, if the trauma is not addressed, accounted for, and built into the course design, we fail. Our students fail.” This may be difficult with some of our students on-ground and some online, but hybrid approaches will also allow the flexibility necessary for all students to find entry points to these discussions. The most crucial part of this work is not about keeping administrators and faculty connected to students, but about building hybrid spaces for students to stay connected with each other. For example, a live text chat (in a platform like Slack) which students not present can read later and insert their thoughts into threads that continue; on-ground students can also compose questions to seed online discussion, and vice versa. In his ‘Student Guide’ to the online ‘pivot,’ Sean Michael Morris writes, “If possible, reach out to other students in your classes and create a support network. Use whatever digital means necessary to stay in touch.”

Ultimately, our ability to develop hybrid and online community will also depend on our ability to continue feeling joy, have epiphanies, ask hard questions, and share our curiosity with one another. That will only be possible if we start all of our work from a place of care. ►

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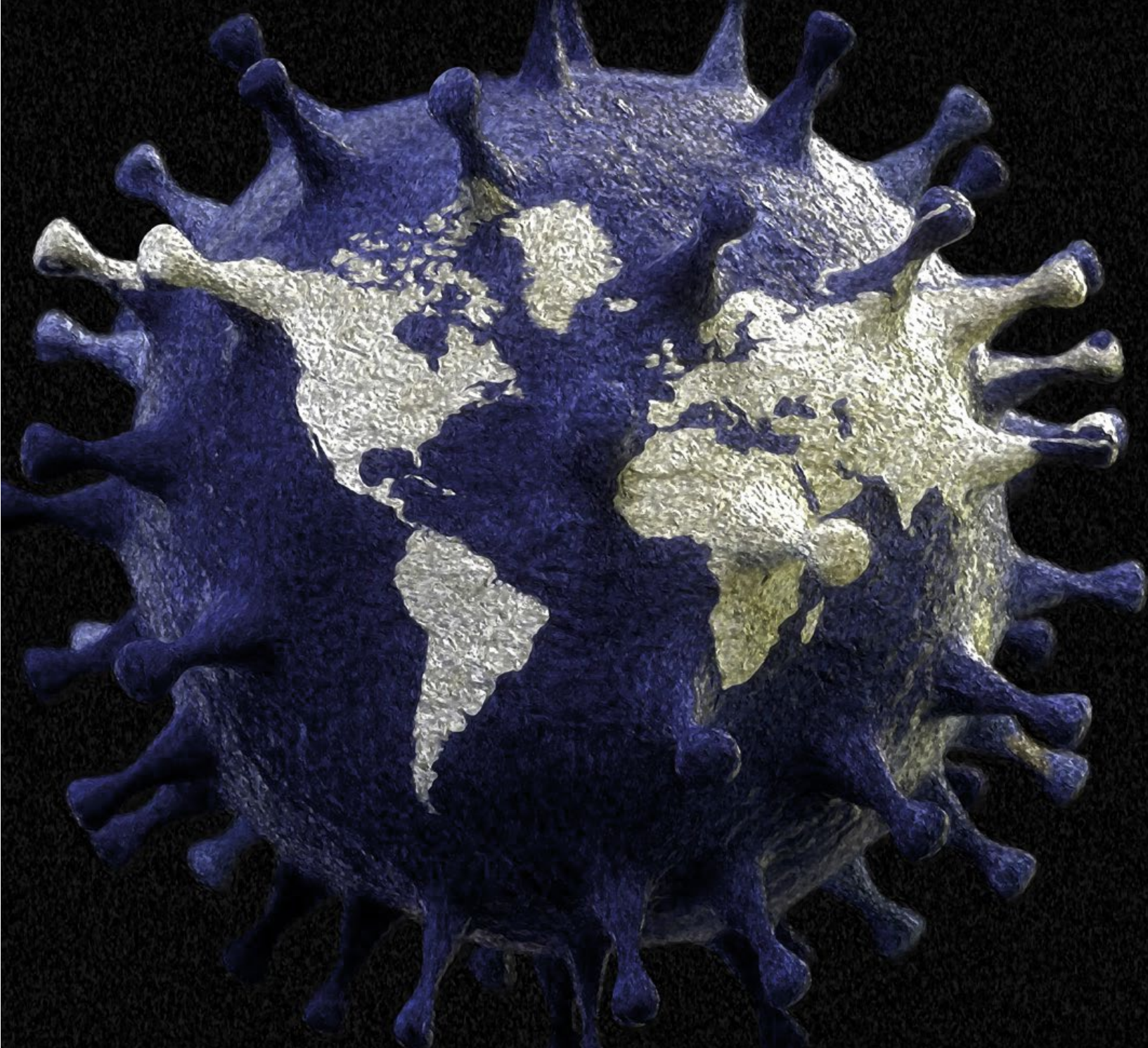
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PANDEMIC COURSE

<https://framerspace.com/course/pandemic>





Facilitating Parent Involvement in Distance Learning

SEAN SMITH



Sean J. Smith, Ph.D., is a Professor in the Department of Special Education at the University of Kansas. Dr. Smith's research interest focus on innovations and technology solutions to support struggling learners and those with disabilities, particularly interventions aligned with the Universal Design for Learning (UDL) Framework. Sean has authored over 100 books and articles, given hundreds of scholarly presentations both nationally and internationally, on ways to integrate digital solutions into the lives of all learners.

The COVID-19 pandemic altered teaching and learning as we know it in dramatic ways. Teachers suddenly found themselves trying to educate their students remotely at home. Familiar structures were disrupted in this new distance learning mode. Without the routines and structures of school and classroom, students were suddenly expected to navigate new modes of learning from home.

In addition to the sudden change for students and teachers, distance learning required parents to change their roles as well. Parents inadvertently found themselves working in tandem with teachers to create new structures and routines for learning to occur at home. Teachers had to rely on the adults at home to ensure that students were ready and available for instruction. Parents were often in charge of ensuring that their children understood and engaged in activities and assignments. Many parents found themselves wearing multiple hats, in the role of master organizer, director of engagement, learning coach, and classroom designer.

The need for parent involvement in remote learning does not come as a surprise. Fully online K-12 schools have been in existence for a few decades and provide models of best practices for remote learning (Smith & Basham, 2016). Existing K12 online schools have always emphasized the essential role of the parent and the need for direct parent engagement. For the elementary age child, this averages 4-6 hours a day and at the middle school level, at least 2 to 4 hours a day (Digital Learning Collaborative, 2019). As we prepare for a new normal that includes distance learning scenarios (e.g., remote, blended), we can begin by ensuring that teachers and parents have ways to work together to support their learners.

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Outline Roles and Responsibilities

In distance learning scenarios, it is ideal if teachers and parents can work as partners to ensure student success. However, we must acknowledge that parents and family members have various obligations and commitments. Not every parent has the time, agency, or flexible work schedule to allow full involvement. The intent of these recommendations for home-school connections is not to overburden already busy parents, but to outline some considerations for collaboration between parents and teachers. Schools can lay the groundwork for home-school connections, with the knowledge that parents’ abilities to engage will vary depending on their circumstances.

As a first step, the teacher can take the lead to identify areas where supports are needed and communicate that clearly to the parent. This may include outlining what the classroom schedule is like and specifying how parents can assist.

As a first step, the teacher can take the lead to identify areas where supports are needed and communicate that clearly to the parent. This may include outlining what the classroom schedule is like and specifying how parents can assist. For example, if the teacher expects students to meet online at a certain time, it is important to ensure that the parent knows the schedule and will help ensure that the student will be online. Together, teachers and parents should identify their preferred ways to communicate and establish when and how often to connect. Creating pathways for parent involvement can require time and flexibility, but ultimately benefits all involved by ensuring that students are learning and teachers’ efforts are being supported.

There are many ways that teachers and parents can communicate. Video conferencing (e.g., zoom) became one popular format during the pandemic, but there are other formats that may be easier to manage with busy schedules. For example, email allows us to communicate essential information without having to be available at the same time. Using email, teachers can send regular messages that include information on goals for the week, student expectations, links to resources, and other relevant information keeps the home informed. For students who need extra support, teachers can follow up with calendar reminders, text message prompts, timely phone calls, or weekly teacher office hours or scheduled meetings which allow for specific problem solving.



Improve Home-School Communication

Home-school communication is often focused on giving parents a report of the child’s progress. Teachers have information on the child’s performance on academic tasks, behaviours observed at school and interactions with peers. In the distance learning scenarios, the parent is now the one who can observe these things and share what they see at home with the teacher. This lets the teacher know what is working and what is not. Parents can provide important information on what instruction is working and what is challenging. They can let the teacher know whether the child is engaging and what supports they need instructionally.

Teachers can also guide parents in giving them information they need in order to plan and implement instruction. Teachers can inform the parent about upcoming assignments, instructional goals, and potential challenges that students might have. They can share learning strategies and instructional tools that will facilitate learning, especially if the parent is able to act as a coach or tutor at home. Teachers can also help to problem solve, coach, and offer needed support to facilitate the learning expectations from afar.

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Empower Parents/Family Members

We often hear the phrase “It takes a village to raise a child.” Especially now, in distance learning scenarios, empowering the parent or family member is critical. Teachers may not be trained in parent empowerment methods, but they are not complicated to learn. A first step to parent empowerment is awareness on the part of the teacher. Teachers can identify home expectations, just as they already identify classroom ones. For example, in distance learning scenarios, teachers will require a certain level of learning to be taking place at home. With this expectation, educators need to consider, “What barriers might exist at home the student’s due to this new expectation? How should we plan to address these barriers (e.g., student engagement, completion)? What support do I need from the parents how can I facilitate the parent’s role to ensure success?” Based on the responses to these questions, teachers can develop a set of strategies to support both the parent and the student, identify ways to design lessons to reduce confusion or content barriers, and integrate proactive methods to support learning at a distance.

Conclusion

This article has provided recommendations for empowering parents to work in tandem with teachers in distance learning scenarios. The expectation is not to transform the parent into a teacher. **Teachers have a level of knowledge and expertise gained from years of study and professional application that parents do not.** However, by considering how parents can facilitate the learning process at home, teachers can recruit parents as partners and “learning coaches”. Parents can reinforce ways to prioritize learning tasks, reduce distractions, support learning goals, and create optimal learning environments at home. With thoughtful planning, design, and communication, teachers and parents can ensure that learners have the structures and routines to learn in the classroom and at home.

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Overcoming Uncertainty of COVID-19 in the *Citizen Science (more specifically GLOBE) Community*

TONY MURPHY



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In 2012, Murphy became director of the GIO. Prior to this, at St Catherine University, he served as the Associate Dean of Education and founded the National Center for STEM Elementary Education. He also served as the director of A Thousand Friends of Frogs Project at Hamline University, Minnesota.

When 2020 arrived, many of us imagined that the year would be a special one. **We may have thought of it as symbolic, as in “20/20 Vision” -- a year that we might see our lives, and perhaps even the future, more clearly.** Who could have predicted what was about to happen--a global pandemic that would overturn and unsettle our entire world in a matter of months. As the virus began to spread quickly across the globe, local and national governments started to impose numerous limitations on daily life, including school closings and movement restrictions in areas.

Many institutions had very little preparation time to respond to the increasingly deteriorating situation. One of the largest sectors was education and while certain schools and universities may have been prepared for aspects of the pandemic, they were not prepared to transfer all teaching and learning to online environments. **Online learning may be conducive to specific subjects, others are more difficult to achieve in this environment, particularly without a lot of preparation time or**

resources for teachers and students. Science is one of these areas and while many virtual resources exist to help in the teaching of science in class and online, many of these were not easily located nor transferred onto sites that teachers could access. However, as the seriousness of the situation began to grow many government agencies around the world stepped up to create collections of materials for science teachers. These included National Aeronautics and Space Administration (NASA) (<https://www.nasa.gov/specials/nasaathome/index.html>), National Science Foundation (NSF) (<https://beta.nsf.gov/science-matters/seven-nsf-supported-stem-resources-are-perfect-home-learning>), as well as Google resources (https://edu.google.com/teaching-resources/?modal_active=none&topic=stem) and European Union (EU) resources (https://ec.europa.eu/education/resources-and-tools/coronavirus-online-learning-resources_en).

Of course, not all science is conducted indoors; the area of citizen science has a mix of inside as well as outside and has been growing in popularity over the last decade. **Citizen science is defined as the collection and analysis of data relating to the natural world**



by members of the general public, typically as part of a collaborative project with professional scientists (https://www.lexico.com/definition/citizen_science). There are over 3,000 citizen science projects globally ranging from collecting earth science data (such as the GLOBE Program) to those that gather bird data (Christmas Bird Count) to projects reaching for the stars (Variable Star Zoo). For all projects, they at least require the collection of data, and many do encourage analysis of data, some even organize symposia for students to report research they have conducted with the data, either in person or via websites. Many projects now have apps that can be downloaded for free, these assist greatly with data collection, both in the quantity and geographic distribution of data. In order for student learning to

be at its maximum, the complete cycle of developing a research question, collecting and analyzing data, and communicating results need to be present. These are all best practices of citizen science and student learning.

However, during this time of COVID-19 two aspects need to be borne in mind; the safety precautions that need to be taken (no person should put health at risk to collect data) and locally imposed movement restrictions, which allow people to travel only certain distances. For some measurements and projects, it may be possible to collect data from inside the home or by remaining very close to one's home or in the backyard. **While collecting data is important for projects and the scientists working on them, no project would want to**

Citizen science is defined as the collection and analysis of data relating to the natural world by members of the general public, typically as part of a collaborative project with professional scientists

put a person's health in jeopardy.

At this time, some projects have shifted their emphasis from the collection of data to their analysis, which is a very positive move for citizen scientists as it pushes them along the scientific research process. Projects have developed webinars for their audiences that walk them through the



This app (GLOBE Observer) allows data for specific protocols to be submitted and is being expanded to allow data entry for all science protocols in the program. The program collaborates with NASA and other space agencies to run student campaigns that focus on data collections and analysis.

importance of data analysis as well as how to conduct these analyses. The webinars, many for student citizen scientists, have even focused on developing research questions so that while students are at home, they can develop such questions and using existing citizen science data, do original research.

An example here is the GLOBE (Global Learning and Observations to Benefit the Environment; www.globe.gov) program, a 25-year-old worldwide citizen science and education program, which encourages students and now citizens to collect earth science data and partner with scientists to work together to better understand, sustain, and improve Earth's environment at local, regional, and global scales. GLOBE has a strong community that actively interact through meetings, student and teacher exchanges, scientific events as well as online communications. While traditionally aimed at schools, the program has expanded to citizen scientists through the release of an app, GLOBE Observer. ***This app allows data for specific protocols to be submitted and is being expanded to allow data entry for all science protocols in the program. The program collaborates with NASA and other space agencies to organize student campaigns that focus on data collection and analysis.***

However, once COVID-19 became a pandemic the focus of the program shifted from data collection (because many of the 123 countries involved in the program had imposed local movement restrictions) to data analysis. This pivot was supported with webinars about retrieving and analyzing data from the GLOBE database and other databases. In addition, over the last number of years, schools have begun to increase their instrumentation infrastructure so that data can be recorded automatically, which in this type of situation is a wonderful back-up for student collected data.

One of the other challenges in this situation is ensuring that every student and citizen scientist has equal access to submitting and retrieving the data within a system. Given that most citizen science projects have apps and technology of some form as part of their infrastructure, it is very important that project planners are mindful of the digital divide, which is still present in many areas around the world. Keeping this balance of upgrading and advancing technology for science citizens who may still be battling connectivity and technology updates is very important to the success of a project. Frustrations can often run high with technology; it should really enable engagement and involvement, not disable it. Global projects can find this particularly difficult as the range of technology infrastructure can vary significantly between and even within countries.

With an active community, such as GLOBE's, it is important to keep it engaged, no matter the circumstances. As COVID continued, the GLOBE Implementation Office (GIO) sought to maintain this engagement through its online infrastructure. It supplied its Regional Coordination Offices (RCOs), located in Africa, Asia and Pacific, Europe and Eurasia, Latin America and Caribbean, Near East and North Africa) with a web-conferencing tool. The RCOs has since held monthly calls with the GLOBE Country Coordinators (CC) in their regions; these have proved incredibly successful and have been highly subscribed to by the CCs. As all in person meetings has been cancelled, these calls help keep the community informed and engaged; the high participation levels clearly show that it wants this type of contact. As for students and teachers, analysis of GLOBE data has shown that there is little change in data entry for student collected data, pre-COVID and while the pandemic continues. This again shows how engaged the

community is and wants to be. Finally, as part of the program's first ever interactive virtual community annual meeting, the GIO asked students to submit videos where they answered the question: What changes are you seeing in nature during the COVID-19 pandemic? Their observations are shown here: https://www.youtube.com/watch?v=kCMyb5Koq7E&list=PLfpnkASII_Na-hmvmqCcjaKSTZqdQ6tym&index=5

In summary, overcoming uncertainty in a citizen science community in a situation such as this is based on

- reaching out constantly to your members by whatever communication strategy works best for your project and community to reassure them that the project is still present and operating as normal as possible;
- being honest with the community about the impact of the situation on the project;
- encouraging engagement through data analysis, and data collection, only if safe and not contravening local movement restrictions;
- creating or gathering additional resources for your community and sharing them;
- trying to decrease the digital divide, if possible; and
- assisting your community to raise funds to build the project's infrastructure in the community so that data may continue flowing in times like this.

(The last two points are areas that should be worked on continually and especially in 'normal' times. However, many foundations are stepping up realizing the impact the pandemic is having on many communities and, in some cases releasing more financial resources, so that communities and projects can respond to issues like the digital divide.)

The important point to remember here, is that this pandemic will pass at some point, and we will all get back to some form of normality. For now, many citizen science projects have altered a number of practices to keep citizens safe, yet engaged in various ways. They will continue to work, as they are, with communities and scientists in the collection and analysis of data to help us all understand the scientific process and our planet (and perhaps our universe) better. ►



How Games Connect Us

MATTHEW FARBER, Ed.D.



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In 2018, 55% of frequent game players reported that they played games as a way to socially connect with friends and family (Entertainment Software Association, 2018). As we stay home during the current COVID-19 pandemic, that number is now quite likely much higher.

Last spring, the World Health Organization (WHO) partnered with video game publishers to launch #PlayApartTogether, an initiative to promote social gameplay during the lockdown. Game companies helped spread the message of staying home, washing hands, and physical distancing. Shortly after its start, the campaign gained over “4.7 billion consumer media impressions worldwide” (Takahashi, 2020, para. 1). In addition to online video games, many people play board games together over videoconferencing apps like Zoom and Skype as a way to connect. We play to connect with one another. It’s what makes us human.

An Opportunity to Teach SEL Together

When we play games together, we practice social and emotional learning (SEL) skills like self-regulation, goal-setting, perspective-taking, and responsible

decision-making. At first glance, teaching SEL skills with games may seem like an elegant, silver-bullet solution to teaching and learning. After all, games can teach, engage, and assess. But we must be careful not to use games as instruments, or as educational technology tools. Games are best thought of as shared experiences for children, more like impossible field trips where learning can be framed and contextualized.

Like other forms of media used as teaching tools, games have their strengths, but also their limitations. Let’s use the math game Slice Fractions as an example. In the game, the goal is to help an elephant get across the screen by slicing objects with your finger. As players slice, fractional notations display. The game is literally teaching fractions experientially through cycles of play and game-based assessment.

But something curious happened when my 10-year-old son played. When I showed my son fractions written out on paper, he could not solve them. He lacked context on his own to transfer newly learned (and seemingly mastered) skills to other environments. However, when I showed him both together—the game on the tablet alongside fractional expressions—he was better able to make connections.



Like books, film, and other media we use in learning contexts, games cannot stand on their own as teaching tools without an educator, parent, or caregiver to mediate transfer of learning. But what makes games unique for learning is that educators can play along with students, teaching them as they go!

Like books, film, and other media we use in learning contexts, games cannot stand on their own as teaching tools without an educator, parent, or caregiver to mediate transfer of learning. But what makes games unique for learning is that educators can play along with students, teaching them as they go!

SEL Games to #PlayApartTogether

After playing basketball or cricket, players

(and onlookers) talk about the experience. **Many games lead to a discussion among players, which is known as the metagame—the conversations around and outside of the game itself. This is often where teachable moments reside. This is one of the reasons we play to connect to one another.**

Next, I share two games I use that promote metagame conversation around SEL skills, in particular, ethical decision-making with perspective-taking. Using games, these two skills can be taught in tandem, as players



take on roles and then consider outcomes in other personas and viewpoints free from real-world consequences.

First, let’s look at the card game Awkward Moment (<https://resonym.com/game/awkward-moment/>). The game, which takes less than 20-minutes to play, has three suits in its deck of cards. First are Moment cards, which have embarrassing but relatable situations. Moment cards say things like, “Your teacher calls on you when you haven’t done your homework,” or “There is a spider on your wall.” Reaction cards make up the second suit, possible responses to Moments. These include reactions such as: “Hide in a bathroom stall,” or “Say, ‘I meant to do that.’” There are 100 Moment cards and 284 Reaction cards in the deck.

The third suit is Decider cards. There are 48, which one player—who acts as the judge—selects. Decider cards state the guidelines required to win such as “Silliest,” “Most inappropriate,” or “Bravest.” Arguing who has the better combination is where this game comes to life. The game is a wonderful tool to get kids to talk about ways to handle awkward situations.

About 30% of the Moment cards are about gender bias. As it happened, Awkward Moment was designed by Tiltfactor in 2012, a game lab at Dartmouth College, funded by a National Science Foundation (NSF) grant. While it is commercially available at many retailers, the game’s design was “informed by psychological theory and research on stereotype threat and implicit bias; two powerful psychological obstacles that have been shown to reduce self-efficacy, persistence, and performance among members of underrepresented groups in STEM” (Awkward Moment Teachers Guide, n.d., p. 2). One Moment Card reads, “Your school’s math team is 100% boys.” Another states, “While shopping at the mall, you see a store is selling T-shirts for girls that say, ‘Math is hard!’” What would be the Bravest response? Or Most Assertive? After a round of play, ask children why they made those decisions. What would they anticipate a real-world response might be? Why do people sometimes not respond?

Now let’s look at a video game that also marries ethical decision making with perspective-taking: Quandary (<https://www.quandarygame.org>), from the Learning Games Network, a

nonprofit spinoff of the MIT Education Arcade. Designed to cultivate ethical decision-making, it can be played whole class, with the game projected on a screen, or by having a teacher screenshare when remote teaching online. When played in pairs, “the game can be a catalyst for discussions with complex moral themes” (Gee & Hilliard, 2017 as cited in Osterweil et al., 2020, p. 328). Used in classrooms for years, the game’s website has lesson plans aligned to content as well as SEL competencies. It promotes (not just teaches!) perspective-taking, ethics, as well as scientific inquiry.

In the game, players colonize the distant planet Braxos, narratively told through a series of graphic novel images. Similar to a card game, players read (and perspective take) arguments from colonists about issues. In resolving conflict, most—but never all—colonists will be satisfied.

In the first level, players learn that a sheep has gone missing. Perhaps it was attacked by a predator native to Braxos? Arguments are then heard at the Settler’s Meeting. Should traps or poison be set to catch or kill predators? Building traps takes up time and resources. Players are then informed that the predator may also be beneficial to keep around, too, as its saliva may have medicinal properties.

What would a Quandary game look like today, balancing the system of closing businesses in quarantine lockdown compared to arguments about safer reopening? What Reaction card might be Most Appropriate if an Awkward Moment pertained to seeing one of your friends not wearing a facemask in public?

After playing games—Quandary, Awkward Moment, or any game, for that matter—be sure to engage in metagame discussions. Then go farther with journaling, story writing, or game building. As a family activity, my son made his Awkward Moment. Then we played together. **Extending learning from games to other spaces is also a perfect classroom activity. First play a game, then engage in conversation. Those topics can then lead to making projects as an approach to deepen learning.**

Extending learning from games to other spaces is also a perfect classroom activity. First play a game, then engage in conversation. Those topics can then lead to making projects as an approach to deepen learning.

The key takeaway is that games of all kinds connect us. We may be physically distant, but there is no need to be socially distant. But playing games are not magic answers to remote learning, as children will always need help, guidance, and facilitation to transfer learning to the real-world. ►

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Pushing the Boundaries of the Traditional Classroom *through Project-Based Learning*

SUZIE BOSS



Suzie Boss is a writer and educational consultant from the United States who focuses on the power of teaching and learning to improve lives and transform communities. She is the author of 10 popular books for educators, most recently *Project Based Teaching: How to Create Rigorous and Engaging Learning Experiences and Reinventing Project-Based Learning: Your Field Guide to Real-World Projects in the Digital Age*, 3rd Ed. She collaborated with award-winning teacher Stephen Ritz to tell his inspiring story about creating green classrooms in *The Power of a Plant*. Connect with her on Twitter @suzieboss

For millions of children around the world, the COVID-19 outbreak dramatically changed how, where, when, and with whom they learn. Almost overnight, their schools stopped being physical gathering places and instead became conduits for remote learning.

It's too soon to measure the impact of this seismic shift. Standardized assessment and even grading have been suspended in many countries.

Results for learners are certain to be uneven, however, with inequities exacerbated by everything from access to technology to family stressors such as illness or job loss. Some students have had to become family breadwinners or caretakers of younger siblings, leaving little time for schooling. But while many students will experience learning losses as a result, others may actually make academic gains. (Kuhfeld et al., 2020)

An Opportunity to Innovate

Around the globe, the pandemic has put a spotlight on the readiness of educators to innovate. Here, too, results have been uneven.

With little time or training to prepare for remote learning, some teachers have clung to the most traditional methods. Their online lessons have emphasized lectures, content review, and worksheets instead of student inquiry, collaboration, or creativity. Despite the opportunity for more personalized learning, some schools have kept to the same rigid bell schedules and siloed learning that their students experienced in brick-and-mortar settings. Was it any surprise when student engagement suffered? (Goldstein, Popescu, & Hannah-Jones, 2020)

As the weeks of school closures continued, however, bright spots began to emerge. As a longtime advocate of project-based learning (PBL)—an instructional approach in which teachers guide students through in-depth inquiry experiences—I was encouraged by examples of students learning by responding to the very challenges that have upended their lives.

EXAMPLES OF
'PROJECT-BASED LEARNING'

SPAIN

Students used the quarantine as an opportunity to produce video tours of their homes and neighborhoods to help Spanish language students in other countries improve their fluency. Their online audiences responded in kind, creating cultural exchanges that crossed geographies and time zones.

CHENNAI, INDIA

Students channeled the emotions caused by the pandemic to create original artwork, which they shared (along with their artists' statements) in virtual exhibitions. One project asked students to respond to the driving question: "What do you need people to know about this moment in time and how will your art demonstrate it?"

BEIJING, CHINA

Students in Beijing, China, who had prior experience with online learning leveraged their expertise to produce tutorials, animations, and other resources to help newcomers adapt to e-learning.

UNITED STATES

Elsewhere in the U.S., students applied their understanding of STEM—science, technology, engineering, and math—to design and produce face shields for medical workers using 3D printers.

UNITED STATES

Students led a nationwide campaign to share appreciation for medical teams and other essential workers. Harnessing creativity and collaboration, they created public art, led letter-writing campaigns, and produced a music video featuring youth voices from across the country.

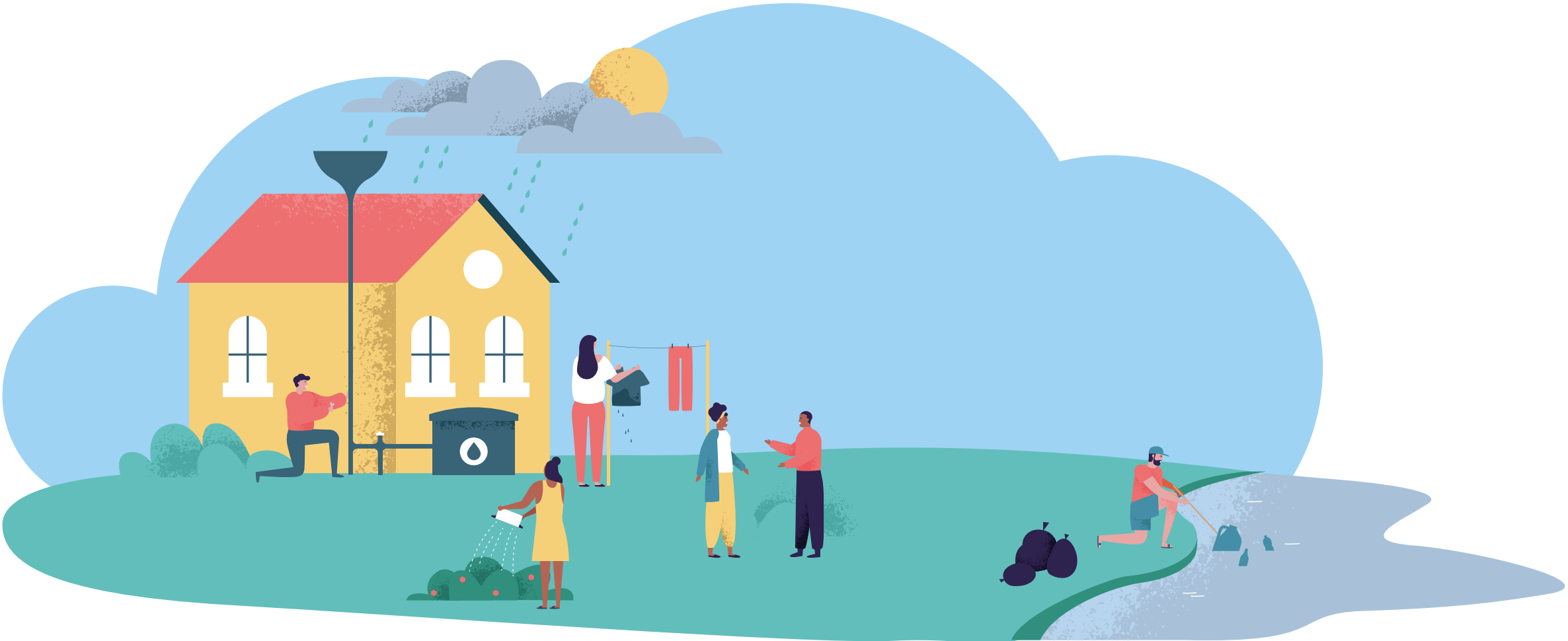
Features of Effective Projects

Although these examples differ when it comes to students' ages, contexts, and academic outcomes, they share common features. These features set the stage for high-quality learning experiences, whether they unfold face-to-face or online.

Guided learning: Behind each successful project, there's a teacher (or teaching team) guiding the experience. Instead of telling students to "go do a project" while learning from home, PBL teachers start with a plan. Even the most open-ended projects have clear learning goals and checkpoints along the way. In response to students' questions, teachers curate resources and plan activities to build understanding. As a project progresses, teachers guide students to create products or solutions

that showcase their learning. Throughout the experience, students receive frequent feedback—from teachers, fellow students, and sometimes outside experts—to help them reach their goals as learners.

Authenticity: The litmus test of a good project is that students stop asking, "When will I ever need to know this?" Instead, the project connects learning to authentic issues or challenges that matter to students. With their lives disrupted in countless ways, projects can inspire students to think critically about the pandemic. For example, some students have been documenting life during COVID-19 as primary source material for future historians. Others have applied math concepts to predict when their communities will be safe to reopen, or taken on the role of financial planners to help struggling businesses recover, or become game designers to



keep family and friends physically active during the shutdown. For science teachers, daily headlines have become a source for inspiring inquiry about everything from genetics to vaccine development to hand washing. As one veteran teacher told me, “Meeting students where they are has never been more significant than right now.”

Public audience: Projects typically end with a public showcase of learning. When students share their work—and the thinking behind it—we tend to see increased engagement and higher quality products as a result. Having an audience for student work remains critically important, even if the format has to shift. That might mean a town hall via videoconference instead of in person, or low-tech posters displayed in public spaces to educate communities about health issues. Viewers of student presentations might submit questions or responses via email or online forms to provide students with meaningful feedback.

PBL via remote learning is not without challenges. Becoming proficient at PBL takes time, reflection, and, often, professional development to acquire strategies for student-centered learning.

The COVID-19 crisis came on so suddenly that teachers had no time to build new toolkits or collaborate with colleagues on project planning. Many teachers who were successful in this new context had prior experiences with PBL. They had already cultivated a positive classroom culture that carried over into online learning. Even more importantly, previous projects had helped their students develop the skills to ask good questions, collaborate effectively, and build the mental muscle to persist when challenged.

As we look back on this remarkable moment in education, I hope we recognize that PBL teachers are modeling what it means to be creative, flexible, collaborative, and resourceful citizens—everything we hope to encourage in our students.

Let’s close with one more example.

Before the virus reached the coastal community of Tacoma, Wash., in the U.S., elementary students were already working on an interdisciplinary project to improve water quality for migrating

salmon. Then COVID-19 hit. When the school went to remote learning, teachers shifted gears so that the project could continue from home. To ensure that technology access would not be a barrier, library books were delivered to each student’s doorstep. Instead of going on a class field trip, students took a virtual tour of the waterfront narrated by experts from a local organization. Instead of doing science experiments in their classroom, students gathered water quality data in their own neighborhoods and backyards, sharing and analyzing test results like citizen scientists.

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Kuhfeld, M., Soland, J., Tarasawa, B., Johnson, A., Ruzek, E., and

When they were ready to present their recommendations for water quality improvements, they hosted a virtual town hall for their community. Their project hit all the high points of authentic, engaging, student-centered learning, and inspired reflections from students and teachers alike about learning in new ways.

For those who have long dreamed of school transformation, the pandemic is offering glimpses of what’s possible when we rethink how, when, where, and with whom our students learn best. As we move into an uncertain future, we can build on these examples to create a new normal for students worldwide.

PBL Resources

Schools around the world have adopted the Framework for High Quality PBL. Describing effective PBL from the student perspective, the framework calls for six essential ingredients: (1) intellectual challenge and accomplishment; (2) authenticity; (3) public product; (4) collaboration; (5) project management; and (6) reflection. A research brief, “Defining High Quality PBL: A Look at the Research,” explains the reasoning behind the framework.

PBLWorks, a nonprofit organization based in the U.S., has created a set of resources for PBL in remote settings. Additional online resources include video case studies of projects, a searchable project library, and a blog featuring teacher reflections about project experiences.

EL Education, a network of PBL schools, curates a library of high-quality student work called Models of Excellence. ►



COVER
STORY

Changed Priorities Ahead: Designing for Online Learning Environments



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Kavita's work focuses on instructional and assistive technology, Universal Design for Learning (UDL), culturally and linguistically diverse learners, and online learning. She has worked extensively with schools and teachers in Asia and the Pacific, supporting efforts to integrate technology and create inclusive learning environments. She is interested in exploring ways that digital tools can help to reduce learning barriers and support student achievement in the classroom. She has published numerous articles and book chapters on technology and UDL, most recently the book UDL for Language Learners.

The term “online learning” conjures up images of students working on their computers, engaging in learning activities and having dynamic interactions with peers and teachers using various digital means. In the ideal online learning environment, students work seamlessly in different formats and use a variety of resources, appropriate to the learning tasks they are engaging in. They work independently on some activities, get guidance from their teacher at times, and have opportunities to collaborate with peers. They complete activities and assignments using digital tools that support and enhance the learning process.

Creating these types of online learning experience requires teachers, administrators, and parents to have knowledge and skills to design learning in new and different ways. **In March 2020, educators collectively experienced the challenges of a rapid shift to distance learning (DL) at an unprecedented and global scale.** Around the world, educators moved instruction, at a K12 and post-secondary level, into virtual learning modes with very little opportunity to prepare. While this emergency shift to DL was not ideal, it gave us a glimpse of what we can and should be prepared for in the future. For many, the experience showed us what worked and what did not work in our attempts to teach and learn online. Now as we look ahead, we can reflect on what we learned during the rapid shift to teach online, and be more prepared for future distance learning experiences.




COVER
STORY


Sidebar 1:

KEY TERMS ASSOCIATED WITH
DISTANCE LEARNING


There are various terms associated with distance learning, including: e-learning, online learning, and digital learning. Distance Learning can include a range of formats, from no tech to digital learning. This cover story focuses on online learning, that integrates digital tools and connectivity. Some key terms associated with digital learning include the following:




E-LEARNING
General Term for Technology Enhanced Learning




ONLINE (ALSO DIGITAL OR VIRTUAL) LEARNING
Instruction delivered in an online environment through the use of technology-enhanced modes and the internet



HYBRID OR BLENDED LEARNING
Instruction that combines online and face-to-face modes of instruction



ASYNCHRONOUS
Learning activities that takes place on one's own time, for example, independently reviewing materials posted in a course management system, participating in an online discussion forums, blogs, and podcasts.



SYNCHRONOUS
Learning activities that take place with others online, for example via web conferencing or other synchronous e-learning media

Sources: International Association for K12 Online Learning (2011); Singh & Thurman (2019)

Where do we begin?

This past year, we experienced a rapid shift to distance learning, making the transformation quickly and without the time for thoughtful preparation. As we look ahead, we can consider what we learned and how we can be fully prepared for the educational environments of the future. Even when we return to face-to-face modes in the classroom, the distance learning experience during the pandemic has given us an opportunity to think about when and how to integrate online and hybrid learning modalities along with traditional instruction. Policymakers, administrators, teachers, students, and parents can all be better prepared for different approaches to teaching and learning.

Where do we begin this huge undertaking? First, we must consider the varied modes of distance and online learning. **Teachers and students will have different levels of access to tools and technology. The key to good distance and online learning is knowing how to use these tools purposefully to create meaningful learning experiences.** At a minimum, teachers should be prepared to put together instructional experiences for their students to do remotely, with little or no access to online tools. In scenarios where teachers and students have access to internet and/or laptops and mobile devices, teachers can also incorporate synchronous connections (e.g., meeting online at the same time). In scenarios where regular or reliable internet is not available, teachers can prepare asynchronous experiences that allow students to work at their own time online or offline. These options vary greatly, however we can prepare for these scenarios by building capacity for all stakeholders involved in distance and online learning.

To prepare our students, their parents, and educators for this new way of learning, we can start by thinking about how to be intentional as we plan for the range of distance learning scenarios that can include hybrid/blended and fully online learning modes. There are many important questions to consider: How can we reach our learners who may not have tools and access to resources? How can we be sure to support students with disabilities and students who are marginalized? How can we support teachers to have the skills to “do” distance and online learning? How can we prepare parents to best support their children, if and when they have to learn from home?

To prepare our students, their parents, and educators for this new way of learning, we can start by thinking about how to be intentional as we plan for the range of distance learning scenarios that can include hybrid/blended and fully online learning modes.

Distance Learning
Readiness Considerations

There are various pre-requisites for effective online teaching and learning to occur. An important starting point is to consider the people involved, the stakeholders who are key to the whole educational endeavor, including the teachers, students, parents, and administrators. The next essential piece is an understanding of tools, resources, and design, which are the core of the processes that enable us to teach and learn. Last, but not least, there are considerations for the big picture, namely the structures and services that have to be in place for effective online learning (See Sidebar 2).

Sidebar 2: Overview of Distance Learning Readiness Considerations

This table presents the key areas to take into consideration in preparation for Distance Learning. The full Distance Learning Readiness Considerations Checklist can be found here: Distance Learning Readiness Considerations Checklist

| PEOPLE | TOOLS, RESOURCES AND DESIGN | THE BIG PICTURE: STRUCTURES AND SERVICES |
|------------------|-----------------------------|--|
| Teachers/Faculty | Digital Tools for Teaching | Distance Learning Plan |
| Students | Digital Tools for Learning | Communication |
| Parents/Families | Learning Resources | Supporting Students with Disabilities Online |
| Administrators | Design Knowledge | Culturally Responsive Instruction Online |

Source: School Virtually website (<https://schoolvirtually.org/distance-learning-readiness-considerations/>)

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It takes time to lay the groundwork for effective online instruction. As educators we can begin by setting short-term goals for our specific scenarios. If you are an administrator, identify how you would address a few of the areas related to structures and services. If you are a teacher, ponder which areas you would benefit from learning more about. If you are a parent, think about how you can help your child prepare for online learning. Download the full Distance Learning Readiness Considerations Checklist, which provides a starting point to current levels of readiness and establish some short- and long-term goals to build capacity.

Designing the Online Experience

Online learning resembles instruction in a traditional classroom in the same way that a movie resembles a play on a theater stage. While there are some similarities, there are also big differences. Just as a movie requires crew and actors to have skills that are different than those of a play, online learning requires teachers and students to use techniques that go beyond those of a traditional classroom. Just as a movie requires different production techniques than a play, online instruction requires us to rethink face-to-face pedagogies.

All learning experiences require design. Whether you are creating a face-to-face, blended/hybrid, or fully online experience, some basic design principles are common across learning environments (Sun & Chen 2016). It is necessary to identify what you expect students to

master, and then to make decisions about how to deliver a learning experience that gives students the opportunities to engage, connect, and learn.

Online learning resembles instruction in a traditional classroom in the same way that a movie resembles a play on a theater stage.

To design a learning experience well, teachers must have knowledge and skills as well as time to take into consideration what their end goals are, what tools they can use, and how to guide their students on a journey. Recently, during the unprecedented shift to online and distance learning, teachers worldwide did a valiant job of using numerous digital tools, creating packets for students who do not have access, reaching out to students who were homebound, and figuring out ways to connect and instruct without seeing their students face to face. They made this switch instantly, with no notice. Now with time to reflect and plan, we can consider some key principles of instructional design that teachers can be ready to use.

Three Essential Considerations for Online Learning

Whether we are teaching online or in a traditional classroom,

one thing remains a constant – we need to engage learners and give them ways to learn and master content. Distance and online learning formats vary depending on the what we are teaching, who we are teaching and the resources we have available, but awareness of some key design principles can be useful for all variations on the online learning environment.

1. Design for your learners

Although it is self-evident that we should start designing instruction by thinking about our learners first, it can be easy to focus initially on the content, tools and delivery formats as we make the move to distance and online learning formats. However, the decisions on how we teach and the tools and strategies we use should be driven by what our learners need. Teachers can use a step by step process to first consider their goals, consider the skills needed by students to reach the goals, identify the barriers that may exist to reaching the goals and then planning how to teach content accordingly. Universal Design for Learning (UDL) provides a useful framework for teachers to consider as they design for online instruction (Rao 2019). Using UDL guidelines (CAST 2018) teachers can make determinations about when and how to provide various options for representation, give students varied ways to demonstrate and express

what they know and to engage students in authentic and relevant ways.

2. Organize the experience

One of the biggest shifts of distance and online learning is that instructional time is no longer the same. Whereas teachers are used to standing up in front of a class for an hour to lead a lesson, in the distance and online realm, lessons no longer require the same type of time. For example, you might assign an independent activity that takes twenty minutes, followed by an opportunity to meet together online to discuss. Or you might have students work collaboratively using cloud-based digital tools (e.g., Google Docs) or apps that allow students to share information in various formats (e.g. Padlet, Educations, Flipgrid). In distance and online instruction, lessons may occur in smaller chunks. A long lesson can be broken into several mini-lessons to ensure that students are learning and demonstrating what they know in incremental ways.

3. Connect with your learners

Human interaction and guidance is essential for learning. In the distance and online learning environment, staying connected to the teacher can be an important aspect of persistence and motivation for many learners. Stay connected with your students by integrating regular points of connection and communication. This can be achieved

through synchronous meetings online with the whole class, through small group or individual sessions periodically, or “online office hours” where students can drop in. If those modes are not viable, you can also interact asynchronously with students, by providing meaningful feedback in small ways. For example, have students use collaborative documents online to build their assignments and provide ongoing feedback on the document. The key is to provide timely responses, that let students know that you are monitoring their progress and aware of how they are doing

Conclusion

Teaching in distance and online modes requires new skill sets that most of us were not trained for. We find ourselves at a unique point in time when learning, working, and connecting online have suddenly become the norm. Just as we have collectively adapted to new and emerging digital tools and communication modes in the past few decades, we are now at a point where it is essential to integrate new modalities for teaching and learning. The pandemic has given us the thrust and accelerated this transformation; for educators around the world, there is a clear call to understand how to foster equity and serve all studentt only in our traditional classrooms but also in distance and online modes of learning.

Sidebar 3:



SCHOOL VIRTUALLY: SUPPORTING ALL LEARNERS ONLINE

The School Virtually website (www.schoolvirtually.org) provides information for Educators and Parents/Families to help with the shift to distance learning formats. The School Virtually website focuses on ways to create inclusive learning environments for all learners, including students with disabilities and students from diverse cultural and linguistic backgrounds. The Educators section of the School Virtually website provides tips for designing instruction using universal design for learning principles. Teachers can find an Online Learning Experience Design Worksheet to help organize lessons into smaller chunks and create meaningful activities and interactions. The Educators section also describes various digital tools that can be used to engage and support students in distance/online learning. The Parents section of the School Virtually website, provides information on facilitating home-school connections and helping parents create structure and support their children in the distance and online learning environment.

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Scaling Up Environmental Actions *through* Global Online Learning Communities

MARIANNE KRASNY, YUE LI



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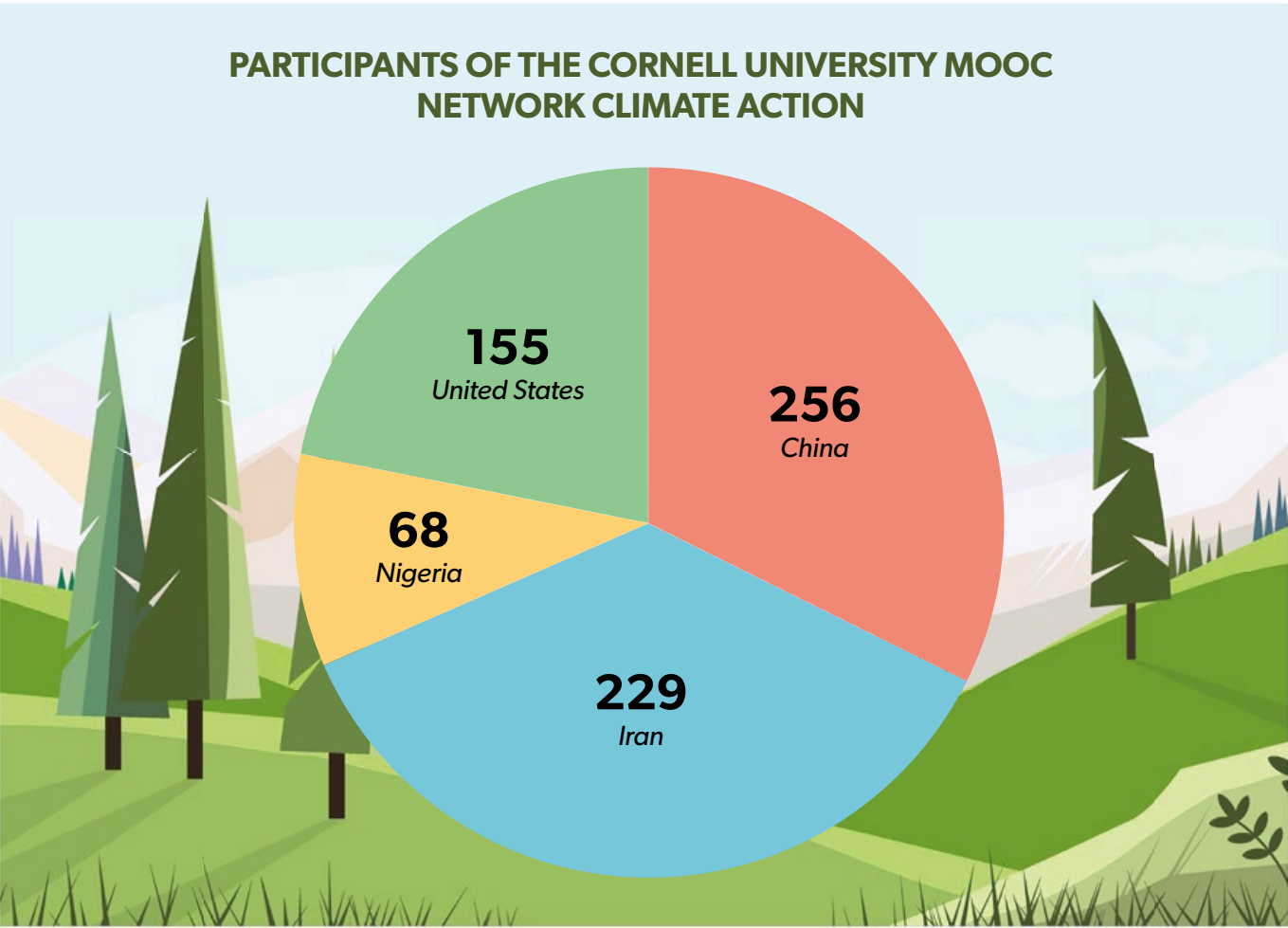


Yue Li is a research associate and online course instructor at Cornell University. Her research focuses on how networking among diverse environmental educators in online learning communities fosters innovation in their environmental education practice. Yue is currently conducting online experiments in MOOCs to explore the impact of social-psychological interventions on participants’ learning outcomes. She also examines university students’ engaged learning through serving as teaching assistants for MOOCs that serve a global audience, and how faculty across disciplines integrate online technologies into their engaged teaching practices. Through international research and outreach programs, Yue is bridging environmental education communities in China, the US and elsewhere.

Can you imagine an online learning experience where participants feel they belong to a community? As we shift our thinking from community defined by physical boundaries, to community defined by interests, concerns, and identities,¹ what kinds of online learning experiences are we creating? And what if, instead of assuming online education is inferior to education as usual, we re-imagine its possibilities in a global world impacted by a global pandemic?

Covid-19 has shocked all nations—but in different and unpredictable ways. One thing we know is that the crisis has been especially brutal for citizens of Iran. Yet in a recent Cornell University MOOC, “Network Climate Action,” we had 229 participants from Iran, along with 256 participants from China, 155 from the US, and 68 from Nigeria, all countries that have been hit hard by the virus.

Despite the raging pandemic, we gathered together for a cause: use social influence strategies to scale up the impact of our individual climate actions. The MOOC presents an alternative to polarized thinking that has left many feeling paralyzed: one side fervently believes in individual actions,



Climate actions can include replacing meat and dairy with plant-based foods, reducing food wastes, or even donating money to an organization that supports the right of women to control the number of children they have

while the other declares that individual actions shift blame away from the real culprits—multinational, climate-denying corporations.

Network Climate Action recognizes that many of us want to reduce our greenhouse

gas emissions, but feel stymied when reminded of the chasm separating what little influence one person has versus the massive scale of the climate crisis. Our solution is for each of us to take climate action ourselves and influence our social networks to also take action. **Climate actions can include replacing meat and dairy with plant-based foods, reducing food wastes, or even donating money to an organization that supports the right of women to control the number of children they have².** Social networks can be family, friends, or colleagues, and we can connect with them in person, online, or a hybrid of both. We can think of these networks as our “local” communities. If we can influence our network to take

climate action alongside us, we are no longer acting solely as individuals; rather our influence has expanded beyond ourselves to our community. While we still can’t absolve fossil-fuel corporations of their sins, opportunities to hold them accountable vary across Iran, China, the US, and other countries. In contrast, nearly anyone can reduce meat consumption, bike or walk more often, or take any number of the myriad actions that draw down atmospheric greenhouse gas emissions. And we can all apply social influence research to engage others in taking action.

Thus, each MOOC participant chooses a climate action from the Drawdown Project list of 82 climate



solutions. Then they chose their network - the community they seek to influence. For example, a Spanish participant chose to invite friends over to her apartment for “sustainable brunches,” and then challenged them to hold sustainable brunches in their own homes. Participants from Nepal and Turkmenistan chose paper recycling, which they implemented with their office colleague networks.

To prepare to engage their networks in climate action, MOOC participants access readings, lectures, and discussions about how behaviors spread through social networks. Complex behaviors like choosing what to eat are not likely to spread the way Covid-19 does. With only minimal contact between people, a virus can

MOOC participants also learned about social norms, social marketing, and the five principles of social mobilization: Personal, Accountable, Normative, Identity relevant, and Connected

spread rapidly through a population. Simple and outrageous ideas, including conspiracy theories about corona virus or climate change, might also spread in “loose” networks, where people don’t interact often or know each other well. But for behaviors that resist change, like what we eat or whether we put solar panels on our roofs, behaviors spread through “clustered” networks where each individual has friends, many of whom are also friends of each other. In clustered networks, people receive multiple messages about plant-rich diet from multiple messengers, that is, friends who have already reduced their meat consumption. Or a woman notices, on her daily walk through her neighborhood, that a number of her neighbors have installed solar panels; the panels on multiple neighbors’ homes act like multiple messages from multiple messengers and influence the woman to install solar panels on her own roof ³⁴.

MOOC participants also learned about social norms, social marketing, and the five principles of social mobilization: Personal, Accountable, Normative, Identity relevant, and Connected⁵. The principles were popular among our MOOC participants—perhaps because they are captured in a

catchy acronym (PANIC), or perhaps because they reflect notions of community that so many of us are seeking—personalizing messages, holding members of a community accountable to each other, making particular behaviors the community norm, forging a common identity, and connecting with each other

Whereas our 700 participants from over 50 countries in our MOOC all shared a common concern and interest in the climate crisis, they came with radically different national, religious, and professional identities. So, how did we create a community not defined by physical boundaries, but by interests, concerns, and identities.¹ In addition to our online lectures, readings, discussions, and weekly webinars, social media was a key factor in bringing together our global community. Iranians were especially active on our MOOC WhatsApp group, posting photos of delicious looking plant-rich dolmas and spinach lasagna. We woke to a daily barrage of heart, flower, and thumbs up “stickers,” as our WhatsApp community applauded each other’s meals. The Iranians also created a separate Farsi language WhatsApp group where those who spoke more fluent English helped their compatriots to understand network climate action. Afghans who spoke Farsi also joined in. Our Chinese participants, who lack access to WhatsApp, created their own community over WeChat. They discussed how traditional Chinese culture, which touts meat as essential and as an expression of hospitality, makes a totally vegetarian or vegan diet difficult. However, in much of China, meat is only a small part of meals dominated by rice, noodles, and a tempting array of vegetables. So most Chinese are already eating a plant-rich diet, even though the term may be unfamiliar or even spurned. Chinese MOOC participants posted photos and recipes demonstrating how easy it is to cook plant-rich meals, and reframed plant-rich as healthy and sustainable. In this way they supported each other as they persuaded their family and friends to eat less meat.

In the post-MOOC survey, the majority of participants strongly or somewhat agreed that they felt a sense of belonging in our global community. The course participants also reported that they felt more optimistic and more capable of helping to mitigate climate change by means of personal actions and social influence. Thus, despite that over 50 national identities were represented in the MOOC, participants in the online community appeared to share not just concerns and interests, but also to develop a common identity as climate actors.

Education has multiple goals. In light of the covid-19 and climate crises, facilitating action and creating a sense of community are increasingly accepted as legitimate aspirations, in addition to learning. It is possible to spur action through online learning--over 200 of our 700 MOOC participants facilitated a network climate action. As for creating a sense of community, our WhatsApp and WeChat

communities remain active, even though the MOOC has officially ended. Members continue to post and support each other in their climate actions, and have expanded to posting about related activities like World Environment Day.

We firmly believe that online environments are not “place-less” but rather create novel affordances not possible in face-to-face environments. Each participant brings their own “place” to the community—whether it be regional cooking traditions or knowledge gained from influencing their local networks to take climate action. Thus, the online space becomes a “place” that supports community, learning, and action, including during a period of heightened international conflict and orders to stay in place. Where else, but online, could one bring together Iranians, Chinese, Americans, and citizens of over 50 other countries to learn together, to share their interests and concerns, and to develop a common identity through their climate actions? ►

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Critical Place-based Pedagogy *for Online and Distance Learning*

CAROLINE TORRES



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Many people experienced a rapid shift to distance and remote learning and students' homes suddenly became their classrooms as schools shut down as a result of the Covid-19 pandemic. Traditionally, academic learning has taken place at school, where students experience a formal curriculum, typically based on textbooks. These textbooks often do not incorporate knowledge and experiences from students' home and community environments, and students may not see themselves or their cultures reflected in them. This often disadvantages the students whose cultures are not centered in the curriculum (Sue, 2004) as can the absence of thier language in educational settings (López, 2009). In addition to the educational disadvantage this creates, this disconnection between home and school may also create conflict with students' identities, sense of belonging, and self-image (Ogbu, 1992). Connecting learning to students' prior experiences is cognitively very important; thus, students' whose culture and prior knowledge are not connected with learning face additional challenges (Demmert & Towner, 2003). Most people are accustomed to the separation of school and home, so this division is often not questioned. However,

this unexpected shift to attending school at home gives educators an opportunity to question and consider how the knowledge and resources of home and community can be integrated into curricula to support success for all students.

Place-based Education

Place-based education bridges the divide between what is taught at school and the wealth of knowledge embedded in the home and community lives of students. At home, students may be immersed in cultural practices, have access to the knowledge of elders, and have various opportunities for informal education (e.g., learning from and being mentored by family and community members). Place-based learning strives to immerse students in experiences and opportunities in their local communities. By situating learning experiences in authentic settings, educators can increase student engagement, motivation, and learning (Fukuda, Ah, Sam, & Wang, 2010; Kana'iaupuni, Ledward, & Jensen, 2010). Making connections with community partners can also result in student interaction and input that is valuable to the community in addition to being



relevant to the students (Powers, 2004). There is an increasing amount of evidence demonstrating that students' resilience and self-confidence increase when education is reflective and inclusive of their lives and cultures because it works to allay negative schooling experiences and marginalization. Furthermore, these advantages appear to positively influence math and reading achievement (Kana'iaupuni, Ledward, & Jensen, 2010). This, however, results from more than teaching about the place and culture, place-based education is teaching through the place and culture. It emphasizes building connections with local communities and integrating students' cultural backgrounds and values into curriculum. This can, and often does, include incorporating indigenous knowledge, which places importance on making sense of the world, through a lens of interconnectedness (Kincheloe, 2007). Place-based learning is rooted in the interconnectedness of people and place and as such can play an important role in integrating culture, community, and indigenous knowledge as a cornerstone of curricula and instruction.

A Critical Place-Based Approach

Teachers may hesitate to engage in place-based education because they may be experts in math, science, or other disciplines and may not feel as though they know enough about the culture and communities of their students – whether or not they are members of those same communities. However, teachers do not have to be knowledgeable in all aspects of culture to engage in place-based education with their students.

In fact, implementing place-based education through the lens of critical pedagogy centers community knowledge and collaboration. Critical pedagogy is a problem-posing approach that allows learners to tap into their own knowledge and co-investigate with teachers to reflect on and discover solutions about issues in their own communities and lives. It also challenges teachers to become learners and learners to become teachers through instructional conversations (Friere, 2018). Thus, the teacher does not need to, nor should, be the all-knowing expert but instead facilitates a journey of discovery and learning. Student success is not only dependent on what the teacher does, what the student does is also important (Ogbu, 1992); thus, the student as teacher role provides valuable opportunities for students to use their own knowledge in a meaningful way. A critical place-based approach to learning can also empower and engage students by encouraging them to advocate for the places and practices that they are grounded in, including the impact of historical injustices, like colonization, on their places and communities (Porter & Cristobal, 2018). This goes beyond simply using culturally relevant examples with typical textbook materials (which is often called culture or place-based education) by giving students opportunities to engage critically with issues and policies impacting their communities (Ladson-Billings, 2014), schools, and education. Place-based education centers students' communities and lived experiences as an integral part of the curriculum and not only a legitimate but valued part of the learning experience. In turn, students have a context for learning that is grounded in their communities while also situated in the global context.



Making Sense of Global Issues at Community Level: A Place-Based Approach

Teachers across the globe struggled with the immediate and involuntary shift to distance learning during the COVID 19 pandemic. They were forced to transform their curriculum and instruction to reach, engage, and attend to the emotions of all of their learners at a distance. A critical place-based approach is one way to engage learners in understanding and discussing the impact of a transformative event, such as the pandemic. This can give voice to the fear and grief that they may feel, while also helping them to understand and think of ways to manage as well as help their communities. For examples, as part of their learning, students can discuss health risks and preventative measures for their communities. This can be an interdisciplinary effort, fitting easily into science, language arts, and health curricula. These lessons can extend to math as students calculate, analyze, and graph data related to the pandemic in their community. Students can then share relevant skills and knowledge to support their communities.

Globally, students are experiencing the effects of environmental and social injustices, and critical place-based pedagogy strives to

promote the mitigation of social and environmental injustices in the community. Teachers can incorporate lessons on these important and interconnected issues, using the students’ communities as a point of focus. Core academic knowledge and skills, like reading, writing, math, science, and history, and language, can be addressed in these lessons through the lens of place and culture and multi-modal approaches. This can reduce barriers between school and the community (Smith, 2002), and the connections can help students develop a sense of who they are and a responsibility for the place where they are, which can guide their engagement and activism locally and globally (Kana’iaupuni, Ledward, & Jensen, 2010).


Place-based education is often focused on themes of culture, nature and the environment, problem-solving community issues, and community internships (Smith, 2002). One culture-focused project involved students in a rural community developing research and writing skills by interviewing family and community members and writing their stories. Students, in turn, wrote their own stories, and in addition to commonly read “classics”, these stories became a formal part of the curricula. This led to critical reflections and pride in their stories and communities as well as increased academic success (Guajardo, Guajardo, & del Carmen Casaperalta, 2008).

An environment-focused project had students learn about different types of water pollution and then survey the area around the school identifying the different types of pollutants they had learned about. They then discussed and identified changes that they could make in their lives to improve the situation, and they wrote letters to the head of the school requesting specific policy changes. Among other place-based assignments, this led to deeper understanding and an increased sense of responsibility for the community (Torres, Kanaoka, & Otero, 2018). A community internship for one high school program included maintaining traditional fish ponds and working in traditional taro fields. These previously struggling students found pride and relevance in engaging with their traditional cultural practices and hands-on application of learning (Nakaso, 2015). Teachers in all of these examples reported improvements in students’ engagement, self-confidence, and success overall. In addition, the students reported increased engagement and interest in school as a result.


To implement critical place-based learning with the problem-solving approach, teachers can incorporate core elements of critical pedagogy and place-based learning, while developing learning opportunities based on relevant issues in their students’ communities.

Sidebar 1:

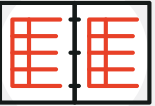
STEPS TO IMPLEMENT CRITICAL PLACE BASED LEARNING




Identify the core skills and knowledge required for the discipline-related lesson goal (e.g. probability in math, writing a persuasive argument in language arts, understanding water cycles in science).




Identify, or help students to identify, an authentic problem relevant to students’ lives and communities that can be used as a lens to develop students’ academic skills and knowledge. Pose essential questions in relation to the problem.




Support students as they gather information and knowledge about the problem; guide them to explore the issue in the context of the local community and to leverage community resources and knowledge.



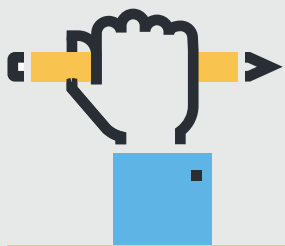
Guide students through reflective thinking and dialogue about the problem and the impacts on the local community.



Collaborate to make decisions and determine possible solutions and actions that they and others can take to solve or minimize the problem.



Encourage students to share their ideas and solutions with their communities.



A Critical Place-Based Lesson for Distance Learning

In the distance learning context, students do more of their learning activities at home and spend more time in their community settings. This can allow them to tap into family and community knowledge more easily and deeply. Place-based education in distance learning contexts can be done across the range of scenarios, from using no technology to online learning. However, it requires structure so that students are provided with the support, guidance, and instructional conversations that can support them to be successful.

Here is one adaptation of a critical place-based lesson that can be implemented in distance or online environments with or without technology. This lesson addresses language arts standards of identifying key details in texts, drawing conclusions, and conducting research, but the project could be adjusted to align with other content areas and standards as well. Suggestions for technology and low-tech applications are provided. For students and teachers who do not have robust access to online and digital resources, the low-tech methods can be communicated via email if students have access to a cell phone with service, or the school can set up and pick-up/ drop off system.



Technology Application



Low-Tech Application

| STEPS | CRITICAL PEDAGOGY LESSON ACTIVITIES | TECHNOLOGY OPTIONS |
|-------|---|---|
| 1 | Identify the core skills/ knowledge | Language Arts: Students will conduct research, identify key details in texts, and draw conclusions |
| 2 | Identify the problem and provide learning experiences | <div>Teacher and students identify water pollution as a local problem, and the teacher provides students with resources to understand causes of water pollution and environmental and personal health impacts.</div> <div>Teacher also provides a structured note-taking guide to help students build their knowledge.</div> <div>Digital Tools:<ul style="list-style-type: none">Digital bulletin & discussion board (e.g., Padlet) or Google Docs resource bank with text and multimedia information at a variety of levels to support diverse learnersTeacher Screencast (e.g., screencastify) or audio-recorded overview of how to find key details and to take notesGoogle Docs structured note-taking guide template</div> <div>Low-tech:<ul style="list-style-type: none">Printed articles and infographics with the project instructions and note-taking guide</div> |
| 3 | Support students as they gather information | <div>Students demonstrate the knowledge that they have developed from sources by creating an infographic or audio/video recording with the key details that they identified.</div> <div>Teacher provides a model or an exemplar with instructions.</div> <div>Digital Tools:<ul style="list-style-type: none">Infographic (e.g. Piktochart), Voicethread audio, or other tool for students to share key detailsTeacher Screencast/audio-recorded description of annotated exemplars of student product</div> <div>Low-tech:<ul style="list-style-type: none">Hand-drawn infographic, written summaryPrinted annotated exemplar summary with instructions</div> |
| 4 | Guide students through reflective thinking and dialogue about the problem and the impacts on the local community | <div>Students continue to develop their knowledge by choosing family and/ or community members to interview about water quality in their community. Teacher provides samples of questions.</div> <div>Students develop their knowledge further by walking around the community (if it is safe) and documenting areas where they see water pollution or where they see something contributing to the water pollution.</div> <div>Digital Tools:<ul style="list-style-type: none">Google Docs question template with space for student-generated questions</div> <div>Low Tech:<ul style="list-style-type: none">Printed question template</div> <div>Digital Tools:<ul style="list-style-type: none">Online map (e.g. Google Maps; Google VR Tour Creator) with students' annotations (pins) to denote areas with different causes of pollution</div> <div>Low tech:<ul style="list-style-type: none">Printed or hand-drawn map with annotations</div> |
| 5 | Collaborate to make decisions and determine possible solutions and actions that they and others can take to solve or minimize the problem | <div>Students compile their data from the interviews and the community walk, share with each other, discuss, and begin to problem-solve. Teacher provides a structure and template for the data sharing as well as modeling with possible sentences starters (e.g., My group members and I think the most serious type of water pollution in our communities is... because...) and phrases that students can use to discuss in a productive and critical way and begin to problem solve (e.g., That is an interesting idea, have you thought about ... solution?). Students can be grouped with others in the same or similar communities.</div> <div>Digital Tools:<ul style="list-style-type: none">Shared Google Slides or Google Doc for groups of students to compile dataSynchronous session (e.g. Zoom) with breakout rooms for students to share with each other and discuss in groupsDigital bulletin board (e.g., Padlet) or links on a Google Doc for students to post and share their completed presentations and what action they will take/ proposeGoogle Slides with narration/ additional information in the notes section, video, or other presentation type</div> <div>Low tech:<ul style="list-style-type: none">Teacher collects, copies, and distributes data to students so that they can see each other's data and analysis.Teacher provides reflections prompts for students to think about the group data.Hand-drawn storyboard or other presentation describing their data, conclusions, and what action they will take or proposeTeacher collects and shares completed presentations with all students and provides final reflection prompts and action steps.</div> |
| 6 | Encourage students to share their ideas and solutions back with their communities | <div>Students reflect and make decisions about what the best solution is to the problem that they investigated. Teacher provides specific guidelines and can structure an authentic assignment, like taking action or writing a letter to local representatives calling for policy or action.</div> |





The shifting of classrooms from schools to students’ homes was sudden, and for many, chaotic, but something good that may come out of it is a new perspective on what learning spaces can look like. The approaches outlined above are not new, nor are the reported benefits, yet they are still not widely implemented. Of course, a major challenge to implementation is the time and perceptual shift that any curricular change requires; however, educators can begin by transforming one learning goal or project at a time and building on their success. In our interconnected world, it is essential

to promote ways for students to understand and participate in developing solutions at a local community level that both improve students’ success and improve community wellbeing. Critical place-based learning is one way to provide transformative learning experiences that can impact social and environmental justice for our students and their communities. These principles can be readily adapted to distance and online environments, so educators need not wait until everyone is back in face-to-face classes for this recent challenge to become an opportunity.

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The Renewed Significance of New School Approaches in the Post-COVID-19 World

EDER CUEVAS



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In September 1962, the first Montessori school in Mexico emerged in the city of Chihuahua. It was an effort made by several families forming a non-profit organization for the education of their children. The first step was sending a woman teacher to Connecticut and later a man to Italy to be trained in Montessori education. A great project started with five children now is a wonderful and well established program for 580 students from one to fifteen years. The adolescent programme since 2004 offers the Erkindar foundations bases referred to in the Montessori book “From childhood to adolescent” where the hands-on activities and the possibilities in an environment fulfil the adolescent needs through nature, social organisation and meaningful and real work.

The evolution of Montessori de Chihuahua School has not been without organization difficulties, however 60 years after its creation, a phenomenon has occurred that has not just halted school inertia but taken it out of school and installed it in the home, the COVID-19 pandemic.

In general, schools are currently isolated from society, their task of educating has been reduced to keeping schedule, following a plan for the day, providing the student with information and assessing it, reduced to a short sighted “today”.

It is far from being a living space that invites you to know yourself, to analyse problems by exchanging ideas, to present arguments and encourage discussion, inquiry and problem solving.

We are presented with a great opportunity that humanity cannot and should not miss. In history, this era will be marked as a before and after the virus. Change and adaptation

In general, schools are currently isolated from society, their task of educating has been reduced to keeping schedule, following a plan for the day, providing the student with information and assessing it, reduced to a short sighted “today”.

*"It is necessary that the human personality should be prepared for the unforeseen, not only for the conditions that can be anticipated by prudence and foresight. Nor should it be strictly conditioned by one rigid specialization, but should develop at the same time the power of adapting itself quickly and easily. In this fierce battle of civil life a man must have a strong character and quick wits as well as courage; he must also have practical ability in order to face the difficulties of life. *Adaptability* — this is the most essential quality; for the progress of the world is continually opening new careers, and at the same time closing or revolutionizing the traditional types of employment."*—

MARIA MONTESSORI

have been the only constant over history and demands this of us as human beings - transformation and adjustment for a better world. Asking ourselves, What sort of school do we want? And for what society? is the starting point to take action that leads us toward a new kind of school.

The answer to the previous questions should lead us to the same objective enabling us to see the inner workings of the environment that surrounds the human being from its early stages, to identify the things that were not working and to structure the pathways for the development of humanity and society. The function of the school is to give hope for a better future, creating ties between the student and community. The bond that it prepares in a micro-society from reality.

The new school approach should be structured in the sustainability of peace, that is to say, in processes that organically lead us to evolution as human beings in the process of well-being. This process requires great resignation, restricting the adult.

As Rousseau, Pestalozzi and Froebel laid the foundation of the new school movement two centuries ago, Maria Montessori, Ovide Decroly, John Dewey, Helen Parkhurst, Georg Kerschensteiner, Edouard Claparède, Adolphe Ferrière, Roger Cousinet, Célestin

Freinet and more, helped us to build a vision of education, for a diverse society.

Education is the path towards significant social reforms. For this to happen, adults and particularly governments must give up their immediate interests, and the traditional model of industrialisation of education, where workers are formed instead of people and learning is conditioned through siloed subjects instead of educating for life. Grades and same ages in classrooms must disappear to allow for real growth as a human being and to follow the interests of children rather than imposing our interests. Knowledge must always be within reach through questions, collaboration and, above all, observation, avoiding doing so through instruction, conditioning and rewards. The educational process must comprise of meaningful and real activities; otherwise, it is inanimate and lacking.

It is time to de-school education, free the school from curricular constraints and empower it to be a laboratory of life that provides a prepared environment which is a Montessori concept meaning that the environment can be designed to facilitate maximum independent learning and exploration by the child and adolescent, therefore that skills and challenges converge, organising experiences that lead to knowledge. Eliminating subjects instead of bringing them in when necessary is something we should be establishing.

My personal experience in almost 20 years working of the Montessori school of Chihuahua has given me confirmation that a new approach for education it is vital. Ours is a community based-school, and each adult member participates in on-going training as a parent but also as a human being. Satisfying child/adolescent needs is the priority in any decision, and following their rhythm is the most critical educational fact. These times are critical and send us a message that we cannot ignore. We need to change. For the school to advance in consolidated steps towards the sustainability of peace, obviously the teacher figure is needed, however before and with deliberate eagerness, we must discuss what

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I consider the following to be the three pillars of the new approaches to education:



1. The Child/Adolescent

Education for life needs to have as its centre its main protagonist: the child/adolescent. When we genuinely delve deeper into their needs society will change. It would allow the child to succeed in respecting his/her individuality, granting them the independence required at each stage of development to respect their self-construction process. An independent child/adolescent becomes aware of the need and possibilities of interdependence that a healthy community grants us where each member lives abiding to his/her mission.

The importance of the child as a centre is well established in The Dalton plan created by Helen Parkhurst. The Dalton Plan gave us the respect of the individuality enshrined in three principles: freedom, cooperation and self-reliance. Mario Montessori (Dr Maria Montessori's son) provided us with a great foundation in his writing on human tendencies (order, orientation, exploration, communication, activity, manipulation, work, repetition, exactness, abstraction and self-perfection) and Cosmic education as a reference of the human being in his life process.



2. The Family

The family must retake its place as the first school, as the real “alma mater”. The values and lessons from the family are embodied in the children. The educational practice of the school is conditioned to the emotional process of the student; it is, therefore, necessary that each home assumes its educational role.

De-schooling education means involving the family in taking on its educational function. This last argument does not mean that at home, they will follow school curricula doing endless tasks or that they will always be in meetings at school. It means that the family provides respect through independence and facilitates life learning in their daily lives, identifying with the help of experts and the school the strategies to develop at home for healthy personality development. Working together shapes the child which is the type of bonding that a better society seeks on a large scale. Monitoring the child as the school does now should be something that the family does.



3. Nature.

To make peace sustainable, we need to rebuild respect for nature, and this will only be achieved by getting to know it because you cannot love what is not known. Nature is resilient.

The miracle of the food process from seed to table, the nurturing of a plant, the tree types, the animals’ evolution, the seasons, water, wind, amongst others, are all examples of the infinite possibilities of learning from the environment and ourselves.

Every child has the right to know his environment depriving him of knowledge of nature is depriving him of an essential part of himself. We regulate, rejoice and recreate through natural elements. As Heike Freire wrote: the task of literacy for the population a century ago is today our relationship with nature.



In conclusion, it is an excellent opportunity to make significant changes in the world by returning to the essential from the child, family and nature for a better society. The school is the organisation that must take charge of social reform, and is the institution that represents hope and future. Poverty, famine, violence, corruption,

suicides, wars, inequality, pollution, health and many more, are problems that lie and depend on the human being himself, and this has to change. From the school, it corresponds to form and reaffirm that we are all educational players, that each one of us must live the universal principles and values of humanity.

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Unleashing the Potential of Digital Learning: Framerspace and Libre Pedagogy

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Introduction

The debates about the education system – its purpose, curriculum and pedagogy or the why, what and how of education are not new. These debates, however have gained center stage as the issues such as climate change, racism, migration xenophobia, violence and conflict rise and we find ourselves asking what we are doing to equip young people to live harmoniously and work towards more sustainable and peaceful societies. In this context, we need to revisit the traditional confines of the education system, particularly curriculum and pedagogy, to equip young people with competencies to address the contemporary social and emotional problems that we face individually and collectively and to shape more sustainable societies.

There is broad agreement amongst educationists on replacing the much-criticized ‘banking’ model of education, which focuses on the transfer of knowledge with pedagogies that place learners at the centre and focus on meaning making and knowledge construction. There have been numerous and deliberate attempts to develop pedagogies that take into account learner diversity and agency to foster critical thinking, problem-solving, collaboration, creativity, empathy, cross-cultural skills and other transversal skills. Even though these alternative pedagogies have gained traction at a policy level or scholarly circles, actual shifts on the ground are happening in small pockets and have not transformed the educational landscape.

Are we then to assume that these pedagogies that offer enriching learning experiences will only be accessible to a small segment of students? **Technology may provide one promising way to scale up enriching learning experiences.** Technology can be a great enabler to equalize access and actualize progressive pedagogical ideals for a large number of people simultaneously.

The education sector has seen massive uptake of digital technologies in light of the COVID-19 crisis, but we should not be too quick to celebrate this as indicating any important pedagogical shifts. We have to ask if we can call what has largely happened—namely, replacement of a lecture with a video, books with pdfs, classes with video conferences, classroom instruction with written instruction on a learning management system (LMS)—as providing more enriching and empowering learning experiences. Are we witnessing growth in ‘online learning’ or a mere ‘emergency’ in ‘remote teaching’ (Hodges, 2020)? At the heart of this discussion lies the application of scientifically informed digital pedagogies in online learning.

Rooted in the theory of constructivism, digital pedagogies can be difficult to define. The term largely refers to the use of digital technologies in teaching and learning. These technologies maybe applied in varied learning contexts and have the potential to address issues of ‘one size fits all approach’.

Digital pedagogies, when implemented intentionally, may stimulate imagination, develop critical thinking skills, provide learners agency and allow for self-paced, personalized and collaborative learning, all while allowing the students to take an active role in their own learning and make learning interactive, experiential and immersive.

It is worth exploring how purposeful use of technology combined with principles of learning design can augment or even redefine the learning experiences for a large number of people at the same time. Below are some examples of enriching learning experiences facilitated by digital technology.

Digital pedagogies, when implemented intentionally, may stimulate imagination, develop critical thinking skills, provide learners agency and allow for self-paced, personalized and collaborative learning, all while allowing the students to take an active role in their own learning and make learning interactive, experiential and immersive.

Personalized learning: Personalized, adaptive learning, differentiated or individualized learning refer broadly to an approach where the content, medium, level, pace of learning are customized for each student. Unlike traditional education where a standard learning content or exercise is offered to all learners at the same time, this approach personalizes learning experience based on the strengths, needs, skills and interests of each learner. By using affordances of technology and flexibility of asynchronous learning, learners can be offered a choice of medium (audio, video, images and other digital tools) to acquire knowledge, engage with content and demonstrate their understanding (Eagleton, 2008) when they feel ready. Further, by employing artificial intelligence and machine learning, many LMSs are able to offer customized learning pathways to learners based on their performance or preference.

Active and immersive learning: Active Learning is often defined as ‘learning by doing’. Unlike the traditional learning, experiential or active learning requires students to be active and engaged. Digital Game based pedagogies and virtual reality are leading the way in this domain. In an effective game-based learning environment, the learner works towards a goal, chooses actions and experiences consequences. They are free to make mistakes and learn from those mistakes by experimenting. This process creates a ‘low risk’ environment for the learners and helps them to be engaged and learn through experiences. This helps them develop problem solving and critical inquiry skills. Similarly, the virtual reality content creates avenues for the learners to engage deeply and retain more through immersive and interactive means; “it enables learning by allowing multiple perspectives, developing awareness of different situations and by facilitating utilization of learning acquired in a specific context to another ‘unrelated’ context” (Dede, Salzman, Loftin & Ash, 2000)

Collaborative learning and cross-cultural dialogue: **Collaborative learning is a pedagogy that uses groups to enhance learning by working together.** It entails collective problem solving, task completion, discussion and dialogue on concepts, building resources or presentations. Research has shown that peer discussion enhances understanding, even when none of the students in a discussion group originally knows the correct answer (Wood, Adam, Wienman, Knight, Guild&Sul, 2009). With use of digital tools, collaboration is neither limited by geographies nor time available in the class. The biggest advantage however is being able to collaborate asynchronously this means that learners from different time zones can be working on the same blog, wiki or other digital tools in their own time zones.

Continuous assessment and feedback: While some institutions are making a switch from the much debated standardized assessments to more constructive assessments, limited

availability of teacher’s time and other implementation issues make this transition difficult (Zainab Abbas, 2012). Digital assessments can enable this switch through easy integration of strategies like measuring student engagement, peer assessments, formative and continuous assessment. By use of automated assessment in blended or online environments, learners are able to get frequent, timely, and specific feedback. Stealth assessments are showing ways to make performance based assessments possible through digital games (Shute, 2011; 2013). **The biggest advantage of well-designed digital assessments however, is the fact that the system can use learner’s performance data to reset a suitable learning pathway for them.**

UNESCO MGIEP’s Framework to Enact Digital Learning: Libre process and FramerSpace

To build a new ecosystem for digital learning that can enable enriching learning experiences, we have advocated for integrating evidence-based digital pedagogies with interactive digital platforms. At UNESCO MGIEP, we advocate the use of a pedagogical framework called Libre (explained below) and an artificial intelligence (AI) powered digital co-creation platform called FramerSpace.

FramerSpace (FS), developed in house at UNESCO MGIEP, is designed to allow learners to experience enriching learning experiences through its multitude of features. For instance, active learning can be seamlessly realized through the subjective tools of FS such as audio, video, textual journaling, fill in the blanks, and the objective tools of multiple choice questions and match the following available on the platform. Content can be made more engaging and immersive through the platform’s ability to integrate audio/video/ comic stories, alongside simple and complex games. Along the same lines, collaboration, which is a strong motivator of peer learning can be incorporated using FS’s ability to allow intra and intercultural dialogues and discussions among vast varieties of groups. Similarly, personalized education can be realized partly through the ability of FS to embed multimodal content and interaction tools.

The Libre pedagogical framework integrates the five transformative pedagogies of Storytelling, Games & Gamification, Inquiry, Reflection and Dialogue to create a multisensory, rewarding, interactive and engaging learning experience for learners. Below we share the seamless integration of the Libre process on Framerspacce to redefine learning experiences, drawing on the courses we created on FS.

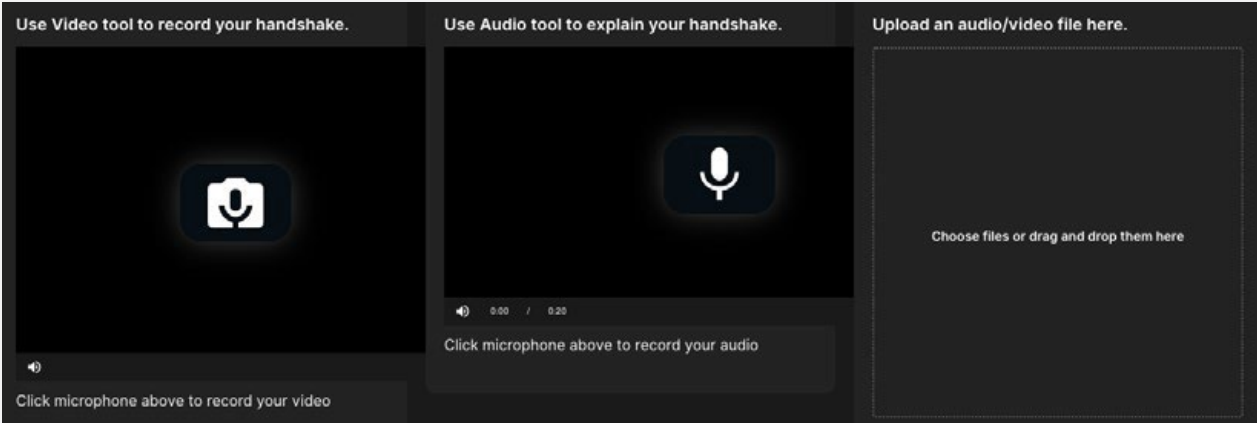
Storytelling: **Storytelling is an age-old tradition that has been used to pass culturally relevant information from time unknown.** Apart from invoking multi-senses, and increasing the likelihood to retain information, stories also incite desirable emotions, and enhance the skills of perspective taking (Brudner, E., 2019).

The Global Citizenship course is a theme-based course on FS, aimed at building empathetic, compassionate, mindful, and rational global citizens, uses cartoon strips and code embedding on Framerspace to integrate in-house developed stories and video journals. A glimpse of this feature is shared below.



Reflection: Often in life, we engage in trivial or complex layered tasks without the awareness of the reasoning behind it. This behaviour over time may lead to a superficial understanding of things that matter to us as well as to others. It is here that reflections can help us in self-monitoring (Hubbs, D. L., & Brand, C. F. , 2005).

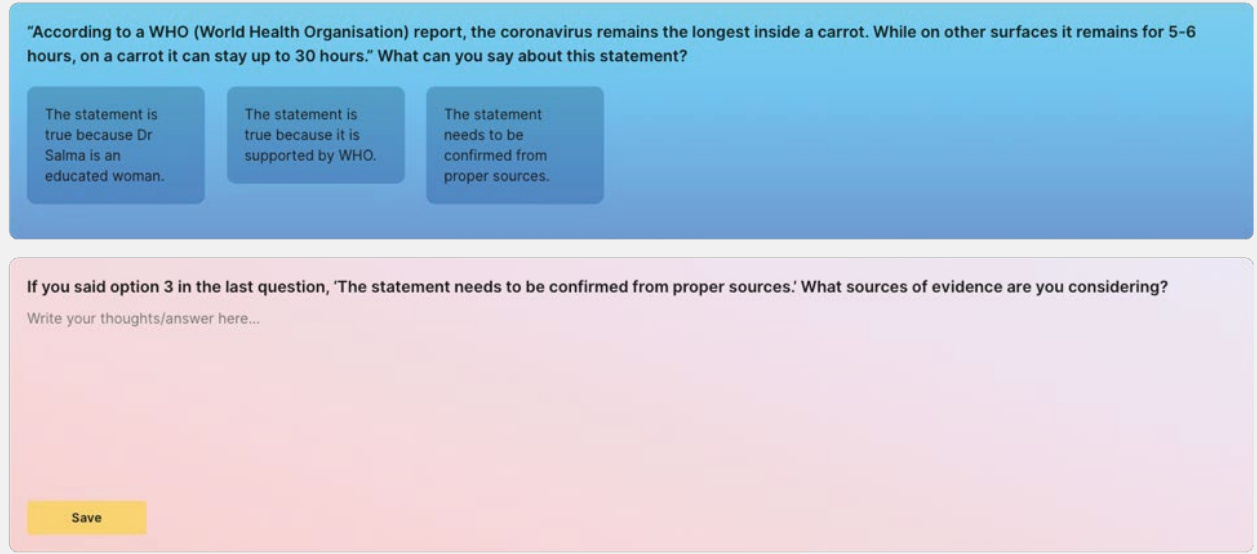
The Pandemics course on FS is a theme-based course, which aims at building knowledge, skills and dispositions for combating COVID-19. To incorporate reflection pedagogy, the course uses two features of FS. First, FS's ability to integrate multi-modal objective and subjective response features, and second its ability to keep learner reflection inaccessible to other users. A glimpse of this is shared below.



Inquiry: Inquiry-oriented learning is a pedagogical approach that encourages learners to find answers to questions either through their own or through common observation, thinking, reasoning, and their rational judgment and experience(ThinQ, 2014). It is an integral part of many transformative pedagogical approaches like project-based, problem-based,

collaborative learning, where it takes a center stage in facilitating discussions, dialogues and reflections.

In the course of Pandemics on FS, an inquiry into an article's validity has been visualized through the features of objective and subjective responses on FS.

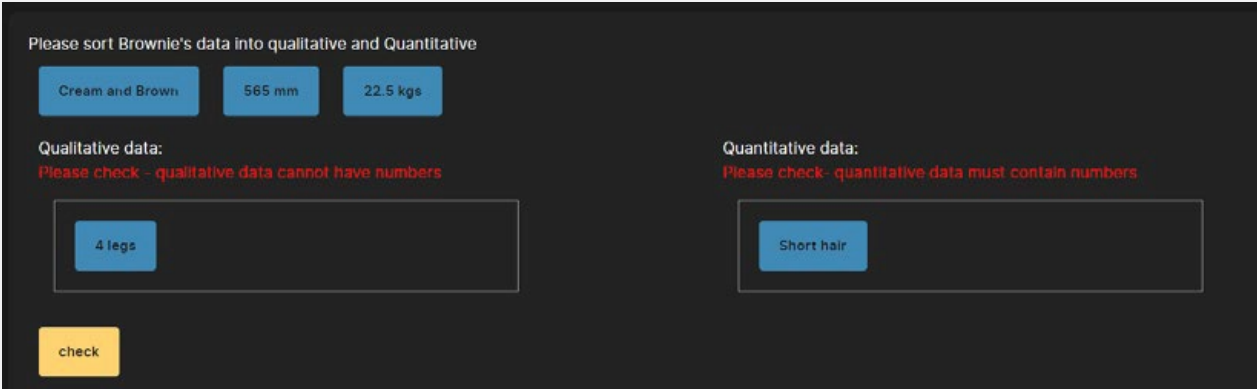


Games & Gamification

Unlike traditional rote and lecture based learning, wherein a learner is a passive consumer of knowledge, games and gamification pedagogies require students to be more active and engaged (Muntean, C. I. 2011). They, through their game design and motivators (intrinsic and extrinsic) provide a safe learning space for learners, where making mistakes is acceptable (Burguillo, J. C. ,2010; Koepp, M. J., Gunn, R. N.,

Lawrence, A. D., Cunningham, V.J., Dagher, A., Jones, T., & Grasby, P. M. ,1998).

Another course on Math and SEL aims to build Data Handling capabilities using SEL framework. It thrives on FS's ability to integrate external codes (using the 'embed code' feature), and integrates meaningful interactive games and gamified activities. A snapshot of a gamified activity on FS is shared here



Dialogue: The dialogic/discussion strategy adopts a safe, yet collective learning approach to arrive at new, and often improved understanding of concepts and ideas. It encourages people to share their opinions while recognizing the potential of difference in perspectives (Burbules & Bruce, 2001).

On the same course on Pandemics, dialogue has been realised through the ‘discussion block’ feature on FS. What is also worthwhile to acknowledge is the platform’s ability to hide the user’s personal identification information, thereby facilitating a safe space for participation without the fear of judgement.

A ariel

I don't think it is difficult. You just need to not believe anything right away you always can do a little research !

Reply

HAH Hussein

Because when a false news is published it will be circulated and published on many sites and there are people who will believe because of the large number of fake news

Reply

STEPS FOR DESIGNING A DIGITAL COURSE

The flowchart below summarises 12 simple steps that can be used to create a digital course on a platform. Note that learning outcomes, assessments, and content development and platform affordances are moving pieces that impact each other in the process of course development and the liner steps below are only indicative.

1

Decide course topic & end goal

2

Understand your Target audience & their needs

3

Research on existing courses, curriculums and frameworks

4

Set Learning Outcomes

5

Design assessments

6

Understand the capabilities of your digital platform

7

Design platform supportive interactive digital learning resources & integrate

8

Conduct a pilot test

9

Use feedback to improve the course

10

Deliver the course to all learners

11

Continuously evaluate the effectiveness of the course

12

Use feedback to improve the course

Conclusion

There is an increasing recognition of the power of digital pedagogies to augment learning in K-12 as well as higher education globally. **However, this integration needs to be executed with caution; mere uptake of technology may not help in achieving the much sought-after pedagogical ideas of personalization, collaborative learning, enquiry based learning or continuous assessments.** Just as great content knowledge requires sound pedagogy for impactful learning, digital competencies of educators need to be enhanced so that they can effectively implement digital pedagogies to create engaging and meaningful online learning. ▶



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What Games Do

ANTERO GARCIA



Antero Garcia is an assistant professor in the Graduate School of Education at Stanford University. His work explores how technology and gaming shape learning, literacy practices, and civic identities. He co-designed the Critical Design and Gaming School—a public high school in South Central Los Angeles. Antero received his Ph.D. in the Urban Schooling division of the Graduate School of Education and Information Studies at the University of California.

I spend a good portion of my leisure time averting disasters and global crises. Usually with close confidantes (and sometimes all by myself), I’ve thwarted worldwide pandemics, stopped the collapse of national democracy, and—when need be—have toppled the mightiest of dragons.

In the fantasy worlds of gaming, such exploits are par for the course. **And in narrative driven games like roleplaying games and alternate reality games, finding unforeseen solutions to complex challenges are central to how and why many people play these games.** Particularly in light of a real global pandemic that is drastically shaping every corner of society, schools must provide myriad opportunities to engage young people in creative, solutions-driven learning opportunities. This is what games do.

Now more than ever, curriculum must be unanchored from traditional forms of education that focus on the acquisition of rote knowledge. At their best, games help players see new possibilities and just-in-time solutions that may have been previously unexpected to all players. Depending on the rules, the contexts, and the ingenuity of players, “winning” in a game does not have to be tied down to just

And in narrative driven games like roleplaying games and alternate reality games, finding unforeseen solutions to complex challenges are central to how and why many people play these games.

whoever accumulates the most points in a set period of time. Games can be sustained for celebrating divergent thinking, uplifting empathic connections, casting light on collaborative problem solving.

In a recent essay, Arundhati Roy (2020) describes the current pandemic as “a portal, a gateway between one world and the next.” **It is in this spirit of transition and the necessity for human reimagination because of it that I turn to gaming as a core pathway through this symbolic portal.** To be clear, we cannot discard the responsibilities, the sorrow, and the memory of our present world in this shift. Especially in the context of the U.S. right now as our nation undergoes an overdue reckoning with a history of anti-black racism a portal to a new world must necessarily reconcile with the history of our past. This complex mixture requires new forms of imagination. In the rest



of this essay, I want to focus on the possibilities of predominately analog gaming genres like tabletop roleplaying games (TRPGs) and alternate reality games (ARGs). Focusing on open-ended forms of gaming, where challenges, successes, and narrative resolutions are partially shaped by player input and collaboration, the possibilities of games to offer real-world insights in a time of distance learning and global pandemic is limited only by player cleverness.

Learning and the Power of “Creative Collaboration”

Existing research expounds greatly on the learning possibilities of video and boardgames, illuminating the complex literacies, computational thinking, and collaboration such games require (e.g. Berland & Lee, 2011; Chen, 2011; Farber, 2014). Undoubtedly, these are powerful learning skills that can transform classroom practices at various scales and in contexts that work within distance education models the present world demands. At the same time, I want to explore how educators can adapt the ethos of “creative collaboration,” described below, that serves as the pith for myriad gaming experiences. Importantly, while I focus in this essay on “analog” games (Garcia, 2020), these games are easily adaptable to the contexts of distance education schools are presently employing.

Described in the most recent rule book as “an exercise in collaborative creation” (Wizards of the Coast, 2014, p. 4), Dungeons & Dragons (D&D) is perhaps the most widely recognized

tabletop roleplaying game today. Governed by player jurisprudence and tomes of rules that are hundreds of pages long, a typical game of D&D is played by 3 or more players that imagine, explore, and engage in adventures in a fantasy world. With polyhedral dice and careful record keeping, this game persists from one gaming session to another, meaning that a single game of D&D can (and often does) last for months of years.

The limits of a tabletop roleplaying game like D&D are those prescribed by player imagination, time, and collaborative interest. Similarly, there are no simple solutions to a specific adventure. A troll is causing trouble in a local village? One could charge head-first into battle with the formidable foe. Or perhaps a careful trap is set? Or an act of diplomacy? Though such adventures may seem—and often can feel—silly and lighthearted, the practices of imagining, working together, and overcoming tasks in ways that no one player could have foreseen are important skills.

Especially as we are faced now with a series of global challenges with few obvious solutions other than patience, the activities of D&D and collaborative ingenuity may provide the kinds of skill sets society demands of young people as they lead in the near future. Further, while roleplaying games are historically played around a table and with shared snacks and gaming accoutrement cluttering the space, the digital communication tools common place for schools and business make playing D&D at a distance easier than ever before. All that is needed is a means to engage in dialogue to craft a world in your mind.

Reality Alternatives

Alternate reality games (ARGs) look and feel different from most games readers might be familiar with. Rather than a game being confined to a table or to a screen, with video and tabletop games, ARGs are played in the real world. They might require participants to go to actual buildings, make phone calls, or manipulate objects based on clues digitally or literally unearthed. And with players potentially distributed across the world for global games like I Love Bees (McGonigal, 2008), players may not always know who else is participating in an ARG. Game designers Jane McGonigal and Ian Bogost (2010) actually built on this uncertainty in her game “Cruel 2 B Kind”: playing as a ruthless assassins, the only way players can defeat their enemies is through the use of compliments and kind words. This playful transgression illuminates new possibilities—portals—that open up when the contexts of where and how games are played expands into the streets, neighborhoods, and varied spaces of the physical world.

Reflecting on how ARGs can allow players to try on new identities—perhaps pretending to be an activist or a scientist or a political leader—encourages players to really embody such behaviors outside of a game, Greg Niemeyer and I (2017) have argued that “the ‘alternate’ of alternate reality games is one that leads to new social connections and real experiences” (pp. 7-8). Even in the current context in which we may not safely socialize and interact in person, imagining a fiction that hinges on players seeing the world in a new light is the kind of practice from ARGs that can be adapted in classroom contexts (Garcia, 2017).

No New, No Normal

The thing about epic adventures is that—often—what’s left in the wake after a foe is vanquished is typically unseen and unexplored. The lights come up in the movie theater shortly after the evil wizard is defeated, the dragon is slain, the “good guys” win. However, the credits do not roll in the real world outside of films, books, and games. The global pandemic that has disrupted every faucet of life does not just slink away one day and the world reverts to what was before. While supporting youth learning with games may help bridge this complex moment, the portal that we are travelling through still leaves us with the trauma of untold numbers of death and grief for the devastation left in the wake of this pandemic.

Administrators, policy makers, and businesses have proclaimed here in the U.S. articulations of a “new normal” that we must accommodate in a post-pandemic fantasy. However, the effects of this global crisis are not going away anytime soon and it is irresponsible to imagine otherwise.

Knowing that games will help us sustain new models of engagement while also still leaving us with the remnants of social and emotional weight, we must question: what new stories will play allow us to unpack? What new lessons can we glean from the “creative collaboration” of gaming in distance education models? And, in light of the trauma that will leave in the hearts of students and teachers alike, how will we imagine and try on new roles as empathetic gamers? Games can unlock new pedagogies and new desires in classrooms and—perhaps—they can serve as a balm to soothe souls crossing from one pre-pandemic world to the contexts yet revealed. ►

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INTERVIEW

Q&A with Ziba Scott - Game Designer of 'Kind Words'

MATTHEW FARBER,
Assistant Professor of Technology, Innovation and Pedagogy (TIP) at the University of Northern Colorado, and Co-Founder of the TIP Creativity Lab, USA



Ziba Scott has been making games as Popcannibal for ten years. He uses his schooling in computer science (University of Chicago) and serious games (Michigan State) to make games that explore the lines between fantasy and meaningful action. And sillier stuff too, including seating arrangements ("Girls Like Robots"), poetry ("Elegy for a Dead World"), sailing ("Make Sail") and, most recently, kindness ("Kind Words"). Awards include: a BAFTA and the IndieCade Europe Grand Prix. He has been very slowly studying blues harmonica and likes to think he’s getting better. He lives in Cambridge, Massachusetts with his wife and turtle.

Kind Words (lo fi chill beats to write to) (<https://popcannibal.com/kindwords/>) is an online multiplayer video game about sending and receiving brief notes from strangers. Paper airplanes notes fly across a floating digital bedroom on my computer’s screen. I click to open it. Some are “virtual hugs,” while others send encouragement. “Live in the moment,” one reads.

A respite from the internet, Kind Words is not a game about winning or losing. Instead, it is an aesthetic experience where players practice being nice to one another. From actual people, letters share sentiments of gratitude and kindness. As I play, lo fi electronic music by composer Clark Aboud plays in the background. There are little to no toxic messages in this game. All correspondences are anonymous.

Players can also write and send letters back to the universe. These interactions are gently guided by “Ella the Female Mail Deer,” who shares hints on empathetic responses, as well as where to find mental health resources, if needed.

Players can also make, view, and respond to “requests” from

other players. Requests are share concerns and anxieties. Some are specific, others vague. One read, “I get so easily down and depressed. And because of that I can’t focus on anything. I just want to feel relieved and focus on the things that I want to do. I don’t know how to deal with that.” I responded with a note of understanding and encouragement.

Since its release in late 2019, Kind Words has received many accolades including winning the BAFTA Game Beyond Entertainment award. It has also been featured in The Washington Post and The Guardian.

Locked down on a COVID-19 stay-at-home order, I had played Kind Words to feel a sense of connection to others in the outside world. Like a mindfulness exercise, I took comfort in the game’s calm and inviting aesthetic. I also felt intrinsically satisfied sending and receiving noes of encouragement.

I spoke via Zoom videoconference with Ziba Scott, the game’s lead designer, to learn more about the design and impact of a prosocial video game.



Matt: What prompted you to make a game about kindness?

Ziba: Kind Words came from a couple of places. It was a reaction to the times, a reaction to politics of fear and exclusion and xenophobia, which is too rampant. We made this in America where politics is divisive, making it harder for people to empathize with each other, and to appreciate each other’s struggles. We also wanted to make a game where players could have an opportunity to exercise and understand hard parts of their own psyche, and other people’s lives.

Matt: Is Kind Words a multiplayer video game, or a new form of social media wrapped in mindfulness?

Ziba: Kind Words is a game because it is presented as a game. In a game, you expect a full sensory experience. Players come to it with expectations when they click the icon, and then it opens full screen. You’ve sat down at your computer where you go to for entertainment. You go to this spot where you will feel a sense of mastery, calm, and focus. I want you to feel all of those things as much as possible before you even start playing the game.

By using the language of games, players are presented with something they know they will be good at. It’s not there to challenge or to defeat them. The game comes at players with warm and positive feelings. Ella the Mail Deer, the in-game guide, walks players through the experience. All of these elements say to the player—clearly or subliminally—you’re going to be good at this, this is going to be an easy and positive time. This is a system created specifically for having warm feelings.

Matt: Kind Words is a multiplayer game with aspects of social media. However, there are constraints—players can’t like or share letters, or have threaded discussions. Why was it important that players remain anonymous?

Ziba: *Kind Words is anonymous for a number of reasons. First and foremost: safety. We are a small team; moderating conversations to make sure people aren’t preying on each other is very important.*

It’s also freeing to be anonymous, players can bring all sides of themselves. They are not trapped into one single persona of who they are in this game. People sometimes come in [to play] and behave poorly. People may have a bad day, and lash out at others. But we don’t ban people, we ban content. Very regularly, those same people calm down and come back and put out very sincere requests for emotional help. Or, they write about why they were so upset earlier. Then they get responses. That’s not just the anonymity that lets them do that—that’s the anonymity between the messages.

Matt: There have been about 2 million letters sent on Kind Words since launch last year. What are the letters generally about? Have the content of letters changed during the COVID-19 pandemic?

Ziba: Letters are often about interactions with other people: relationships, romantic and platonic. People write about love, work, family, general stress.

Anecdotally, COVID-19 has been a multiplier on existing stressors. People still want to talk about the specifics of their lives. They have an opportunity to write things like, “I’m afraid to come out to my parents.” Particularly now, because it is hard to find somewhere else to live [after coming out to unaccepting

parents]. But I don’t see people say everything was great but now COVID-19 is here. It is, “I’m having a lot of trouble and now it’s worse.”

Matt: In the game, players read and write letters from a floating bedroom. The bedroom is cozy, with stickers and decorations, and lo-fi chill music. With the current stay-at-home orders, are we all now in that floating bedroom?

Ziba: Yes, in some sense. But it’s a nice bedroom. We could have drawn the room to be a sad, dreary place. But who wants that? If we are controlling the metaphorical—verging on literal—representation of where we’re all at, let’s make it nice. That is what the game is about: We can choose how to present the world around us. People make a choice to be nice and kind in Kind Words. Many are surprised that that is the choice our players make. People are surprised that so many people are kind, but I’m not. It’s not just because you want the game to be nice, so does everyone else.

Matt: Kindness is empathy in action. How is Kind Words a practice space for being prosocial?

Ziba: *One of the things that makes Kind Words different from a lot from other cozy games is the real breadth of human experience that is in it. The content in Kind Words can be heavy. But that is what makes Kind Words a more rounded and human experience. It’s not escapism. It’s not empty cheerleading.* It’s not kindness just for the sake of putting on a brave face and moving forward with your life. Kind Words is like being stuck in your room trying to deal with everything, looking on the bright side, but also recognizing the dark realities.

People express relief when they finally have a place to talk about some of these topics. A lot of people have a support structure. They have a friend or family member to talk to. But some people are in real conflict with their families and immediate communities around them. They may be experiencing gender identity issues, or questions about religious beliefs.

I am pleased with the Kind Words community when I see someone come to it and express a sense of relief that they’ve found other people who are ready to listen and to acknowledge them. That is the dream realized for Kind Words. ►



How COVID-19 is Dismantling Unsustainable Elements of the Education System

AARYAN SALMAN



Aaryan Salman is the President of the Global Citizenship Foundation & Chief-Listener at the Global Debates. He is currently one of UNESCO MGIEP's Youth Leaders on the Prevention of Violent Extremism (2020) UNESCO-APCEIU GCED Youth Leader. Aaryan has previously served as the Program Development Officer at the Verbattle Foundation, Sub-Editor at the Outlook Magazine & Foreign Policy Analyst at the World Focus Journal.

Never in the last 100 years or more, have schools been forced into closure at such a massive scale. As of June 21, UNESCO estimates that 62.3% of percent of the world's 1.5 billion learners have been impacted by school closures in around 119 countries. At its peak in April, around 90.1 percent of learners had been impacted in around 194 countries worldwide. The coronavirus-related disruption is not yet over and for many educators, school leaders, and policymakers, this is an opportunity to rethink the way we educate and address the persisting gaps revealed during this crisis. Schools still aren't sure how they will open for 2020-21 and even if they open, many concerned parents feel that it is not a good idea to reopen schools and jeopardize the lives of young children. COVID-19 has exemplified the dystopian VUCA (Volatile, Uncertain, Complex, and Ambiguous) world around us. **This crisis has pushed us into a new era of teaching and learning where educators have been forced to reimagine education to suit the newer realities ultimately stripping elements that were not sustainable and peaceful, in fostering student agency and human flourishing.**

To give you a contrast, educators and policy-makers, for a while now, have been seeking a transformation in the way we educate. For instance, in 1971-72, UNESCO came up with one of its first reports "Learning to Be: The world of education today and tomorrow" followed by another seminal work the Delors' Report (1996) with the most recent being Rethinking Education: Towards a global common good? (2015) aimed at transforming education, there has been little progress in translating these recommendations

into reality for all of the world's 1.5+ billion learners. While everything around education has changed, the school education system has almost remained the same, continuing to divide knowledge up into siloed subjects, splitting up students by age, with the sage yet on the stage giving lectures and testing knowledge with exams. Many aren't even aware of the existence of these reports let alone the breakthrough ideas encapsulated within them.

In the 6th Online Educational Leadership Forum (OELF) panel discussion that we organized, I asked the panelists, their predictions about the future of education in the next five years. Here are five points from that discussion:

1. **Children will tell us what they want to learn (student agency).**
2. Teachers, students and entire families will become co-learners.
3. Schools will have their walls knocked down and be more community-centric.
4. There will be greater collaboration between teachers themselves, among schools, between teachers and students, and also with the larger society.
5. **We are moving towards a hybrid and blended system, It is not only about offline and online. This blending is between school and parents, student agency and teacher agency, cognitive skills and socio-emotional skills as well as the higher values and transversal skills.**

From my experience of being closely associated with schools, across education boards, what I am witnessing are two major

This crisis has pushed us into a new era of teaching and learning where educators have been forced to reimagine education to suit the newer realities ultimately stripping elements that were not sustainable and peaceful, in fostering student agency and human flourishing.

phases that most of these schools have charted through — the initial, survival phase (lasting initial four to six weeks of trial and error in the lockdown), where even those schools that had some level of online teaching before the pandemic, tried to translate their physical school into an online school with a similar daily schedule and number of classes. Realizing the unsustainability and incompatibility of pre-existing pedagogical approaches to the new medium, educators had to shift their focus from online schooling to online "learning". The outcomes of these innovations in pedagogical approaches and content delivery is a shift in the way they engage with learners.

Schools entered the second— rebuilding phase, where the long hours of online sessions were cut short by employing flipped classrooms, podcasts, peer-to-peer engagement, creative

pedagogies, etc. Schools have started paying closer attention to fostering socio-emotional skills and resilience amongst faculty and learners. **In some schools this has also translated into students gaining more voice and choice in the learning.**

Another domain that has been a gray area in the context of rethinking education is assessments. With online teaching and learning being a new phenomenon, another challenge schools have been facing is in ensuring that online assessments are both effective and relevant to the new medium. Given the nature of remote or online learning, educators are exploring the ways and means of embedding assessments in learning as opposed to assessments after learning in addition to ensuring that they are adaptive, responsive, and real-time in feedback. This in all probability will replace 'assessment of learning' with 'assessment for learning', moving education more towards a genuine learner-centered competency-based learning.

These changes, although involuntary and forced, have been dismantling the unsustainable elements of the education system, and bringing to life the very ideas that UNESCO and others seeking 'reform' have been demanding. With the tinkering and changes happening today, educators now have a stronger space to naturally foster in learners and young people the four pillars of learning — learning to do, learning to be and become, learning to know, learning to live together and help shape global educational priorities for the future. **However, the caveat is that, if schools are making these changes hoping that they'd be temporary, we may instead end up with more stifling and unsustainable elements within the education system.** What we have is a new reality that has opened our eyes to the chinks in the education armory. Going back to the pre-pandemic 'normal' education is neither sustainable nor in the interest of Generation Z, Alpha and beyond. ►

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Education for All in the times of COVID-19

MITHELA HAQUE



Mithela leads Power To Bloom, a youth-led initiative in her city Chittagong that provides awareness education on peace, well-being and child protection. She also co-leads project Stories for Peace which promotes peace education for children by storytelling. She envisions to promote and develop peace education with her work and research.

I was on the train back home from the university when I first saw news of closing down all educational institutions in Bangladesh due to the COVID 19 pandemic. That day, I had just finished preparing a lesson plan for the next class I instruct in an afterschool program and made some arrangements for the following national children's day program in a nearby underprivileged community. At the break of the news, we did not have a COVID positive patient in my city. Like many, I was hopeful that all would turn out alright; as things unfolded, everything did not turn alright. However, my life and field of work - education, is being transformed, reclaimed, reset, and rebuilt in this new era - for better or for worse.

All over the world, educators are striving to find alternative spaces to enlighten learners. *Online classes are taking place on zoom, Google classroom, Moodle, Whatsapp, and educators are using methods like-TBL and assessing students by iRAT and tRAT on digital platforms.*¹ The well-advanced global education systems transitioned to online teaching, learning, and assessment flawlessly.² We also created online storytelling videos for children on peace in different languages and organized live webinars for young people on Facebook on mental resilience, digital media information literacy, fake news. Various organizations in Bangladesh like Jaago, Teach for Bangladesh, UNICEF, and many more have emphasized digital classes and creative education contents to keep education alive. Government's a2i Programme of the ICT Division and the Cabinet Division with the support of NGOs is broadcasting classes on a Tv channel and online platforms.³ These initiatives are a light of hope for

the students and teachers and concrete proof that education can happen anywhere. Faculty of Law, Istanbul Bilgi University, rightly says that digitalization is no more an option, but an obligation.⁴

But another observation is these alternative digital educational initiatives are also creating educational inequality on top of the existing digital and economic divide - some are exacerbating it. The most recent data shows that only 59.6 % of the global population is active internet users.⁵ In Bangladesh, till March 2020, 61.94 million people out of 165.2 million population were out of any internet subscription.⁶ For example, most of the families in underprivileged schools and communities where we work cannot afford smart devices, television with satellite channels subscription, or stable internet connection to continue education at home. So inevitably, most of our online content made for children did not reach them at all. To reach remote learners, countries are broadcasting classes on television and radio, SMS, online seeding devices to peer-to-peer content sharing offline, free rating educational websites, free distribution of books offline and online.⁷ But there is not enough evidence yet regarding the extent of these innovations and initiatives reaching hard-to-reach learners. Along with these facts, being an undergraduate student and part-time tutor myself, I am witnessing a high level of anxiety, depression, fear among young students, children, teachers, administration staff and parents due to the uncertain education scenario that arose from the pandemic.

This challenge of reaching the unreachable, if not addressed, will lead to high rates of dropping out, child marriage, child labor,

There is an urgent need for better planning, need-based allocation of resources, advocacy, training, actions, and evidence-based evaluation.

mental health issues and youth engagement in crimes and violence. *Furthermore, it will lead to teachers or staff losing jobs or spending months without salaries, lack of attention to certain learners groups in diverse educational systems and exacerbation of gaps from different aspects in education picture of less developed countries like Bangladesh.* While there are many positive initiatives underway, we need more multi-stakeholders collaborations and innovations for better policy. There is an urgent need for better planning, need-based allocation of resources, advocacy, training, actions, and evidence-based evaluation. While we strive to rise to the challenge of virtual teaching-learning educational reimagination, we must ensure the wellbeing of learners and educators. This includes developing mental health guidelines and extending other pertinent support for learners and educators. This is the demand of the hour that authorities (especially in Bangladesh) need to address to keep the communities healthy, positive, resilient and able to rise to the challenge presented by the pandemic. ►

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Project-based learning: *Pushing Boundaries of the Traditional Classroom*

SEBASTIÁN HERRERA MEJÍA



Sebastián, Law student in Universidad de los Andes, is a 17-year-old from Cartagena, Colombia. He graduated from Colegio Montessori Cartagena in 2019. During high school, he developed an internationally awarded citizen science project, served as Secretary-General to his school's MUN, and was elected as the student's directive representative. He is currently undertaking an entrepreneurial project in photovoltaics.

The traditional teaching method based on imposed subjects and concepts has failed to raise individuals with internalized knowledge and to create new awareness.

This learning process settles on unilateral teacher-students interactions, in which information goes from the mentor to the pupils. And it's precisely that "monologue teaching manner" that hasn't fulfilled the learning needs of humans.

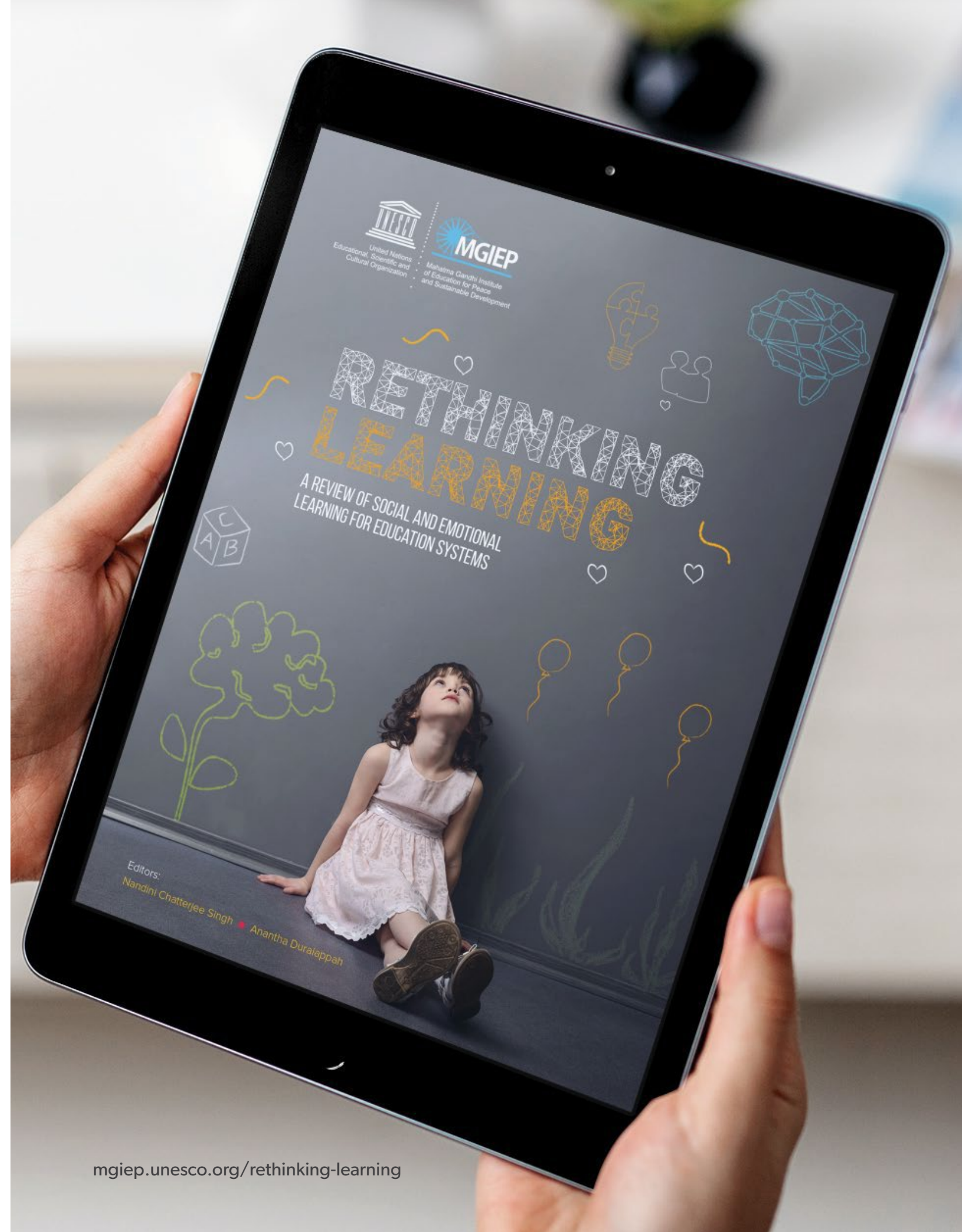
Learning shouldn't be a passive operation, a process in which the person only receives imposed data. Education ought to be a collaborative process driven by curiosity in which the person enables his capacities and skills throughout practice, investigation, and complex interactions. Therefore, project-based learning is the optimal way to promote enduring and innovative know-hows among society and, also a compelling solution to the educational crisis caused by the school's closure due to COVID-19.

Even during these uncertain times when students face despondency, shortage of apt devices for distance learning, and a lack of interest regarding schooling, PBL is a safe option to guarantee the youth's self-development. Given these circumstances, if the students can choose among their interests to explore, learn, and solve problems with the wise guidance of their teachers, following a clear plan and implementing an almost self-thought way of studying; then we could assure their motivation, interest, and effective learning. I had the invaluable opportunity to develop many projects during high school. Undoubtedly, what I learned through this process radically improved my abilities, changed the way I observe the world and, generally enhanced myself as a global citizen. For example: during my senior year in high school, I was the

Secretary-General of my school's MUN. In the making, I learned about global issues, international politics, transnational economic treaties, and social crises that would have been out of my reach by just committing to my usual homework. Due to the role I was playing, I got to learn, for instance, how to finance a project and manage a budget.

Furthermore, I also developed a project about the anthropic effect on the bird communities in Cartagena, which taught me a lot about ornithology, citizen science, investigation methodology, and the environmental and social reality of my city. But as well, it opened many other doors: thanks to this project, I travelled to Brazil to show our discoveries and compete with other international participants. In this trip, likewise in the advancement of the project itself, I could interact with different cultures and learn about various global and local issues from several perspectives.

In conclusion: **learning, according to our needs, should be an interpersonal process lead by curiosity in which the individual can develop his or her potential employing practical operations, investigation, and complex relations in a semi-self-thought line.** And for that purpose, project-based learning is the right path, creating abiding and innovative knowledge, and global citizenship. Moreover, during these uncertain times due to the COVID-19, PBL is an optimal alternative way to guarantee motivation, interest, and effective learning despite the general despondency and paucity of proper tools. ►





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In Memory of SIR KEN ROBINSON

*If you're not prepared to be wrong.....
you will never come up with something
original. By the time children get to be
adults, they have lost that capacity. They
have become frightened of being wrong.*

*Such a system educates people
out of their creative capacity.*

*I believe passionately that we don't grow
into creativity – we grow out of it, or
rather, we are educated out of it.*



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