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Best Practices of Online Learning in COVID-19

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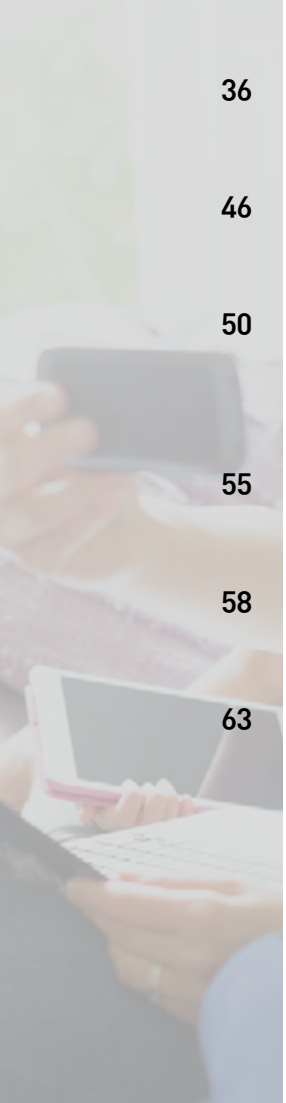
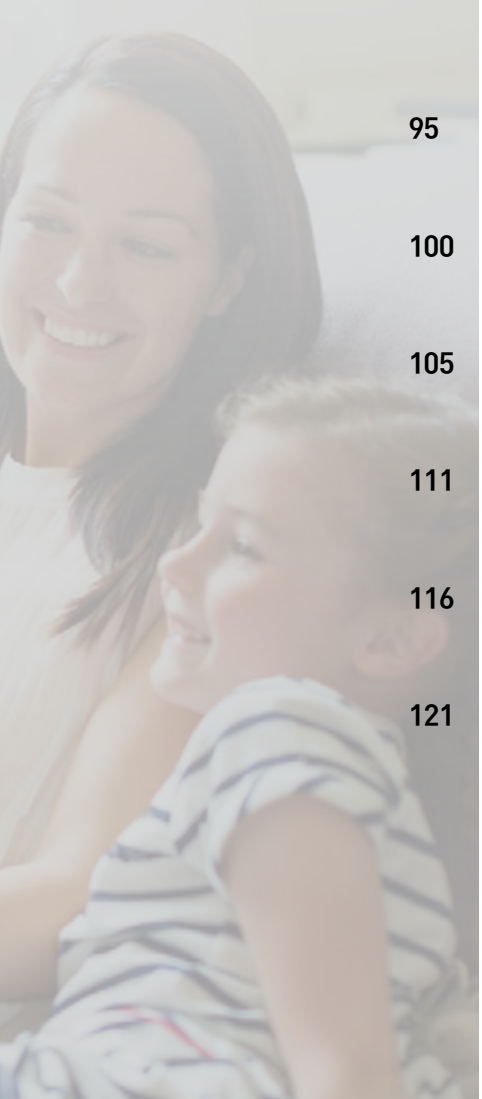


Best Practices of Online Learning in COVID-19



chapter 1

Digital Promise and Supporting Powerful Learning in the Era of COVID-19

Digital Promise, Director, Micro-credentials | **Odelia Younge**

*Previously published by Digital Promise

Lauren Williams, a fifth grade teacher in California, works in a predominantly Latinx and Black K-5 elementary school, where almost half of the students are designated as English Learners (ELs). When shelter-in-place orders went into effect in mid-March due to the COVID-19 pandemic, her school district gave her two weeks' worth of "one-size-fits-all" curriculum that needed to be adapted to fit a wide range of communities, classrooms, families, and students.

Williams fears that the nature of her school's digital learning is insufficient for ELs and that it has widened the gaps for students with disabilities. Moreover, her district's data shows that Black families in the district do not have consistent internet access to engage in digital learning. While the schools are doing the best they can, Lauren noted the hardest part of digital learning was that everyone was learning how to do it at the same time.

Williams's story is all too familiar in schools across the country, as COVID-19 forced educators and learners into a space of discomfort, fear, and inequity not conducive to learning. Her story highlights a few realities:

- **Widening inequities.**
  Black and Latinx students, students with special needs, and ELs are disproportionately left behind in digital learning. Their needs are not being met, and their homes often face challenges with connectivity.

- **Resource overload.**
  While many organizations and schools have assembled resources for digital learning, educators are overwhelmed by the amount of resources being sent their way and determining where to start and what is relevant.

- **Limited online instructional support.**
  In many schools, the structures and training were not there to support effective digital learning.

Digital Promise has worked alongside trusted partners to assemble high-quality materials, publish stories and resources, and advocate for the needs of learners during the ongoing COVID-19 pandemic. Some of those resources and advocacy include:

- The development of a COVID-19 Online Learning resources library

- A Digital Learning Playbook
- Resources for supporting learners with disabilities
- A Micro-credentials COVID-19 Library that curates which micro-credentials can be earned remotely or without face-to-face interaction
- A series of webinars focused on topics ranging from internet connectivity to device distribution, and much more

The following are a few previously published writings that highlight some of the ways that Digital Promise's work is meeting the real-time needs of educators and the wider education community during these unprecedented times.

Ⅰ. Transitioning to Digital Learning with Micro-credentials

(Odelia Younge, Kristen Franklin, and Dan Foreman)

The Verizon Innovative Learning Schools network, a collaboration between Verizon and Digital Promise, has worked to address the challenges outlined above to successfully roll out digital learning in under-resourced communities across the country. Digital Promise has identified critical elements of inclusive and equitable digital learning ecosystems by working with school leaders, teachers, and families over the last seven years. These learnings informed the five competencies in the "Transitioning to Digital Learning" stack, outlined below.

1. Conducting a Needs Assessment

While it is tempting to jump into the design and development of a digital learning ecosystem, conducting a needs assessment is a crucial step to better understand what motivates your learners and their wants and needs, and how to address an educator's potential biases or preconceived notions. This information will inform all decisions about digital learning and addressing gaps in digital equity.

2. Developing a Virtual Desk

Being organized is about more than easily finding what you need-it also includes equitable access to materials. A virtual desk is an online space where learners find and access learning materials. A carefully selected and well-developed virtual desk can promote engagement, foster open communication, and support developing content that can be accessed by all learners.

3. Designing Synchronous and Asynchronous Instruction

This micro-credential supports educators in considering their own needs, as well as those of their learners and their learners' families, when designing synchronous and asynchronous instruction. It also discusses digital classroom culture and management, and how to develop community agreements to support families' and caregivers' roles as partners in this work.

4. Communicating with Learners and Families

Developing a regular schedule to communicate with learners and their families outside of synchronous learning sessions fosters a strong home-school connection, builds authentic relationships, ensures open and transparent communication, and creates a strong community of support for learners.

5. Engaging in Continuous Improvement

In this final micro-credential, educators evaluate the effectiveness of digital learning to support all learners, reflect on their practice, and use the data to develop goals and pursue relevant professional learning opportunities for continuous improvement.

Underlying issues of equity in education became glaringly evident in this pandemic. Due to the various levels of preparedness of schools and districts for digital learning, the old disparities became an even wider chasm for students of color, students with disabilities, ELs, and the thousands of students living in households that lack internet connectivity. While completing the "Transitioning to Digital Learning" stack, educators will collect evidence of using data to make informed decisions and take action that specifically supports these populations of students

6. Meeting the Challenges of the Moment

No one knows what the school year will look like this fall. We do know the challenges of transitioning to digital learning do not exist in a vacuum, and we must continue to push for federal support to connect all families to the internet.

But, in the meantime, we can prepare; digital learning has the potential to be a space of inclusion and equity if we plan for it. The first step is making sure every educator has the skills to transition to digital learning with a lens toward equity and access for all learners and their families.

Ⅱ. How to Prevent Data Collection Disasters in Education

(John Seylar)

How can educational researchers ensure continued data collection in the wake of COVID-19?
Digital Promise's Learning Sciences Research team is experiencing what many educational researchers are familiar with by now–an untimely intrusion by the COVID-19 pandemic that compromises data collection at the end of the school year. This is an especially painful prospect for projects using a pretest-posttest design. You may feel like your response rates are hurting; so are your respondents, many of whom are adapting to rapid changes in their practice. For most researchers, cancelling end-year data collection altogether would amount to scrapping a year's worth of work and is simply not an option. In this case, damage control is the only alternative.

Below I share some recommendations for this delicate, and sometimes difficult, work. Rather than advice for achieving pre-COVID-19 response rates, I offer methods, which have been tested in my own work with the Dynamic Learning Project, that can help mitigate the damage to your response rates while respecting and maintaining the all-important relationships you have built with your schools and districts.

1. Extend, don't delay

While your first instinct may be to delay your data collection period, this will likely not help much. Teachers are certainly scrambling right now, but they will probably still be scrambling for some time. Instead, consider extending your data collection period to a series of several weeks, or even months. For our project's end-year collection, this meant lengthening our collection period from our usual three weeks to almost three months. While we still don't anticipate the response rates we have enjoyed in past years, we believe extending our collection window will give us access to more data than we would have collected with our previous plan.
Extending your collection period will give your population room to breathe and the opportunity to respond when they can, rather than receiving the usual barrage of reminders and heads-ups.

2. Integrate with existing communications and routines

Even under normal circumstances, a teacher's schedule is a fragile balancing act. When it's disrupted, external obligations (such as surveys from researchers) are often tabled, sometimes indefinitely. If possible, try to integrate your data collection with the routines your participants have already established.

For example, many teachers fill out one or more year-end surveys sent to them by their schools or districts. If your end-year instruments include a survey, it may be possible to add your survey questions to a form that teachers are already taking. This eliminates the need for a distribution and follow-ups from your team, and lightens the load that teachers shoulder.

3. Be agile, receptive, and conscientious

COVID-19 is forcing everyone to put our best-laid plans aside and be creative and responsive. The circumstances of schools and districts are constantly changing, and we have to be ready to change with them. This might mean multiple distributions of an end-year survey and closely monitoring communications to respond to participant questions and concerns in a timely manner.

Think critically about what is absolutely necessary for your data collection, and be prepared to shift plans to meet participants where they are. In the event that you receive an unreasonable request (such as an extremely delayed distribution), explain why you can't make that accommodation and offer a compromise. We hope these recommendations will help you in any data collection efforts you have underway. These recommendations are good practices for any research project, but applying them during a crisis will substantially strengthen your relationships with your participants. Stronger relationships will make future collaboration more likely, build trust, and lead to richer and more powerful research for schools.

Ⅲ. How Coaches Help Teachers Gain Confidence with Technology

(Angela Hardy)

We know technology can be a transformat ional tool for improving student achievement and engagement, and for driving school innovation. However, districts lose millions of dollars each year in unused education technology products, often because teachers lack professional development support that can help them overcome their fears around incorporating technology tools in their teaching practice.

Our research on the Dynamic Learning Project pilot (DLP) shows that when teachers have access to classroom technology coaches, they are more open to trying new technology tools and more empowered to use those tools in impactful ways that drive student engagement and learning.

Coaches provide a safe environment for experimentation and growth

Trying something new can be intimidating, especially when teachers are concerned about how to salvage

a lesson if use of a new technology tool fails. As one DLP teacher put it, "It's a little nerve-wracking when I'm learning a new tool and the students are learning it at the same time." Coaches ease these fears by providing teachers with low-risk opportunities to try new strategies and tools with a safety net. Prior to implementing a new tool in the classroom, they can meet with teachers one-on-one to practice its use. During implementation, coaches can model use, co-teach side-by-side, or observe the teacher while poised to jump in if necessary.

One coach explains it to his teachers this way: "I'm going to ask you to try something new that you've never done before, but I have skin in the game, too, because I'm co-teaching with you. If it's a complete disaster, you have another adult in the room to pull you out of the tailspin." If a lesson fails, or if the teacher needs to adjust course part-way through, the coach serves as a thought partner to reflect with the teacher afterward on what can be learned from the experience. In this way, said another DLP teacher, the process of collaborating with a coach "really removes a lot of the anxiety around using technology."

One early career high school math teacher was afraid that if she used technology to give her freshman students more independence and agency, productivity in the classroom would decrease. To assuage this fear, her coach suggested starting small with just one class period. Together, they piloted a "choice menu" of technology tools that gave students "the opportunity to choose from a few different avenues of displaying mastery." Then, they met to discuss what worked and why, and to troubleshoot issues that arose. Seeing initial success with this "beta test," the teacher began to feel more at ease "letting go of the reins" and making her classroom less teacher-directed. By the end of her collaboration with the coach, the teacher found that her initial apprehension had not been warranted; she reflected that "using technology to give students the opportunity for choices and creativity really leads to more engagement. Their grades have gone up. The quality of their work has gone up."

Coaches address teachers' fears of losing control

Teachers are often afraid to try new technology tools because they worry they will lose control of their classrooms. Over the course of two years, we conducted 14 student focus groups to better understand this teacher concern from the perspective of students. The students we spoke with agreed that technology use during class can sometimes be a distraction and provided examples of "annoying" and "disrespectful" behaviors by their classmates, such as using technology to listen to music, send messages to their friends, or watch Netflix, rather than participating actively in a lesson. However, they went on to explain that these distractions occur when they feel their classwork is boring and irrelevant to their lives, and that this misbehavior is much less likely when lessons are engaging and they "actually

have a motive to learn."

These insights from student focus groups highlight the importance of designing engaging lessons and being responsive to student voice in how technology is harnessed in the classroom. An effective technology coach works with teachers to incorporate new technology tools in impactful ways that drive student engagement and learning.

Districts are more likely to see a return on investment in new technology when they provide teachers the support they need to implement it in their classrooms in ways that improve student outcomes. By harnessing the power of classroom technology coaches, districts can empower educators to overcome fears around using technology

Ⅳ. Making the Most of Distance Learning: 7 Tips to Share with Parents (Windy Lopez-Afflito and Missy Bellin)

Digital Promise and our partners Learning Heroes teamed up for a special blog series that explored how teachers and families can use technology to work together and facilitate learning for students of all ages.
Health and safety concerns, digital learning hiccups, and last-minute changes have already made this school year challenging for parents and families. After months of change and uncertainty, many students are feeling the social-emotional and academic toll. A recent study shows that some students may have started the school year as much as a full grade behind in math, while many still lack full access to high-speed internet, a device, and the guidance needed to use them.
These challenges are real. But this school year also provides a unique and important opportunity to do what has always mattered: strengthen partnerships between families and schools. Technology can play a fundamental role in building and maintaining these relationships. With digital tools and resources, teachers, parents, and families can stay connected and support learning in new and exciting ways—anywhere, anytime.

Technology can help students of all ages:

- Get personalized support through customized lessons and feedback from teachers based on individual needs
- Improve understanding through interactive learning environments, including animations, videos, and simulations of concepts
- Stay socially connected and engage in problem-solving and team building activities with classmates,

teachers, and even other learners around the world
- Practice critical skills by using tools for organizing, researching, writing, publishing, creating, and more
- Easily access real-world learning materials like video tutorials, primary and secondary sources for research projects, museum collections, historical sites, and digital books, available online and often for free

To get started, here are seven ways that families can support their child's learning at home. Share these with parents and check out the helpful resource links in each tip.

1. Get connected. Many at-home learning activities require a high-speed, reliable internet connection. You can find free or low-cost internet service options in your area using the search tool at EveryoneOn. If you already have service, make sure it can support your family's increased online activity and that you won't exceed your data limit (if there is one).
2. Read every day. Encourage your child to explore new hobbies and learn more about their interests by reading or listening to audiobooks that are both nonfiction and fiction. As much as possible, read with younger children for at least 20 minutes every day. Older children can also read independently for at least 30 minutes daily. Reading materials can include print or digital books, graphic novels, magazines, and online articles. Ask your local library about access to free digital or audio books.
3. Boost vocabulary and knowledge of the world by talking with your child. This will help your child with communication skills and reading. Build conversations around your child's interests and activities. For example, after watching a TV show or reading a book, ask your child questions about the main idea, the characters, what they learned, and what surprised them.
4. Turn everyday (offline) routines, activities, and materials into learning moments. For younger children, practice fractions and measurement while cooking, make bubbles or playdough, write songs together, or explore nature by noticing the changes in trees or neighborhood plants, observing birds, bugs, or other creatures, collecting rocks, and more. For older children, support life skills by making food from family recipes, talking about current or historical events, or practicing public speaking for presentations.
5. Focus on key skills. Have your child take this Readiness Check to see how they're doing with key math and reading skills and to get resources that will help set them up for success this year. Share the results with your child's teacher(s) to help them see where your child is doing well and where support is needed.
6. Let your child show off what they know. After they read or finish an activity, ask them to teach what they've learned to you, a family member, or friend, in person or virtually. That way, your child can review important skills, build confidence, and bond with those around them.
7. Support life skills that help your child in and out of school. Show your child how to solve problems, learn

from mistakes, and communicate well with others, especially during hard moments. Ask your child to help out the family with age-appropriate household chores, like setting the table for dinner, cleaning up after an activity, or feeding a family pet to promote responsibility.

Ⅴ. How Community Coalitions are Bridging the Digital Divide

(Cricket Fuller)

Across the country, local networks known as Education Innovation Clusters (EdClusters) are bringing together partners and resources to meet urgent needs and envision a new future for teaching and learning. Many of these efforts are rooted in long-standing partnerships across sectors and institutions.

As COVID-19 disrupted the lives of students, educators, and families earlier this year, EdClusters sprang into action, leveraging their capacity and reach in ways their networks were uniquely ready to do. Their collective efforts are meeting a range of needs—from internet access to devices to social-emotional supports. As schools prepare for uncertain and complex reopenings, we turn to Kansas City and Rhode Island for powerful examples of community in action.

Tackling the Digital Divide with Device Deployment in Kansas City

When schools closed in mid-March, Kansas City was confronted by the region's deep digital divide. LEANLAB Education has long cultivated a network of educators, policymakers, funders, researchers, and entrepreneurs across the region. Witnessing how many students lacked access to the most basic components of online learning—devices and internet access—LEANLAB and their partners across the metro region took immediate action.

LEANLAB founder Katie Boody explained, "We recognized that with school systems facing tough decisions about building closures, many families without internet access would be disproportionately impacted—teachers wouldn't be able to extend distance learning activities fairly, nor conduct welfare check-ins with all families."

LEANLAB surveyed schools and families across 22 school districts, including 17 charter schools, representing more than 60,000 students; the survey revealed more than 2,500 students without devices and 12,757 students without internet connectivity. In addition to food distribution and social-emotional support for students, families indicated device and connectivity disparities as a critical need as schools shift to digital learning.

In response to the urgent need, LEANLAB worked with local philanthropy and the SchoolSmartKC coalition

to fund and disburse emergency technology relief for the region's most vulnerable students and families. By May, they had deployed more than $1.5 million in funds to provide 1,528 laptops, tablets, and devices, as well as 869 hotspots for local students. In addition, LEANLAB worked in partnership with school leaders to develop a bilingual survey tool to assess families' needs, provide procurement research, and conduct collective price negotiation with vendors to help smaller schools achieve a fair price per student.

Partners across the network stepped up to support connectivity efforts. The Kansas City Coalition for Digital Inclusion, for instance, coordinated the efforts of local organizations, including the public library system, transportation authorities, nonprofits, and private industry, to provide emergency connectivity and technology to students and families in need. Connecting for Good secured donations of devices and hotspots from local businesses and government agencies, and distributed to families with students. The Kansas City Public Library system made open-access WiFi available 24 hours a day in the parking lots of all branch locations. Kansas City Public Schools and Student Transportation of America placed WiFi-equipped school buses at library locations throughout the city in areas that were identified as "digital deserts."

LEANLAB released a series of recommendations as part of a new report on the impact of distance learning on teachers and the immediate technology needs of schools. By the end of the spring, they had addressed some of the immediate learning needs for the region's most marginalized students and families. A resolution was recently approved by the city council that would develop "public-private partnerships to effectuate digital equity for residents, students and small businesses in Kansas City." But LEANLAB knows that much work remains to be done. "It's important that we all realize this is a temporary solution to a systemic problem," explains Rohan Pidaparti, manager of innovation programs for LEANLAB. "There's still a greater need for significant infrastructure investment."

Supporting Families with Statewide Helplines in Rhode Island

In Rhode Island, the EduvateRI coalition has long cultivated a network of educators, policymakers, researchers, and community organizations across the state. Initially launched by a collaboration between the Highlander Institute and the governor's Office of Innovation, the network was poised to respond quickly to the needs of educators, learners, and families across the state when the COVID-19 crisis hit.

As districts shifted to digital learning in the spring, schools strived to ensure teaching and learning continued. Teachers needed more training and assistance to develop remote-friendly lessons, and students and families struggled to access the round-the-clock support they needed.

Immediately, the Highlander Institute created a teacher distance learning helpline that has received

hundreds of calls. Highlander has supported educators across the state in implementing personalized and blended learning for years, but it soon became apparent that parents also needed support to help them sort through the "information noise" and connect them with solutions. Within days, the governor's Office of Innovation worked with Highlander and their networks to create a parent version of the helpline.
Dana Borrelli-Murray, Highlander Institute's executive director, explains, "Even the strongest distance learning plans face implementation hurdles, and it is collaborative, cross-district, cross-sector partnerships like these that will ensure we meet the challenges of distance learning head on."

It truly has been a collaborative approach. Volunteers for the hotline come from all over the network, including 20 librarians from municipal and community libraries, Highlander's network of Fuse Fellows, and members of the Rhode Island Parent Information Network (RIPIN), who help parents answer special education-related questions. The Rhode Island Department of Education (RIDE) and Department of Human Services repurposed state contracts to provide interpretation services in more than 200 languages. The state's Commerce Corporation leveraged technology for small businesses to help parents access free tech support from RightClick. And a dedicated staff member from RIDE helps answer questions that are more regulatory or legal in nature.

Fairchild notes, "A colleague recently told me that during a crisis is when innovative efforts can truly take hold—but only if they have been well-seeded prior. The RI Parent Distance Learning Helpline is a perfect example of this—and of the networked approach to supporting education for all our students."
Collectively and individually, the work of these local education communities proves the value of network-building and offers inspiring models for how other regions can deploy these kinds of partnerships in support of learners and communities amid ongoing crises.

Ⅵ. Education in the Era of COVID-19: Why Connection Matters

(My Nguyen)

With digital learning likely to stretch into the fall due to COVID-19, how can we ensure every student has equitable access to powerful learning opportunities?
The crisis has shone a harsh light on the digital divide in the United States, surfacing thoughtful debate and long-overdue discussion around the equity gap. Millions of students—particularly those from rural communities, low income families, immigrant families, and families of color—lack a reliable at-home internet connection, a critical need to continue their powerful learning outside of the classroom.
For superintendents in the Digital Promise League of Innovative Schools, this is an opportunity to examine

and reimagine their education systems under new constraints.

The Equity Gap and Digital Divide Creates a Disconnect for School Districts

"Right now in America, you don't have a choice but to really look at who has and who doesn't have," said Marlon Styles, superintendent of Middletown City School District in Ohio. "Personally, I don't believe people took the equity and access gap as seriously as they should have in the past because it wasn't smacking them in the face."

In Middletown, where every student qualifies for free and reduced lunch, Styles and his district leaders and staff are responding to families' basic needs first, and working to address the community's most urgent and pressing challenges.

"Folks are trying to purely survive right now," said Styles. "The pressure put on a family, to tell them [they're] responsible for pushing and driving [their] kid to try to engage in these activities, is definitely a barrier that we struggle with. On top of that, knowing we've got an equity gap that exists in our district and that about 1,200 of our kids don't even have access [to technology and the internet] was a tough pill to swallow. So, we've been trying to advocate for those mobile hotspots. We continue to just stretch our brains creatively about how to, in a very safe way, get those students access to resources."

To get students connected, the district installed community WiFi access points at each of their schools and their local football stadium. And earlier this month, Styles advocated on a national stage by testifying before the House Committee on Education and Labor about remote learning and the reality for students and families in his community, addressing the equity gap, digital divide, learning loss, and other requisites for positive learning environments.

A lack of connectivity is a challenge that Gudiel Crosthwaite, superintendent of Lynwood Unified School District in California, is all too familiar with.

Crosthwaite said, "[Lynwood is] a community with very limited resources, completely underserved. Our plan this year was to roll out devices so that we could become one-to-one by the end of the year. So, we had the devices, but the internet connection has been challenging. We are still trying to figure out how we ensure that students truly have access because it does us no good just to have devices, and it's hurting kids because they're not able to log-in or check-in with their classes."
The challenge also extends to the district's teachers.

"We also assumed that a lot of our educators also had [internet] access, and we provided devices. What we discovered during this process is that··· some of them just didn't even have internet at home, or at least a WiFi option, so that they can connect their district–issued device," Crosthwaite shared.
Obstacles don't necessarily end when connectivity is available, either. In Owsley County, Kentucky, where the median household income is $15,805, many families are unable to afford the monthly fees.

"The biggest problem that we've had with the few kids who don't have access are the contracts that the companies have to have to get those installed. So, in other words, we're looking at a two–year contract for getting the mobile hotspot set up in homes that are eight or 10 miles away from our little town," said Tim Bobrowski, superintendent of Owsley County Schools.
He added, "We have the bus drivers and the cooks taking homework and packets back and forth. That kind of helps us all try—and then the key word is try—to get our kids to respond positively."

Connection Matters More Than Ever

Without access to the internet, students also miss out on meaningful interactions with teachers and peers that are critical for social, emotional, and mental well–being. To offer support in this area, Lynwood Unified School District set up a mental health hotline.

Crosthwaite said, "We have our social workers and counselors responding to answer those calls. Our district has a robust health collaboration with about 50 different agencies that provide additional services

Owsley County Schools Food Service employees deliver meals and packets to students across the district.

and support to our students and families, [including] support for drug deterrence, mental health, and other issues that may come about in the community."

"Trying to serve as a bridge between students and families and these agencies has been very critical for us," he added. "As people get displaced from work, and they have family members or loved ones who are ill or not able to cope with some of the other stressors, we're reaching out to our partners to expand this as a resource for our community. Internally, we have a lot of capacity; but the reality is that we're not necessarily the experts in those fields. Being able to rely on them in times like this is critical."

Michael Nagler, superintendent of the technology-forward Mineola Union Free School District in New York, believes schools should prioritize students' social and emotional needs now while looking ahead to the fall.

"Isolation for anyone is very difficult, and we really need teachers to call kids, make contact, check in, make sure they're okay, and refer [them] to people who can help. That's got to be the emphasis now, in the short and long term," he said. "The emphasis has to be on the social-emotional welfare of our kids. It can't be on

Students show their Mineola pride by wearing school colors on Zoom for the first day of spirit week.
(Note: This photo has been edited to blur student names.)

academics, because it's not the same thing as school."
In April, the district hosted a virtual spirit week to boost morale and maintain a sense of community while classes are apart.

Nagler said, "We had different activities, and I made a video every day to kick it off. I know my teachers are doing a lot I saw a couple of them had Costume Day or Mustache Day, and every kid in the class when they logged on had their costume or their mustache on and it just brings a sense of community."

Mary Wegner, superintendent of Sitka School District, agrees that positive connections are crucial during this time. "We are trying to balance academic as well as social–emotional learning. We like to say we're 'socially connected, physically distant,' instead of social distancing, because human interaction is just so important."

In addition to providing food for families, the Alaska–based district is working to ensure that every student experiences a daily, positive connection with a caring adult or member of the school community. "Mental health providers are doing circle groups with some of our at–risk students," Wegner added.

Sitka School District prepares for meals on April 7, 2020. Students receive four days of meals during distribution.

Marlon Styles believes these connections are simply an extension of the "high-quality cultures that exist in school buildings."

"We're good at this kind of stuff in education," he said. "I've seen a little bit of everything—and I'm not just speaking about Middletown, I'm talking about southwest Ohio. I've seen teachers mailing personal letters to families, obviously targeted for the student, to engage them and stay connected. I'm seeing our middle school counselors reach out to kids and have virtual counseling groups, which I think is pretty creative. The intent behind it, again, is that social-emotional piece, to make sure you've got a positive role model to stay connected to during this time."

Styles added, "As our bus drivers get out to the different drop-off stops for meal distribution, we've seen messages written to them and pictures drawn with sidewalk chalk, sending them a thank you. Prior to spring break, we had a virtual district-wide fire drill. Educators are really good at having fun in the walls of our school. It's just been a joy to see educators across the country, on social media specifically, just celebrating the positive cultures and what they do inside their school buildings with kids, because even from a distance it's been a pure joy."

From left: 1. Staff from Creekview Elementary School in Middletown post selfies during the district-wide fire drill. 2. Students leave messages drawn with sidewalk chalk to thank Middletown bus drivers.

Connect Kids Now

League superintendents are committed to viewing this time as an opportunity to demonstrate the importance of courageous and empathetic leadership, especially around issues of access.

In an effort to advance digital equity and close the Digital Learning Gap, the League of Innovative Schools released a statement collectively calling for universal access to the internet and technology for every student and their families.

In addition to universal internet access, the network is calling for an expansion of the E-Rate program, special funds to support procurement and teacher training for public school districts, and measures to ensure sustained access throughout a student's K-12 experience.

"Anyone can lead when there are a lot of resources, but leading during a crisis is really what it's all about," Crothswaite says. "It's an opportunity for us to revisit and reflect on our current practices and ask ourselves, 'How do we do a better job of centering our conversations on our kids? On our staff? And the community?'" Styles said, "I think what this [shutdown] has done for us as a profession, is it has reminded us why we got into education. And it has showcased how much educators truly care about all kids—all kids. I think it's

Teachers and staff in Lynwood Unified School District organize a car parade to connect and say hello to students and their families, who were happy to see them from afar.

allowed us to become a kid again and show how excited we are for working with the youth in America. I hope that we keep that re-energized 'Why?' on fire, as we get back to having kids in the building."

To learn how districts in the Digital Promise League of Innovative Schools are advancing excellence and equity for every learner, view the virtual town halls and explore the Innovation Portfolios.

Connect, Adapt, Try New Things

Norwood Schools, Bethesda, Maryland | **Vicky Masson**

As educators, we have choices on how we teach, but we tend to resort to what we know or what we think works best. We are usually content on what we are doing.

And then... you hear a knock on the door. It's a new challenge: a new boss, an interesting course, or even a pandemic! COVID-19 has challenged us all in our personal and professional lives.

What if we decide to see this challenge of teaching in a pandemic as an opportunity?
With new eyes, the challenges of teaching in a pandemic are no longer disguised but are now opportunities to connect differently, adapt, and try new things.

I. Connect

As the pandemic grew in scope and size, connecting with groups, organizations, and other educators became crucial. I purposely connected with great thinkers and feelers which helped me transform the way I see education during these unprecedented times. Connecting served to answer my key question of "Why do I do what I do?"
Three of these organizations became my support system all along during these tough times.

The Greater Washington Association of Teachers is a language organization serving the world language educators since 1965. It provides professional development and advocacy opportunities for World Language teachers and it envisions language educators collaborating and advocating to develop passionate global citizens. I am part of the GWATFL Board, and as such, I connected with many language professionals that kept me on the forefront of teaching languages, spotting trends and best practices on teaching and learning.

The goal of Leadership Initiative for Language Learning is to 'empower individuals to become agents for change, in order to foster a growth mindset focused on effective teaching and learning, and purposeful nurturing of leadership skills, all in the service of learners'. Through its summer and fall initiatives, LILL connected me to the top minds in teaching languages in the United States and inspired me through these hard months to do my best.

The HP Teaching Fellowship supports innovative teachers across the United States and Canada who demonstrate powerful teaching and learning with technology. I gained understanding, knowledge, and skills on how to incorporate relevant technologies into my language classes, in an efficient, effective, and transformative way, all while collaborating with other HP Teaching Fellows. It helped me to aim to use technology to constantly inspire my students to transform the world as agents for change. Having a clear understanding of why connecting with peers is fundamental, moreover during a pandemic. Connecting has centered my purpose.

Ⅱ. Adapt and Try New Things

In the midst of this pandemic, I immediately understood that I needed to do things differently and was thrust into teaching virtually in a matter of days like so many. In this moment, I asked myself, "How do I adapt how I teach to serve my students?" and "What are the best educational technologies to do so?" GWATFL and LILL showed me the way when it comes to teaching languages, but the HP Teaching Fellowship taught me the Digital Promise principles of Powerful Learning: personal and accessible; authentic and challenging; collaborative and connected; and inquisitive and reflective.

The following are some examples of Powerful Learning experiences I implemented during COVID-19 for teaching a language in a class for second language learners.

Ⅲ. Personal and Accessible

Challenge Based Learning provides a framework to act. We, as HP Teaching Fellows, embarked in a CBL Nano-Challenge with the purpose of exploring the idea of building positive relations with students in distance learning. Stemming from the essential question, "How do we build trust for student learning?" We created a lesson plan to help build a culture of trust so that students feel safe and supported while in distance learning. One of the most impactful parts of the lesson was using the Harvard Project Zero Thinking Routines, 'Root Cause of Trust.' It helped students open up and see that I really cared about building a connection with them and allowed a classroom culture where learning would happen. I used Teams, OneNote, and Zoom BreakOut Rooms for this lesson. These edtech tools became the backbone of my teaching.

Ⅳ. Collaborative and Connected

This school year, my class is participating in "Single Voices Global Choices", a global and collaborative project for middle and high school students. As part of this project, we collaborated with a school in Spain to celebrate National Poetry Day through students' own creation of "Blackout Poetry." Blackout poems can be created using the pages of old books or articles, poets isolate, then put together single words or short phrases from these texts to creat something totally new.

What a powerful experience! It was the first time that both schools across the ocean were creating poetry using this technique. All my students used the same text and it struck them the wide variety of poems that they created.

I decided to use Wakelet to collect information about Blackout Poetry to help create the lesson. Students used OneNote to create their Blackout poem on a Newsela article and then used Flipgrid to record themselves performing the poem.

We decided to publish students' work on Padlet. Why Padlet? Padlet allows you to create a "digital wall" that has images, links and videos. We created a virtual wall with blackout poems as graffitti.

When reflecting on the project, students expressed how connected to the other class they felt throughout the project, that knowing that they were creating for an audience outside the virtual classroom wall to present their project made them put their best effort. They also realized that learning a language takes time and effort when listening to their partner class reading their blackout poems.

Ⅴ. Inquisitive and Reflective

"Design it Yourself: Mini-exhibit" by the Cooper Hewitt, Smithsonian Design Museum
was a wonderful project to start the school year while distance teaching/learning as students had to design their mini-exhibit using items found at home. Through a series of questions such as, "What objects will best tell your story?' and 'How will you arrange your objects?"students created their mini-exhibit. I gained an understanding of their language level but most importantly I got to know my students! Apart from learning about design and other people's exhibitions, students created a Flipgrid explaining their mini-exhibit and they also reflected on the process and product using a Microsoft Form. The form intentionally included questions such as, "How do you feel about the project? What makes you say that?, What do you think about the project? What do you wonder about?, Has this project transformed the way you see the world? and What did you learn about yourself?," which opened a window into my students' souls helping me understand them better.

Ⅵ. Authentic and Challenging

I am now in the process of implementing a Challenge Based Learning Nano-Challenge project with my new Spanish club at school. This club is a chapter of the Sociedad Hispánica de Amistad under the AATSP (American Association of Teachers of Spanish and Portuguese). It is an after school activity-based club with the objectives of becoming ambassadors of the language, providing service to the school and service to the community. The members of this club brainstormed what activities they wanted to do this year. Among the activities, they want to connect with other Spanish-speakers in the community. We have started our Nano-Challenge with the Big Idea of Connections, the Essential Question of "How do we invite people from our community to speak Spanish with us?" and the Challenge to design learning experiences to connect with Spanish-speaker in our community. It is my first time teaching through a CBL. We have just started and I decided to trust my students and to trust the process. The educational technologies that we are using are Teams, Zoom, and OneNote to communicate. We are creating a Sway to document our journey.

Teaching in a pandemic made me grow as an educator. It affirmed that, as an educator, I have embarked on a road of never-ending learning myself. I am ready to keep on seeing challenges as opportunities. What are you doing in these challenging times?

Meeting the Challenges of Virtual Learning through Micro-credentials

Fallsburg Elementary School Louisa, KY | **Wrendi McDavid**

Teaching in a classroom pre-pandemic seems like an eternity ago. In March 2020, I was near completion of my eleventh year of teaching. My schedule was packed with activities both inside and outside of the school. State testing was coming up soon, and stress levels were increasing as end-of-the-year activities began being scheduled. My two children at home (who were two and three at the time) required an unlimited amount of my attention. What I wouldn't have given to have a break from all of the hustle and bustle of everyday life around that time. I will never forget being in the hallway at school when our principal explained to us that our schools were going to be closing for two weeks. The world was closing down around all of us simultaneously. The break I desperately needed quickly became a hiatus without an end in sight. As the months passed and cases of the coronavirus were rapidly rising all around me, I found myself regretting so many aspects of the 2019-2020 school year, and knew that I would need to dig into and modify the tools I have been carrying in my teacher toolbox since I entered the classroom in 2009. I lovingly refer to the 2020 spring pandemic teaching as "emergency teaching". With such short notice of closure, I created lessons on the fly that could be completed at home. This continued until the school year ended. Not every student had the internet at home. Some students had the internet, but no proper device to complete complex assignments. We all knew that we had to do better in the fall since the pandemic's end did not appear to be in sight. "Emergency teaching" was not going to suffice.

A few months prior to the pandemic, my principal encouraged all staff members to complete a micro-credential called "Building Relationships". The micro-credential was created by the Kentucky Valley Educational Cooperative (KVEC) through the Digital Promise platform. This particular micro-credential developed my skills in building relationships with rural students from poverty. I focused on two areas of improvement-- connecting and engagement. The skills that I fostered while completing the micro-credential gave me the confidence to face some of the biggest challenges that come with virtual learning.

To increase my skills in connecting with students, my principal and I worked together to build time within the school schedule for middle school students to meet with adults in the building weekly. In small groups, the students worked with an adult within the school to focus on relationship-building. We learned very quickly that explicitly setting aside time to get to know students would pay in large dividends as we saw the confidence of the students increase because they knew that they had an adult in their corner. When we switched to virtual learning, I knew that building relationships with the students was more important than ever. Teachers must keep in mind that although our methods of delivering instruction have changed, time

must be set aside to get to know the students on a personal level. Taking the time to get to know a student does not cost any money, and does not have to involve any preparation from the teacher. If you have several students that are less outspoken than the other students, I would highly encourage a small group live meeting to give those students a safer space to talk about themselves. Taking the time to build those connections could allow the student to open up to the teacher, and create open communication that can lead to better performance from the student. If time or scheduling prevents you from having small group sessions, consider giving an interest inventory to the students to complete virtually so that you can learn valuable information about what students like and dislike. This year, the very first assignment I gave the students was the task of decorating a virtual locker. In the assignment, I asked the students to find pictures on the internet that represent their hobbies and interests to put inside of their virtual locker. Not only did I learn a great deal about my students in one assignment, but I was also able to teach them technology skills that may not have been explicitly taught otherwise. Since they learned how to create and manipulate items on Google Slides, assigning projects using Slides is now less of a daunting task for the students.

Relationship building should not end with the student. In the world of virtual teaching, parent communication must be at an all-time high in order for the students to be successful. I have seen many teachers stuck in their belief that teachers and parents should not communicate via social media. To keep lines of communication open and timely, I would highly suggest utilizing social media as a tool to communicate with parents. Since we have been virtual teaching, I have created a Facebook page for each of my classes so that I can keep parents informed about important upcoming dates and activities taking place in my virtual classroom. My parent communication has never been higher, and I will carry what I have learned with me even when we return to the face-to-face instruction. It is also important to know that parents may not have any knowledge of learning management systems utilized by your school district. Creating tutorials of basic functions of your virtual class will allow your parents to successfully monitor their child's progress, and even troubleshoot issues that may arise when their child is not in a virtual session with their teacher to provide guidance.

Teachers must also extend grace and flexibility to have successful virtual teaching. While a teacher's world may be completely flipped upside down during the pandemic, we have to keep in mind that some families have not experienced any change since March other than the closing of schools. Their lives have marched on-- whether it's their work schedules, extracurricular activities of students or siblings, or caring for family members outside of their home. Parents of older students are counting on their children to be responsible for much more than they have been in the past. It's vital to remember that middle school students are still young and are developing organizational skills that are necessary for their high school years and beyond.

I have learned that due dates are important to keep students on track, but I also know that the unexpected can happen at any time. If a student is not habitually late with assignments, extending grace can go a long way. If a student is habitually late with assignments, the open line of communication with the parent can help determine what steps need to be taken to get the student back on track.

The second area I focused upon in the Building Relationships micro-credential was engagement. Engagement can be a challenge for some teachers in a normal school year, and the challenge increases during virtual instruction as you are competing for attention against anything happening in their home. While I was working on the micro-credential, I looked into programs that students could use on an electronic device and yield increased engagement in the classroom. The best program I found for this purpose was Nearpod. Nearpod has several features that are perfect for both virtual and in-person learning. I can create lessons via Google Slides, and then control exactly what the students see on their screen during a live presentation. I have the ability to place formative assessments throughout the lesson to gauge their understanding, and I can also add activities on the fly if I determine that the students may need a quick check throughout the lesson. I have used Nearpod almost exclusively to deliver social studies content to my students.

Another great feature of Nearpod is the ability to add virtual field trips to my lessons. Coming from a rural area, many of my students have never traveled out of the state, much less around the world. Adding a virtual field trip of an area of the world that we are studying gives students a more authentic experience with the area as opposed to just looking at a picture. This feature keeps the students' attention and provides engagement during my lessons. If it had not been for earning a micro-credential through KVEC and Digital Promise, I may not have looked enough into the Nearpod program to find engaging activities for my students.

There are many other programs that are very useful for virtual learning that increases student engagement. Pear Deck offers a game that the students can play virtually called "Flashcard Factory" that I have used frequently to help students study and apply vocabulary terms necessary for our unit of study. Gimkit is a class favorite that I have used for test review. Students answer review questions to earn money that can be used to purchase powerups to save their own money, or to take money away from other students. It allows my students to be competitive all while practicing the content they have been given throughout a unit. My students look forward to these days, and it allows us to have a sense of normalcy during a very abnormal time. I have also learned that some students do not prefer game-type review, and prefer studying using Quizlet. These students are typically more introverted than the others and prefer to practice accuracy

amongst themselves instead of in a competitive environment. I allow those students to study as they wish. After all, the purpose is to practice content knowledge, and I prefer the students complete whatever makes them feel the most comfortable.

Unfortunately, there is not a one-size-fits-all solution to teaching effectively during the pandemic. Much like any other school year, different teachers have strengths that their colleagues may not share. If you are not teaching in-person, it may not be as apparent to administrators where a teacher is lacking the skills needed to navigate virtual teaching. My advice to other teachers is to reflect on what is difficult for them during non-traditional instruction. After identifying an area that is causing them stress, there are two simple things that they can do to equip them with tools to advance their teaching skills. First, turn to a trusted colleague or search for people to be in your personal learning network. Many times, the teacher next door may have a solution to help alleviate stressors in a virtual classroom. A quick search on Twitter may lead you to like-minded educators that are sharing the strategies that are helping them become successful virtually. Don't be afraid to ask or seek help, as this is an unprecedented year of teaching for everyone. Secondly, reach out to regional educational cooperatives or search Digital Promise for micro-credentials that match the area in which you are having trouble. Micro-credentials are personalized to meet specific needs. Time is incredibly valuable, and micro-credentials pinpoint specific areas, making them much more time-efficient than a one-size-fits-all type of professional development.

Essay on Best Practice in COVID-19 Era

Clark County Education Association, Las Vegas, Nevada | **Jordana McCudden**

Friday, March 13th, 2020 marked the last time most of the 320,000 students and 40,000 employees of the Clark County School District – including Las Vegas and its surrounding suburbs – walked onto their school campuses. Having already decided that myself and my three school-aged children would take a week off from school following the first reported cases of Coronavirus in Nevada, it was a relief to know our state's governor had made the safest decision for Nevada's residents.

My job as an instructional coach at a middle school abruptly morphed from pedagogy expert to technology guru. While some teachers regularly infused technology into their classroom lessons, many still resisted the use of technology tools to plan, manage, and deliver their lessons. My quarantined work days were spent combing the Internet for online resources and lessons for teachers of all technology capabilities. Teachers lived in survival mode – the entire school district, in fact, lived there as well – as we tried to make sense of the quiet chaos of our new worklife at home. I worked to meet teachers where they were, offering assistance in Google Classroom basics, virtual meetings for emotional support, vetting online tools and curriculum, and any other needs that arose.

Teaching in quarantine reaffirmed the notion that crisis could bring out the best and worst of humanity. Zoombombing became something teachers feared during virtual classes. Already nervously teaching outside of their comfort zone, educators worried that an ill-intentioned intruder may disrupt their lesson at any moment. On the other hand, I was delighted to see the number of education-related companies offering their services for free until the end of the school year. This increased learner access to reading and math online programs in the midst of the upheaval of the regular school day.

Although teachers had no choice but to jump into 21st century teaching, the need for it had been long overdue. Our students had been paying the price for years learning in a system that had not recognized the value of technology beyond playing video games and social media. For the fifth largest school district in the United States, shifting from in-person instruction to distance learning felt akin to trying to steer the Titanic away from an impending iceberg. Students' well-being superseded concern over instruction. Nearly two-thirds of the district's students qualify for the federal Free and Reduced Lunch program. For many of our students, school meals are their only reliable food. School counselors furiously tried to contact families to keep them connected to school. All stakeholders worried about the effects of students being at home all day with no reprieve from family members who are abusive. School is a safe haven for many students,

and we have long relied on the education system to provide social services alongside a quality education.

The superintendent directed school officials to quickly identify how many and which students had no access to remote learning. By April, the district owned 200,000 Chromebooks, a grand number by any measure, but still left 120,000 students at a disadvantage. Over the summer, grant money allowed for the purchase of the remaining needed technology and additional hotspots for families needing access. With a technology plan in place, the focus turned to developing a strategy for the fall.

Of the 18,000 teachers in our district, the range of their technology savvy is wide and deep. Teachers spent much of their time over the summer learning how to use the LMS purchased by the state. They used social media to connect with professional learning communities to find lessons and resources for their students. The uncertainty of how long distance learning would last in our district boiled over into frustration with many who vented at school board meetings and elsewhere at having to learn how to teach remotely. Their being forced out of their comfort zone manifested as anger and confusion. When the district released its learning plan, every teacher, brand new to veteran, entered uncharted territory.

Students had the same varied knowledge of using technology for educational purposes. We tend to believe children are experts in mobile devices, but leveraging their capabilities for school is much different than creating Tik Tok videos. Kindergarteners had to find the dexterity to navigate into virtual meetings. Not all of them have the privilege of an adult at home to help throughout the day, where they are being asked to join Google Meets interspersed with independent work time between 8am and 3pm. Even when adults are there, many of them are working and must juggle these dual roles, which is no small task. While fortunate to be working from home, juggling the role of educator while my three children attend school leaves me more exhausted at the end of the day than ever before.

No matter the years of experience in the classroom, no one had ever taught like this before. The district's intention to mimic the in-person experience meant teachers were in virtual (live) sessions for much of their day. In elementary school, teachers had success with students turning cameras on, making building a classroom community possible. In these classes, teachers exaggerate their personalities to make the live sessions engaging. But for the younger students, there is only so much an online teacher can do to help students with their classwork. Much of the responsibility falls onto the parents. They must make sure students have paper and pencil nearby, stay on task during independent work time, and solve technology issues as they arise (which is frequent), the result is the continued divide between the haves and have-nots. Many lower income families are not graced with the option to work from home, leaving students on their

own to manage school. Parents privileged to work from home support their students throughout the day, ensuring their success in distance learning. In secondary schools, teachers struggle to adjust their pacing and workload for distance education. Students report spending more time working on class assignments now than during in-person school. This problem is exacerbated by the anxiety and isolation many are feeling. Without being on campus, students lack opportunities to make human connections that are vital to emotional health. Live virtual classes in secondary schools rarely see any camera on except the teacher's. A few students may respond in class by unmuting or typing in the chat, but by and large I see middle and high school teachers unable to cajole students to show their faces. Despite their habit of remaining private in class, students are lonely at a time when they most need human connection.

As devastating as the pandemic has been, these experiences should not go to waste. In an education system that trails society's technology advances, we must capitalize on the monumental shift into the 21st century. With a mobile device in the hand of every student, we have already begun to revolutionize the education system. Every teacher in my district can navigate at least one LMS. At minimum, we should be mandating and supporting teachers in providing fluid access to their content for students both in person and at home. Students who must miss a day or two from school for illness can be offered solutions to keep pace with the class rather than scramble to make up missed work. But we can do so much more. Everyone knows how to attend a Google Meet – why not use it to connect with absent students after classes, or their parents for short conversations as the need arises? Most teachers know how to record mini-lessons – how about making that a regular practice and housing them all on the LMS for students who need to review? Language learners can benefit from viewing these videos with closed captions in their home language. Teachers could utilize individualized curriculum with online platforms such as iReady and Khan Academy to revolutionize class instruction.

A step even further begs the question: Why do we require buildings and seat time for school credit? Technology in the hands of each student negates the need for "one size fits all" instruction. Could we not blend small group lessons with a mix of hands on activities and project-based learning that meets the needs of each student? And would this require daily contact with students, especially at the secondary level? Could we not question the practice of using a grading scale to measure student mastery rather than developing a learner profile that identifies qualities, not a set of facts and perfunctory skills, that would show readiness to move on to the next course? In a school district that grapples with teacher recruitment and retention, could we not envision offering teaching contracts that are flexible? Could teachers parse out their time into modules of in-person and distance learning courses? Would some secondary students prefer a mix of online and in-person courses to suit their individual needs? The possibilities are exciting,

if only we wish to step outside of our comfort zone to transform education into a modern system that truly prepares students for 21st century careers and a place among a robust, critically thinking, civically-minded populace.

Using Innovation and Technology to Meet the Needs of Students

Juab Junior High School, Nephi, Utah | **Karin Bradley**

On March 11, 2020 our faculty and staff had an emergency meeting to discuss how we would respond if our school went to online learning. This is something that had never been done before in our district. COVID-19 was infecting the nation but in a small rural town in Utah, we had not even had one positive case. Going online and teaching remote was not something I actually thought would happen yet. In our meeting we discussed options we had and if our students were prepared. I believed in my heart that if we had parent support, we could do anything. Without parent support, the students and teachers both might drown.

March 12, 2020 was a normal Thursday except there was a lot of talk among my students about COVID-19. A few students even commented that they hoped we wouldn't have to come to school anymore. To be honest, these comments really upset me. I have believed in the power of education my whole life. Growing up a teacher's daughter, the love for learning was instilled in me very early on. The love grew into a passion and is the reason I am an educator today. I expressed my concern to my students that not coming to school and having the education face to face would not only be lonely and pose many challenges; it would also be challenging for them as they would be expected to own the responsibilities of accessing their instructions and practices without the same type of support from their teachers as they are used to. March 12 was my last day with my students that school year.

March 13, 2020 Governor Gary Herbert called an emergency meeting and announced to the entire state of Utah that schools would be closing their doors for a temporary 2 week "soft closure". I wasn't in school that day. I took the day off to attend a softball tournament for my daughter who was a senior in high school. This announcement rocked the state. What did this mean for teachers, students, parents, athletes, and the many other staff members who were employed by the school districts? Little did we know, that "soft closure" turned into a permanent closure of all schools in Utah for the remainder of the 2019/2020 school year.

Ⅰ. PREPARATION

Almost immediately, teachers began to prepare. The training and experience we had had over the past several years would be the only thing we could rely on. We collaborated in our PLCs and came up with options for the best ways to meet the needs of our students. We were very fortunate in our district because we were 1:1 with students and devices in all grades 6th-12th. In Kindergarten - 5th grades, many

classrooms had class sets of iPads as well. Students had already learned how to access our LMS (learning management system) Canvas. Teachers in our schools had already practiced creating instructional videos to deliver lessons to students who had been absent. Some teachers even used these instructional videos currently in the classroom for students to access during small group interventions.

I was fortunate enough to be one of those teachers. In our first few meetings together, we decided that Zoom would be the best and almost only form of contact we would have with our students. They all had school issued email addresses so of course we could email them or call them on the phone. However, seeing our students face to face and talking to them in real time as they worked through their practice problems was crucial. As teachers we came up with a plan to set a Zoom meeting daily that didn't overlap with the other required courses. Elective courses took a back seat as core classes such as mathematics, english and science became priority. The district gave us three days to prepare for online learning and by Thursday of the next week, everything was up and rolling.

Ⅱ. LESSON PLANNING

My first course of action was to plan a week out. We were instructed to deliver high quality lessons that met the Utah Core Standards, but in doing that, we were asked to not overwhelm students and parents. Our lessons should not take us personally longer than 10–15 minutes to complete. Keeping this guideline in mind, and also realizing the content I still needed to cover, I put into plan the most important standards (Power Standards) that my students still needed to learn in order to be successful the following year. We were all very fortunate to have had this happen at the specific time of year that it did. It was almost the end of the school year anyway and most of the standards had been taught. If we had stayed in school, we would have only had about 4 weeks of school time before end of year testing started. I came up with a plan and went to work.

Ⅲ. LESSON DELIVERY

As I mentioned earlier, I had been playing with online resources and options of creating my own instructional videos for years. With the iPad's recent update, it was now possible to make a screen recording that saves as a video. It isn't the most creative tool for creating a video but it is a free tool that was fairly easy. Using an app called Notability, I was able to screen record and make instructional videos that Iwould then upload to Canvas for students to watch. Notability is amazing. You can write on the screen on your iPad in a very similar way that you write on a white board. Except it is digital. You can also share a .pdf file into the app

and write on it as if it were paper. The most difficult part of creating these videos and sharing them was uploading the video. I had already learned how to upload videos into Canvas from my camera roll. The amount of time those uploads took was unrealistic for the amount of videos I was sharing. I realized I needed to change something. I researched how to create a YouTube channel and shortly after we went into closure, I was using YouTube as a tool to save my videos and share them on Canvas and via email with my students. This saved so much time. As opposed to uploading the video to Canvas every time I needed to share it, I could now just upload it once to YouTube. From there, I could copy a link and share it out to students through email. I could also embed the video straight into Canvas for students to watch. As I continued to use YouTube more, I realized every video saved analytical data that would give me the average amount of time the video had been viewed and the number of views that it had. This data was very helpful and I started to gage the interest level students had. I even used the data to see if students were actually watching the videos or not.

Ⅳ. PRACTICE

Another thing that had to change was the way students practiced. Typically in my classroom, students would complete some practice on paper, some practice on a digital .pdf and some practice using Aleks and IXL. Aleks and IXL are programs our district invested in because they aligned with our district vision of personalized learning and giving students voice and choice in their learning. The biggest change I made here was adapting the .pdf worksheets. Typically I would deliver a lesson in the classroom and give students an option of how to practice. Because students were now working from home, few had the ability to print worksheets and didn't have a teacher in the room to receive instant feedback from. The choice to complete a worksheet for practice was not realistic anymore. With every worksheet I assigned, I knew I had to give my students the ability to check their answers. I knew this because of my work studying Growth Mindset. I believe that mistakes are valuable if students know they made them and how to correct them. I believe we use our mistakes as learning opportunities to grow and change. I didn't want my students to complete practice without giving them the ability to check their answers. For these reasons, I knew if I provided a worksheet as an option to practice, I would also have to create an answer key so students could check their own answers I have tried this in the past and it is something I can do. However, it is a struggle for students to actually use the answer key on the same iPad they have the assignment on. Not only this, but it was time consuming for them. For these reasons, I chose to give most practice opportunities through Aleks (Picture 1) and IXL (Picture 2). By using either of these digital resources, students received instant feedback and guided support to learn if answers were incorrect.

Picture 1-Aleks

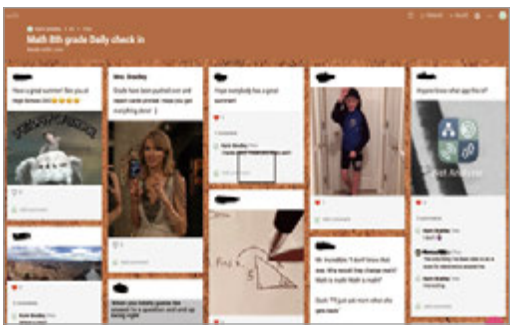
Picture 2-IXL

V. CONNECTIONS

One of the most important changes that came when we were asked to teach remotely was how to make connections with our students. Again, we were fortunate that all of this happened at the end of the school year. Relationships were already built and connections had been made. I was surprised however at the disconnect I had with some of the students I thought I had more solid connections with. Students that I would talk to daily did not reach out for help, did not email me back and would not attend the live zoom meetings or request a zoom appointment. I knew very quickly that I had to take another approach and try to get students to connect with me and with each other. There were two online resources that I found that helped with this.

The first was Padlet. Padlet is an online tool similar to a bulletin board. Participants access the Padlet link from the "instructor" and can then share a post. I created a Padlet board for each of my classes. (Picture 3) Their daily responsibilities included joining the Padlet and "checking in" with me and the class. I would ask students to do different things from day to day. Sometimes I asked them to respond to a question. Sometimes I asked them to respond to another post. I even asked them to use a gif as a response on some of the days. The posts they made could vary from answering a personal question to even telling a joke. I just wanted to hear from them and know they were doing ok. I missed each of them so much and reading through their comments gave me some of that connection that I lost by not talking to them on a daily basis.

Another tool I used to try and build connections among the students and myself was an online tool called FlipGrid. (Picture 4) This tool allows students to create short videos and share these videos with other users of the community. There are fun tools available to use in Flipgrid such as filters, emojis and inserting



Picture 3–Padlet

Picture 4–Padlet

text into your videos. I used this tool for students to reflect and respond. I wanted students to reflect on specific questions and then comment on other students' reflections as well. By using Flipgrid, students were essentially sending videos to each other and using math and day to day experiences as the subject matter. I really enjoyed watching their videos and responses. It gave me a sense of peace to see and hear them speak. If you have ever been an educator you know how valuable these connections are with your students and to suddenly have them ripped away without notice was very depressing and lonely.

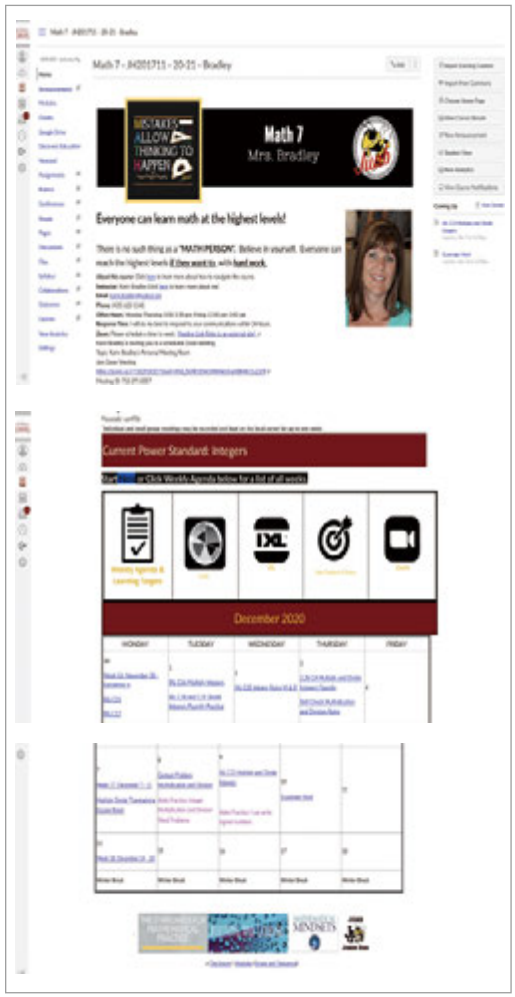
Ⅵ. Trial Period Over

By the end of the school year, I was exhausted. Some people might think that working from home was a dream. We could sleep in, take bathroom breaks and suddenly didn't have to deal with classroom management. However, for me, it was one of the hardest adjustments I have ever made in my teaching career. There were so many new things to consider while being a remote teacher. As much as I wanted to hold out hope that this was the only time I would have to teach this way, the pandemic was not getting better. In fact, it was getting worse. I would soon realize that the 3 months I spent teaching remotely was simply just a trial period for the possibility of teaching remotely all school year.

The summer months gave our teaching staff time to reflect and collaborate. It was decided that all students needed some familiarity on Canvas. One of the biggest stumbling blocks for parents to navigate was was Canvas. They didn't understand it and needed some consistency. A team of teachers got together, solicited opinions from all teachers and restructured our Canvas landing page so that they were all similar and had the same features. We wanted our students to not get lost in the navigation. We wanted our Canvas pages to be personal to us but comfortable for both parents and students to navigate. Although this was necessary and seemed to be better for the parents and students, it was a lot of work for me and any other

teacher that had not already set up their Canvas courses. For me, restructuring my Canvas landing page meant restructuring my entire Canvas courses. As many other teachers did, I also decided to start from scratch. I spent many hours over the summer getting this ready. Because I started from scratch, it now takes extra time every single day creating new assignments in Canvas and uploading new files from my computer; files that I already had uploaded into my previous Canvas course. Below are pictures of my old Canvas course (Picture 5) and my new Canvas course (Picture 6). There is also a picture of another teacher's Canvas course (Picture 7) to show how we have made them similar for students regardless of the subject matter.

Picture 5–My Previous Canvas Home Page



Picture 6–My Current Canvas Home Page

Picture 7–English Current Canvas Home Page

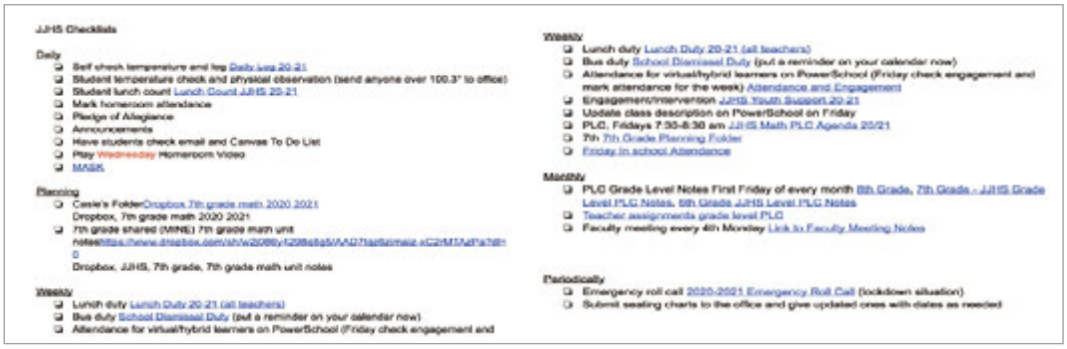
Picture 8–Olmstead Current Canvas Home Page

Ⅶ. SCHOOL YEAR 2020/2021

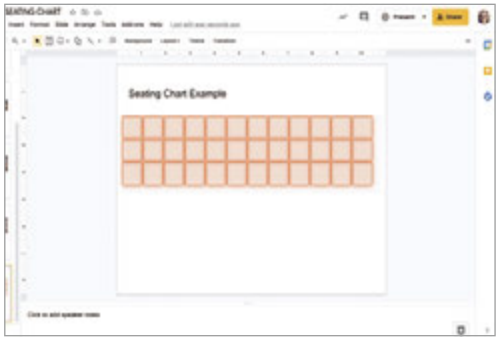
The beginning of the new school year brought hope. Our district had a plan in place in case COVID cases rose during the school year. Three learning models were given to parents and students for instruction: Face to Face, Blended or Online. The models were intended to be fluid. Students could transition at will from one to another. These options brought relief to many parents as they made the tough decision as to whether or not to send their children to school. For me, and many teachers I assume, these options were terrifying. What would this mean for instruction? How would we manage all three options? How would we guarantee a high quality education for each student? Again I feel back to the belief that if parents were on board and invested, students would be successful as long as I did my part.

One of the changes that helped support these three models was changing the school week from five days to four days. Friday was reserved for student intervention, professional development and planning. During this time, teachers could work with students from 9–12 then use the rest of the day to plan and attend professional development meetings. It was obvious very quickly that 3 extra hours of planning time a week was not enough time to get everything done that was expected.

Along with planning, there was now a lot of tracking teachers needed to do. Google Drive became our new best friend. Teachers and administrators were using collaborative Google files such as Google Docs and Google Slides to share information about students, share lunch counts that were now being taken, share schedules that were now in place and keep track of student engagement. We even had a new document where we had to check our daily temperatures. Keeping track of all of these files seemed endless. Finally one teacher created a document just to house all of the links for the other documents. I adapted her document to fit my needs (Picture 8) for a convenient way to access all of the new files.



Picture 9



Picture 10

One of the newest changes we have made has been keeping close track of our seating charts. With COVID came contact tracing. In order for the health department to know which students were exposed in the classroom, students have had to have a seating chart. Updating that chart every time you made a change in the classroom was time consuming at best. Recently we changed from keeping track of these charts on paper to keeping track of of them on a Google Slide. Every time a change is made, it is documented in the Google Slide. This slide presentation is shared with our point of contact at the school and she can access them for every COVID case there is and conduct contact tracing even from home. The seating chart includes pictures and names. So for confidentiality purposes, my picture below (Picture 10) only includes an example of a seating chart without actual student names and pictures.

Ⅷ.QUARANTINE

On October 13 I received a phone call from my son. He had tested positive for COVID. I was sitting in my classroom and school had just gotten over. Immediately I started to experience a higher temperature and a headache. I'm sure this was from the panic and fear I was experiencing but I was convinced that I must have it as well. He was living with me and I had been in close contact with him over the last few days. I contacted my school principals and determined that I should not come to school because of the exposure. What now? How would I teach my students from home while they were in the classroom.

I wasn't the first teacher in our building to be quarantined. There was a way it could be done. With the help

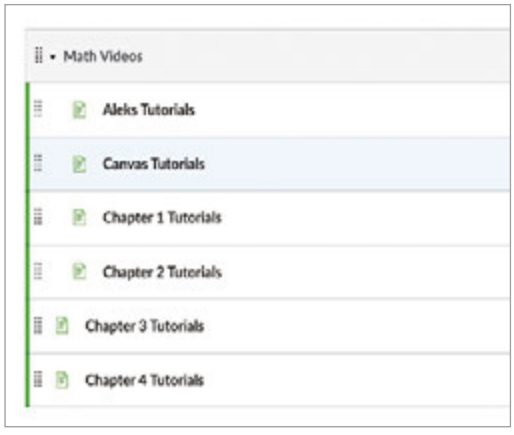
of technology and Zoom, teachers that had to be out of the classroom for an extended period of time were still able to teach their students. I was lucky that my exposure came the day before fall break. That meant I only had to take 3 school days off of work. However, the technology was set up and by Tuesday morning when the students came back to school, I could have used Zoom to teach my students from home. The equipment that was used was a laptop, external camera and microphone, and a sound system. With the help of the substitute to get it all started each day, my classroom became a remote learning site.

During my quarantine I also tested positive for COVID. While my symptoms were not severe, I still took the next week "off" to rest and get better. I still did a lot of work from home to stay in contact with my substitute teacher and my students. I answered emails and texts and graded papers. However, I decided that doing the class Zoom with my students was more than I could handle while I recovered. All of this work that was being done from home was possible because of our LMS that the district had in place and online grading. It kept me at home but still somewhat connected to what was happening in my classroom and with my students.

IX. MOVING FORWARD

We are nearing the end of of the first semester in a school year where everything is new. I consider myself to be a veteran teacher. I have taught for 20 years and this year I have felt the stress of being a first year teacher all over again. Though the curriculum hasn't changed, so many other things have. From planning and collaborating to using new methods of lesson delivery. I mentioned before how I have learned to create and deliver instructional videos to my students. With practice, it is still time consuming but it has become

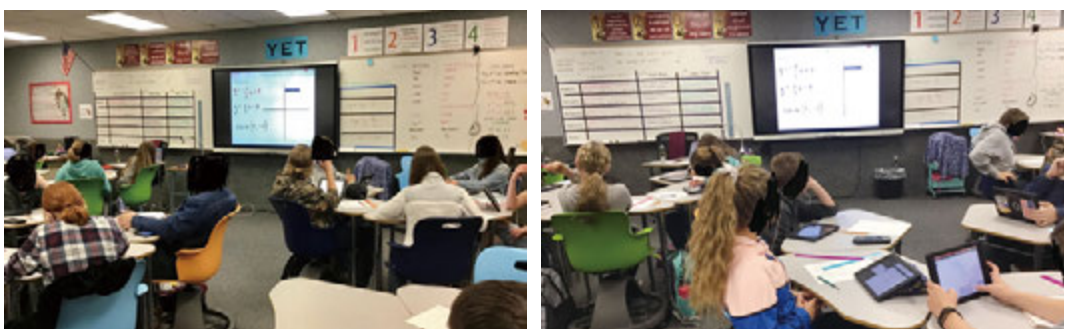
Picture 11



Picture 12

seamless. For every new lesson I teach, there is an instructional video to go with it on Canvas. (Picture 11) I even have a module on Canvas for Canvas tutorials so parents can watch them to learn how to use Canvas. (Picture 12)

Another change that I don't see going away is that teachers are using Zoom in classrooms now as part of their daily method of delivering instruction. As a teacher, I can start a whole class Zoom meeting and students that are learning remotely can join and interact as if they were in the classroom. (Pictures 13) Would we have ever thought of giving these options to our students if not for this pandemic? Would we have ever been willing to adapt to these changes and do the work?



Picture 13

As an educator, I can not say that I am glad for this pandemic. It has created a lot of fear and anxiety in the hearts of many people. It has taken lives early and caused a great amount of stress in our health care systems and in daily lives. I have believed from a very early age that with challenge and tragedy comes three options. The option to stay stagnant, the option to rise above or the option to fall. As each new COVID challenge presents itself, I have those same three options. With technology, experience and support of my administrators and teachers, I have the tools I need to be able to rise above the challenges of remote teaching to continue to offer a high quality education to my students. Each day as new students are quarantined and new students return to school, I continually remind myself that I am grateful to still have the opportunity to teach some of them face to face. While these new learning models have been hard to adapt to, I appreciate the situation for what it is and I continue to have hope that school will stay open. I believe big things have to happen in order for big change. COVID-19 is the big thing. The changes we have made as educators in the short amount of time we've done it is the big change. While I hope that things slow down and COVID cases eventually flatten, I do not want the knowledge I've gained to dissipate. Over time, we can perfect our methods to teach remotely and hopefully, with support of our administrators and parents, students will continue to have the option of receiving their education in the ways that suit them best.

Fostering Student Engagement Starts with Social and Emotional Learning

Independence Elementary School, Weldon Spring, Missouri | **Rachael Wilcox**

How do we keep students engaged in online learning? It's the number one question most educators have been asking as they have been scrambling to figure out what online learning can and should look like. Online learning has its challenges, but one thing I'm increasingly certain about is that if you want students to be engaged you have to support their social and emotional growth first.

The shift from in person learning to distance learning started for me in March of 2020. We received notice that the entire state would be closing schools. I remember hearing the news and a wave of emotions hit me; relief, sadness, frustration, and worry. In my school district we were given about two weeks to prepare for our online spaces. It was a mad dash to figure out how we would instruct students. Countless sleepless nights thinking through every turn and instructional practice I would need to change. Then the day came. The moment I was going to host my very first zoom lesson with 21 first grade students. I sat in front of the computer almost in tears wondering how it was going to go. I turned the camera on, and then it happened. All of my student's faces began to pop up on the screen. One by one, I greeted them by name, asked them how they were doing. My heart was so happy to see them. In that instance, I knew what I needed to do. I needed to have the exact same conversation with them as if I was working in the classroom. I told them how happy I was to see them but sad we were not sitting around the carpet together. Each student was able to share how they were feeling. They shared the great things about being home and shared the things they were missing. The conversation was incredible, but one thing was very clear, my students were going to need lots of social and emotional support.

As the uncertainty of what school would look like continued, I began brainstorming how I could provide social and emotional growth through all of the challenges of remote learning. My experience on the Practitioner Advisory Board for the Learner Variability Project, gave me opportunity to connect the activities I was doing to research–based strategies and deepen my understanding of how these strategies impacted different learner factors.

My conversation with my students kept weighing on me. After a sleepless night, it occurred to me that in order to really impact the social and emotional growth of my first graders, family engagement was going to be critical! I decided to host zoom calls for parents in the evenings, so I could check in and see how things were going and they could ask questions. One of the first challenges that many parents raised was figuring out what an at–home learning schedule should look like. I knew from my own experience as

a teacher and a mother that learner variability can have a big impact on what kind of schedule will work best for each student. For students who may have a lot of anxiety about the changes in circumstances, building a schedule around predictable routines can help. For other students and families this is a chance to provide more student choice and allow for flexibility during the day. So I created a resource for parents that guided them through three different scheduling options they could try with their students. By sharing this resource on a zoom call, I was able to explain the importance of predictable routines for some students and provide different options so parents could choose what worked best for their student and their situation.

It became equally important for me to develop a schedule for our virtual learning via zoom that was engaging for students and also gave them space to discuss emotions. On Mondays, we conducted class meetings that allowed for students to have open and honest discussions with each other. I ask a series of questions and each student has the opportunity to answer. These questions are specifically designed to foster community. On Tuesdays, we had a read aloud day. I would focus my read alouds on texts that lend themselves to conversations about social emotional skills. Having shared examples to discuss helps students process the world around them. On Wednesdays, instead of having a traditional show and tell, we would have virtual scavenger hunts that focused on emotions. I would say things like, "Show me something that makes you feel proud." Kids would run all over the home to show me the math test on their refrigerator, the character award I had given them, and a personal favorite was when a child took me outside and showed me that she had learned how to ride a bike. Thursday's were all about the joy of learning because they were dedicated to STEAM (Science, Technology, Engineering, Art, and Math). I would plan a project with items that students would be able to do at home, model it in the zoom call, and then present the challenge to the students. Friday, that was saved for dancing. Just because having fun with our students is one of the best parts of the job.

Remote learning doesn't always have to be online. Some of the most effective ways I continued to build trusting relationships were very low tech! One thing I did, which was a huge hit, was to mail each of my students a hug. I bought rolls of paper, traced my arms, cut them out, and wrote the message, "I missed you so much, I decided to mail you a hug." Another fun activity I mailed my students was a "Flat Mrs. Wilcox". This activity is based on the book, Flat Stanley by Jeff Brown. The students then had the option to take me wherever they wanted to. Flat Mrs. Wilcox was able to climb trees, vote, eat breakfast with the families and even go on evening walks. We were building relationships even when we were apart from one another.

Another key aspect of helping students manage their emotions during remote learning is positive self talk. When I thought of all the things I have had to learn over the past 7 months to be able to teach successfully, my head literally hurts. There were moments I wanted to cry because it felt like it should have been easier. But I was able to overcome the frustrations I was feeling with positive self talk. This is an important skill for young students to develop too. Modeling this skill as a teacher is important and also provides phrases for them to use like, "I may not understand it now, but if I keep working I will understand it one day," or "it's okay to make mistakes because mistakes mean we are learning." When we give students these words they begin to orally rehearse them. I have several students who will echo my words of positive self talk when they are doubting themselves because they use those words as anchors to continue to succeed.

By focusing on relationships and the student's social emotional needs they continued to show up. Our zoom classroom was not only a safe place to be but a place they wanted to be. In fact, when many classrooms were struggling to have students even attend, I maintained contact with all of my students weekly. One of the features of the Learner Variability Navigator is the ability to create workspaces using the Learning Needs Explorer. These workspaces can focus on a select set of factors and strategies for a specific purpose. As I reflected on the success I'd had with supporting SEL in remote learning, I created a workspace which captures the strategies and resources I used for social and emotional supports during remote learning.

As students continued to show up ready to learn, my focus started to shift to student engagement. One way I built on both family engagement and student engagement is by providing place–based learning activities aligned to our mathematical standards. I provided activities with resources that families would have available around the house or that related to something they were already doing. In one zoom call, several students mentioned they were completing home improvement projects around the house. This was a great opportunity for a place–based learning activity called Measuring Up which challenged students to use their measurement skills as a part of the projects they were already doing. For example, use a tape measure to see how long the wall you are painting is or use a ruler to discover how deep the hole is to plant a bush. Providing families with multimodal learning experiences in the home lead to incredible learning opportunities for my students. It was so wonderful to hop on zoom calls and hear about how they were creating additional problems with planning plants for a garden or baking with their older siblings. Learning all of a sudden had practical applications.

Another excellent strategy for fostering student engagement especially in younger students who are not used to sitting in front of screens for long periods of time is to incorporate movement into academic learning. My students and I had a lot of fun responding to questions with physical movement. For example in order to solve the problem 2+3=5, if you solved using mental math stand up or if you used a part–part–whole math sit on the ground next to your desk. Simply changing how we ask students to respond allows for more engagement. Every time we move, higher levels of oxygen get pumped into the brain, allowing us to process better. As a first grade teacher, I am very cognizant about how often I have our students complete some type of movement.

In my remote learning experience, social and emotional learning is inextricably linked with highly engaging classrooms. You can see this in the wakelet I created which talks through how I translated the strategies from the Fostering Student Engagement workspace into my virtual first grade classroom. Many of these strategies for engagement are interwoven with social and emotional learning. When I think back to the lessons I've learned from the challenges of remote learning and my experience with the Learner Variability Project, one thing that is abundantly clear emotions influence learning and engagement. I believe that if we want to put students first, we have to prioritize social and emotional learning first, then student engagement will follow.

8 Strategies to Support Motivation, Joy, and Building Relationships During Remote Learning

Bethel Park School District, Pennsylvania | **K. D. Meucci**

100% virtual. That's how this school year started for my fourth grade students and me in our suburb of Pittsburgh, Pennsylvania. In October, we moved to a hybrid model where students rotated between remote and in-person learning a couple of days a week, with a third group remaining fully remote. A few weeks later, we returned to all students being in fully remote learning because of a rise of cases in our area. The constant changes and uncertainty have been a challenge for students and teachers alike. In a normal year, helping students maintain focus, motivation and manage their emotions is a challenge every teacher faces. Given the uncertainty of this school year, this challenge is even more difficult and more important.

Prior to the pandemic, I was nominated by my principal and ultimately recognized as a Pittsburgh Pirates Organization All-Star Teacher for the way in which I use technology in my classroom to make learning fun and innovative for my students. Needless to say those skills have served me well in remote learning, but the real magic that happens here in room 25 has always been the strong relationships I have with my students. In the spring of last year, when the pandemic first hit, I was able to build off existing relationships with my students as we translated our learning into a virtual space. I designed a workspace with research-based strategies from the Learner Variability Navigator to share with parents on how to help students manage their emotions and motivation for remote learning.

This fall, I faced a new challenge: how to build relationships and recreate this magic in a totally remote classroom? Luckily I had a national network of collaborators from my participation on the Practitioner Advisory Board for the Learner Variability Project. Through collaboration and discussion of the different factors and strategies on the Learner Variability Navigator, I started coming up with a game plan. By exploring the navigator, I was able to identify some new strategies and reaffirm some best practices that were already in place. I started thinking about how to translate these strategies into my new virtual context and felt more prepared to make this year as impactful as I could for my students, regardless of our learning situation.

In a way, remote/hybrid teaching has helped to improve my craft. Here are eight things I've implemented with the help of the navigator to engage, build relationships, support students, and keep the fun in 4th grade.

Ⅰ. Yard signs and headbands.

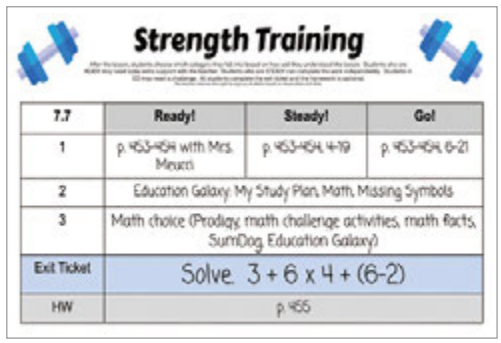
Before school started, I visited every student's home to introduce myself. I took my rubber mallet and hammered in yard signs and gave each child a Meucci's Crew headband. Then I asked each child 4 questions.

- What is your favorite food?
- What is your favorite movie or tv show?
- How are you feeling about school starting?
- What do you like to do for fun?

\While these four questions seem rather surface level, they allowed me a window into each child's personality. I was able to see how they responded, how they spoke, body language, and level of anxiety/nervousness. Of course I wrote all of their responses down and include their likes into conversations and lessons every chance I get. Making connections and getting to know my students is an important first step in building trusting relationships with students.

Ⅱ. Allow students to have more choice in their day.

Student choice has always been a staple in my classroom. When students have control over their learning, they are more accountable for their actions. The navigator supported my practices in this area while providing resources for furthering student choice for my class. Students choose which books they will read for our weekly book clubs, the order in which they will complete certain activities, and sometimes which group of students with which they will work. Because student choice is important, I have pre recorded my math lessons and students can choose to watch the video or stay live for the lesson. Then, students choose their daily math practice based on their understanding of the lesson. I call this practice "Strength Training" because we talk a lot about growth mindset and how choosing the activity

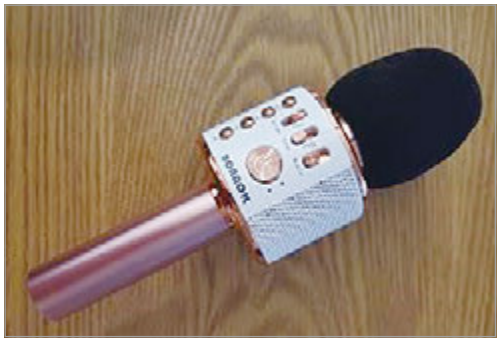


Strength Training

7.7	Ready!	Steady!	Go!
1	p. 453-454 with Mrs. Meucci	p. 453-454, 4-19	p. 453-454, 6-21
2	Education Galaxy: My Study Plan, Math, Missing Symbols		
3	Math choice (Prodigy, math challenge activities, math facts, SumDog, Education Galaxy)		
Exit Ticket	Solve. 3 + 6 x 4 + (6-2)		
HW	p. 455		

that will help your brain to grow rather than the easy way out is better in the long run. After the lesson, students choose which category they fall into based on how well they understood the lesson. Students who are READY may need some extra support with the teacher. Students who are STEADY can complete the work independently. Students in GO may need a challenge. Here is an example of Strength Training:

Ⅲ. Jam sessions.



Every once in a while, I carve out 5 minutes for a jam session. Remember those questions I asked during home visits? Well, I found out I have a large group of Hamilton fans. So, for 5 minutes, at the end of a lesson or when students are on break time, some of us get together and jam out to Hamilton songs (appropriate ones). I've also held jam sessions for Greatest Showman and Frozen (you guessed it, also class favorites). I'm always finding new ways to use the microphone my sister got me for Christmas last year! This is a great way to conduct some movement breaks and incorporate a bit of joy into our online learning!

Ⅳ. Call and response and class cheers.

Call and response is something I've always wanted to do more of in my classroom. I've always used the "Class, class class, Yes, yes, yes" call and response, but that loses it's fun factor after the first day or two. This year I've done a new call and response each day as part of my morning meeting. We are having so much fun with it! It's a WAY better technique for bringing students' attention back than saying, "Pay attention" or "Who's with me" over and over.

During our morning meeting, I also instituted a classroom cheer, which is really more of a song. I've seen other teachers on IG do it and I've always wanted to try. The kids love it! Here are my morning meeting slides that have our call and responses as well as our classroom cheer.

Ⅴ. Tea parties.

I normally have a second cup of coffee around our first morning break time. I've invited my class to grab a mug, fill it with their favorite beverage (or water) and we cheers each other at the end of our break. It's simple, fun, and even better when you put your pinkies in the air and talk with a British accent.

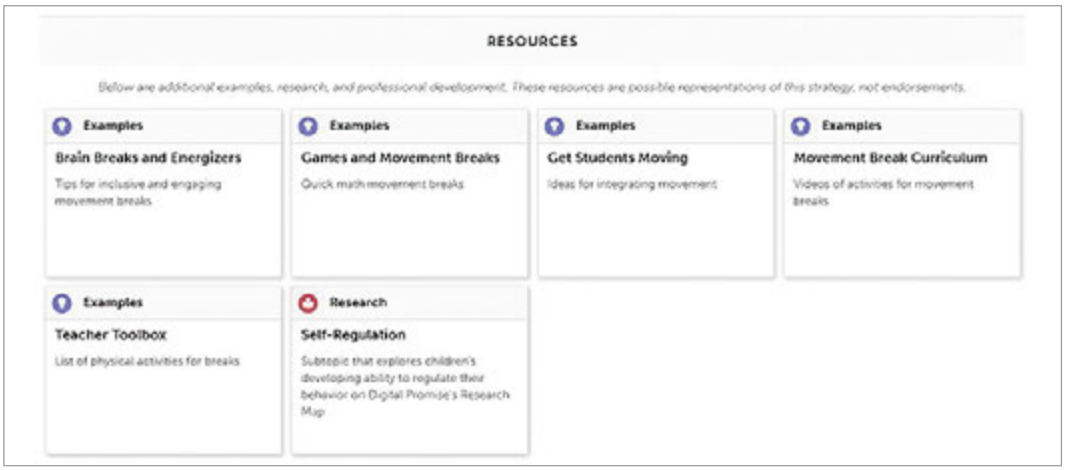
Ⅵ. Use different voices, characters, accents, and costumes.

My students are eager to see, "What will Mrs. Meucci do next?" So far, they enjoy my cowboy, British, French, and diva accents. Super Mario is teaching multiplication next week.

Ⅶ. Incorporate movement breaks.

I always spread brain and movement breaks throughout my teaching, but the navigator gave me examples and resources for new ideas. Check out all of these amazing resources that came up in the navigator:

In addition to my regular routine, I was able to add breaks I had not considered such as chair aerobics, stretching, and pressure point massage. These strategies helped my students to stay focused and regulate their emotions. I have seen such a difference in my class with doing more of these and other



mindfulness breaks.

Ⅷ. Shout outs.

Who doesn't want to hear their name called out in a joyful way? This may seem simple, but it's so important that every child is seen. I greet every child each morning. Then I take attendance, old school by calling out a name, having the student unmute, give some sort of greeting (sillier the better) and I repeat that greeting back to them using the same tone they used. We've gotten into a routine and this process, even with 25 students, only takes 3 minutes. During instruction, I call out names of students who are rocking the lesson and make intentional positive comments to students who have their cameras off (yes, I've given them the choice until I have a reason not to trust they are right along with me– mutual trust is a big player in our classroom). "I'm so glad you're here, Sarah" means so much to kids. This also helps students know they are safe and cared for in our class.

I am so lucky to be able to go to work every day and do something I love. Teaching has never been an 'easy' job, and this year has proven to be exceptionally difficult. To all of my colleagues, friends, and fellow 'future changers' out there, keep fighting the good fight. Our students need us now more than ever. If you haven't already, check out the navigator tool on https://lvp.digitalpromiseglobal.org/ so you can better support your students during this uncertain time.
Every. Single. Day. Teachers make a difference. What will your impact be?

Teaching & COVID-19
The Rise to the Challenge

Colin P. Kelly Elementary, Compton, California | **Jessica Bibbs-Fox**

Teaching by its very nature is a challenging task that requires perseverance, ingenuity, and constant professional development to meet the demands imposed. Teachers and their respective organizations have developed skills to navigate those challenges through designing curriculum that is based on 21st century skills and supporting active teacher growth. However, when COVID-19 stuck in the midst of social, civil, and political unrest those skills have "gone through a fire" of refinement as the saying goes. In order to meet the current challenges experienced in the classroom, I am leaning heavily on a progressive Professional Learning Network, utilizing Challenge/Problem Based-learning design for instruction, and digitizing the social emotional structures of the classroom for students.

Professional Learning Networks (PLN) are integral in meeting the ever-changing dynamics of education. Throughout the last 6 years prior to COVID-19, advocacy to build these personal yet professional connections with those who have similar missions, values, and pedagogy when it comes to instruction has been highlighted in educational literature and conferences. With the emergence of COVID-19, those that have built such connections stand in a privileged position because they have access to a wider perspective, variety of shared tools, and experts willing to try innovative methods. These PLNs with other educators, inside and outside the classroom that serve in various capacities, are built through programs such as Apple's Distinguished Educators, Google's Certificated Educators, Digital Promises Micro-credentials, and membership to professional organizations such ISTE, CUE, CASE, and a host of others.

To illustrate the usefulness of a PLN in meeting demands brought about by COVID-19, a connection with the Apple Distinguished Educators (ADE) community and with Digital Promise community allowed for the creation of a project that was designed to address middle school NGSS and Math standards based on the relevant topic of COVID-19. The PLN, much like in any other network, provided resources such as contact with real doctors who were willing to participate in interviews to help students make sense of the science involved in the pandemic. Also, useful computational thinking tools were provided to facilitate students in gathering and analyzing real data. Since the project was built with a PLN and not in isolation, the learning experiences that were created for the students far exceeded what could've been created without the PLN. In addition, once the project was completed the feedback, reflection, and sharing of the project, expanded the connections within the PLN and its reach outside to expand the PLN. Thus, the Problem Based Learning project which attempted to make the pandemic situation a teachable moment for students, reached a larger audience opening a space for the project design to go

through innovative iterations.

Problem and/or Challenge– Based Learning designs as teaching methods have always claimed to make learning rigorous, relevant and real. With the current pandemic challenges, students need instruction that is designed to deal with the uncertainty of the changing world they live in and provides them the tools to power their own investigations/inquiries – P/CBL assists with that need! As many teachers are struggling with students' attendance, unethical student work practices, and apathy, P/CBL learning designs allow students the creative space to explore standards in relevant and meaningful ways. The products or artifacts of learning produced in a P/CBL are structured in a manner that students are creators instead of consumers which addresses the challenge of integrity in their work. In addition, since students are working on these larger and more intensive learning experiences, it allows teachers to restructure the class where students can rotate into the class in smaller work pods to receive immediate and differentiated instruction to help them in progressing through the learning sequence. This small pod of learning gives students flexibility and more attention which has become invaluable during this time of the pandemic. It also allows teachers to build better social and emotional relationships with the students though they have never personally met due to the quartarine measures that are in place.

Relationships matter, and what has become increasingly clear is that starting the school year in distance learning due to the pandemic made the building of relationships a serious challenge. Teacher to student relationships and student to student relationships have both suffered which is taking a toll on the mental and social health of teachers and students alike. A key to meeting this challenge is to redesign the social and emotional norms that existed in the brick–and–mortar classrooms to our current digitized classrooms. This digitization can be achieved by looking at those structures that were in place such as student check–ins and giving students the ability to still check–in through tools such as polls and forms that ask students to share who they are filling. In the brick–and–mortar school students were able to converse with one another about non–academic topics in the hallways, bathrooms, and cafeteria which fulfilled the basic human need of what Manslow calls “belonging” and building student to student relationships. Providing students the safe space through a digital tool such as Padlet or the chat box of the web conference platform to chat freely helps to fill the void that has been created by the stay at home orders. When students see that you are attempting to provide such space, it helps to build or establish a teacher to student relationship.

Relationships can also be built by including the family in the learning. 21st century skills state that students must build capacity to collaborate but it never stipulated that the collaboration only needed to be

with peers in the same coursework. Designing learning experiences where students can work with family members or with other classes of students is good for the social and emotional health of the student. Recently, for Computer Science week, the 8th grade students in the Coding elective were challenged to teach the Hour of Code curriculum to a small breakout room of 2–3 3rd graders. Eighth graders who are often passive or non–active in the class were more readily involved and participated at a high energy than in any previous lessons. This highlights the need to bring these types of collaborative experiences more readily into the classroom setting.

Teaching during this pandemic has been a challenge for teachers and students. It has shined a bright light on the disparities in our communities and the fickle nature of structures. However, with the investment in building personal yet Professional Learning Networks, redesigning learning experiences with Project/ Challenge Based Learning method, and digitizing those social and emotional factors into our current instructional model, those challenges can be met successfully.

Revise, Refine and Teach Online

Juab High School, Nephi, Utah | **Kristy Carter**

When Covid 19 invaded and disrupted our world, the governor announced emergency school closures on the evening news Friday the 13th. Teachers had three days to prepare to teach totally online. Already a bit shaken by the Pandemic, as I was scrambling to put together kits of art and ceramics supplies for my students, more news rocked our world as an earthquake struck the area just north of us. The tension was palpable as students and parents came in to pick up supplies. The only redeeming factor was that our school district had long been proactive about professional development and using technology.

Ⅰ. LEARNING MANAGEMENT SYSTEM AND ONLINE RESOURCES

Although I teach at a rural high school in central Utah, my district had been using the Canvas LMS and Google Suite for several years. Teachers had been encouraged to put our curriculum online so students, who had each been given an iPad, could access the information. I had mainly used Canvas as a teaching resource for myself, organizing my projects, assignments, and ideas by course and quarter for the year. It was my digital filing cabinet. Now each course is a complete online guide that walks students through almost everything we do in the classroom.

With the unexpected onset of a school closure, I quickly decided that in order to make my Canvas courses useful for the students I would need to write complete and thorough instructions. After the first week I learned I would need to rewrite and revise those instructions that seemed so clear to me, but weren't always clear to the students. By the next week, I finally came to the conclusion that students often don't read instructions very carefully and that videos may be more effective. I was not cut out to be an actress, and I wasn't comfortable using video making programs, so I searched YouTube for videos that demonstrated the techniques that I wanted my students to learn. A local art museum also offered a program where they would commission a professional artist to make a custom video for whatever a teacher requested, so I took advantage of that. There were actually so many great offerings, lesson plans, and virtual tours from art organizations and museums around the world that I was spending too much time sorting through to find what would best serve my students.

During the summer I decided to take the plunge and dive into creating videos. I learned from a colleague that Loom was a free and easy online program. I am definitely not an expert, but I created videos introducing myself and the course materials to the students, so those who were online would at least

know what their teacher was like. At first, I felt a lot of pressure to make more instructional videos until I was listening to a Podcast where the presenter posed the question: why would a teacher take the time to create a video if they can find one online that is professionally done? That took the pressure off, but I still plan to record some demonstrations.

Weekly Zoom meetings provide a way to get to know the online students and see their faces and answer questions. This has been successful for some students, but others, even with multiple invitations, have never connected to the meetings. I have also used Zoom when we review for tests. I think Zoom will be one of the advancements that will improve our post pandemic world.

Creating weekly schedules in Google Slides and embedding those in Canvas has not only helped the students, but keeps me on task as well. I can update the slides in Google and the files automatically update in Canvas and PowerSchool (our grading and attendance SIS). Having those schedules planned for at least two weeks gave me some peace of mind just in case I was the next Covid case. The students would know each day what the warm-up, classwork, homework, due dates, and announcements were for the next 2 weeks. Being prepared for the unexpected helped ease the stress.

Ⅱ. DIGITAL PROMISE MICRO-CREDENTIALS AND COMMUNICATION

Our district utilizes Digital Promise to provide teachers with a pathway to complete micro- credentials to learn new skills. The micro-credentials I had earned helped a great deal with online learning.

- Kind Critiquing – I learned how to conduct critiques and created several forms for group and individual self-evaluations that work either online or in class. Having rubrics that students can fill out online makes the standards and expectations clearer.
- Developing Digital Portfolios – This became invaluable as an online tool. I have students create Google Drive Folders and take photos of their work and share the folder with me. Students were already doing this before the closure, so this made the transition to online learning much easier. Now online students take photos of themselves holding their work so I see their faces and a bit of their personality – and sometimes their kitchen counters. I learned how to make comments on the photos so that students get timely feedback and can reply to the observations and suggestions I make. Students can share their portfolios with parents and friends
- Expressing Personal Perspectives – Giving students the opportunity to reflect on their learning was important as students gained experience in critical thinking as they choose their subject, medium,

and plan for their projects. They created thumbnail sketches and rough drafts and participated in group and peer critiques and then revised and refined their work. Students reflected on their ideas and their creative process as they wrote artist statements. Having an outlet to share their feelings has been especially important during the Pandemic.

- Foundations of Motivation in Practice – Motivation during Covid is rough, and I have students who are not motivated, but I am always trying to improve student motivation. I learned ways to help encourage students in setting goals for personalized learning. I have tried to create an atmosphere where students are involved in authentic experiences where they are working towards sharing their work and connecting with an audience.
- Student Voice and Choice – I give students several options for assignments. I created a choice board for the ceramics students so they had a voice in the projects they made. I encourage students to explore, create, and reflect on the creative process as they revise and refine their work.
- Communication with Guardians –Communication with students and parents is critical for online education. I became much more intentional, and I have spent a lot of time contacting parents. I keep a spreadsheet of the students and parents with dates and type of contact made. I use emails, Canvas announcements, phone calls, and text messages. After the first two weeks of the closure, I had many students who had not picked up their supplies so I made home deliveries. It was interesting to see the homes of the students. It gave me new insights into their lives.
- Supporting Student Learning in a Digital Environment. While we were finishing up with classes in the spring, I completed this course, which had helpful ideas and gave me the opportunity to create an Online Art Show.

Ⅲ. FLEXIBILITY AND ADAPTED CURRICULUM

One of the highlights of the year for student artists is the annual art show. Many students, parents, and community members attend. That was not going to happen during a Pandemic. I felt bad for a minute until I decided that since the students were already sharing photos of their work in their digital portfolios, I could use PowerPoint slides to display their work on images of gallery walls that I found online. I used Adobe Spark to create a video with music and published the show on the district website and Facebook page. The students were excited about having their work displayed, and it was assessable to more people than normally attended the show.

The important part of online learning is to give students opportunities to grow and discover new ways of seeing and creating, so we did “land art” and made designs in nature. The module on Canvas had a video

of a contemporary land artist and was the perfect segue to a discussion about Robert Smithson's Spiral Jetty, which is right here in Utah. This project got the students outside in the fresh air and made them think outside the art box.

We also created found art sculptures where students used unwanted items from home to create a sculpture. The students were very creative and came up with some awesome artworks.

When school closed my advanced art students were in the middle of creating a mural to be displayed on Main Street. The project was progressing nicely, but came to an abrupt halt. This project had taken considerable planning and effort and now prospects of completing it were looking bleak. Some of the students were seniors and would not be around the next year to complete the project. No one was allowed in the school until May. I had to be flexible and patient. The seniors made special efforts and came in and finished their parts during the summer. Parents of some of the students were very guarded about having their child around anyone else. Two of the students chose to do online school this fall, but came to school on their own time to work on their part of the painting after school. It was a challenge and what should have been done in May took until November. I came to the realization that we can't accomplish the same things in the same way or in the same time frame as we could before, but even in this pandemic we can offer opportunities for students both online and at school to participate in authentic and worthwhile projects.

Ⅳ. SOCIAL AND EMOTIONAL LEARNING

The pandemic has been difficult for everyone, but especially for students who do not have the life experience to see that the world has recovered from many tragic and life altering events. I wanted my students to feel hope and have positive outlets for their frustrations. To address social and emotional learning I created two new experiences for students that I had not tried before. To give concurrent enrollment Art Appreciation 1010 students an opportunity to express themselves and have an impact on others we created projects using the "Six Global Competencies of Deep Learning" (www.NPDL.global)

©New Pedagogies for Deep Learning™

- Collaboration
- Critical Thinking
- Character
- Creativity
- Citizenship
- Communication

Normally the course requires three papers dealing with art history. Both the students and I were tired

of writing and reading papers, so with our emotional well-being in mind and to add a little flexibility to the curriculum, I gave the students the option of creating an artwork that had a positive message to be displayed in a public building. We discussed as a class what this could look like. Then the students collaborated in small groups, but each person did an individual project. The rubric addressed all 6 of the global competencies. This was a great success with artwork ranging from a Pop Art piece about being kind that will hang in a dentist's office, to an abstract expressionist piece with a quote on healthcare by Albert Einstein for the local chiropractor. The students were enthusiastic about having their work displayed and still did research on the artist and style of art they chose as inspiration. They wrote artists statements and summaries of their collaboration with their peers. It provided a real-world opportunity to create meaningful art with a social message.

To aid self-awareness I took a course offered by Utah Museum of Contemporary Art that focused on meditation and mindfulness. I led my advanced art students through the breathing exercises that I learned to help them relax and get in touch with their inner feelings. This takes just a few minutes but aids in a sense of wellbeing that we all desperately need right now. I explained the physiology that was discussed in the course emphasizing that breathing deeply can not only help your mental wellbeing, but also the physical benefits of clearer thinking and better digestion.

I realize that I am lucky to live in an area where students could choose to attend school or learn online for the current school year. We are also fortunate that each student has an iPad. Even with those advantages not all students choose to learn. However, I believe that there are some positive outcomes of the pandemic. The students that are in the classroom are more respectful and after having experienced online learning realize it is a privilege to come to school. I am also more compassionate and have more empathy for the students who are struggling.

This Pandemic has forced us all to be more patient, more flexible, and more appreciative. I learned that the part of education I love most is interacting with the students and seeing their progress. Whether that is in person or online, I'm grateful for the opportunity to be an educator.

Teaching During COVID-19 Times

Clark County Education Association, Las Vegas, Nevada | **Grace Angel**

Wednesday, August 7, 2019 – This was the 1st day of the 2019~2020 school year for our licensed teachers. This morning, teachers were greeted with a pancake breakfast prepared and served by the administration. The student cafeteria that stood empty and quiet throughout the summer months was now filled with teachers sitting around tables eating and mingling. The room echoed with sounds of conversations about summer adventures, bursts of laughter, and an occasional ringtone of a phone that was not set on mute.

A stark contrast to the 1st day of our 2020 school year. The school building had been closed to students and teachers since March. Schools in our district were instructed to plan for a virtual 1st day back. Teachers were not expected to attend the 1st day back in person and if they did, this year, it did not include the traditional pancake breakfast. The space that once encouraged close knit conversations was set up to keep teachers socially distanced. Verbal communication was limited and muffled by the wearing of masks. Teachers that opted to attend virtually were faces with muted microphoness projected on a screen.

This 1st day experience served as an indicator of what was to come – our teachers being faced with countless changes and thrust into new territory "teaching during covid times." Although anxiety about distance learning and virtual teaching stemmed from even our most seasoned teachers, so did the desire to succeed. The desire to support our community, keep students engaged and families connected, and to learn how to use the tools that support these goals. Success was not defined by test scores, but by the ability to lessen the anxiety of the "new normal" and lift the embracing of real successes.

75% of teachers in our school have over 5 years of in person classroom teaching experience. Of that approximate 10% have 10 years or more. My role as a learning strategist, and specifically, the technology learning strategist, gives me the opportunity for work with all staff and students in some capacity involving the integration of technology in the curriculum. During pandemic times, this role has also evolved into tech support for families and other school stakeholders. The surrounding community that our school serves is in the lower socio-economic bracket. Over 50% of our students are non-native english speakers and 85% of students in our school qualify for free and reduced lunch. These statistics are well known and felt by our teachers. The loss of income due to unemployment (as the result of the pandemic) has added more financial burden on the families we serve. The lack of financial resources prompted

teachers to ask the question about access. How will their students access distance learning? Will they have internet/connectivity? Who will support students using these tools?

The 1st question about access was answered by our district which provided devices to schools to deploy to all those that needed it. Teachers could be reassured that students would have a means to access their classes and content. The district also worked with other agencies to provide hot spots (internet connectivity) for families that qualified. With these two obstacles removed, teachers could then focus on their content and delivery. A technical support team for the school aides families with the use of the devices. Teachers are not totally shielded from providing tech support, but they know that there is a team to help and can refer the student/family to them for immediate help.

Access to technology and the need for tech support also extended to our teachers. Although most teachers owned a device like a desktop computer or laptop, teachers needed additional equipment like a document camera or a second monitor to effectively deliver distance learning from home. The school allowed teachers to check out additional equipment to use for distance learning while teaching from home. There was no need for teachers to spend their own money. Also, the same tech team that provides support to families served as support for teachers. This includes walking them through connecting devices and installing needed software.

Our district outlined specific programs that were required to be used by teachers to deliver curriculum and interact with students (video conferencing). This included Canvas LMS (Learning Management System), Google Apps for Education (Google suite, Google Meets), and another digital learning platform called CLEVER. What has helped with teaching during covid times is accepting that starting simple is better. Teachers learned to take a step back and think about how these tools are accessed by students and parents. In most cases, expecting less was more; introducing parts of these programs systematically, bits at a time, set the users up for success. But it took teachers a bit of time to accept that “simple” was where it needed to start. Now, after 5 months of distance learning, new programs have been gradually introduced. This planned pacing has allowed students and parents to acclimate and learn without feeling too overwhelmed.

Teachers that have strived to create consistency in the way their distance learning is delivered have experienced the most success. As it has proven in traditional in person learning settings, consistency in classroom expectations, schedule, and access to resources (ie specific programs or learning management systems), has lent itself well to classroom management.

A designated work space free of distractions is key in the success of both students and teachers to engage in distance learning. Teachers have emphasized the need for students to have their own designated space in the home to work and engage online. Acknowledging this need, the school decided to lend out student desks and chairs for families to create a learning space in their home. This simple act extended by the school administration effectively met the need of both teachers and families.

The importance of relationships has been pushed front and center with full time distance learning. For both teachers and students, Interacting with others via a device does not lend itself naturally to forging strong relationships. Social dynamics are harder to recreate in the virtual world. With the support of counselors, social workers, and other social/emotional professionals, teachers are beginning to intentionally build in time within their virtual day to engage students in building relationships. Those that have started this practice have found that students are more likely to attend class as they feel more connected and look forward to this social time.

Professional relationships amongst teachers has played an important part in the success of their efforts with distance learning. As reflected by our staff, those that collaborate with others have seen more success in engaging their students and families than those that choose to work in isolation. Collaboration is not new, but the act of doing so now for teachers during these "new times" takes more deliberate planning and action. Teachers are not on campus together at the same time to engage in chance conversations or lunch meetings. Distance learning schedules may differ and moments in between instruction are usually filled with checking in with students.

But those that do make the effort to collaborate reap the benefits. It is a reward well received by those that have participated in professional learning groups like those created by the micro-credential experience. These particular groups of teachers that have worked together on micro-credentials have maintained the relationship beyond their physical classroom walls. Within these groups, teachers communicate ideas without fear of judgement but expect honest feedback – practices modeled within the micro-credential process. This kind of professional relationship can only flourish when trust has been established and the experience of working on micro-credentials, for these teachers, set the foundation for this.

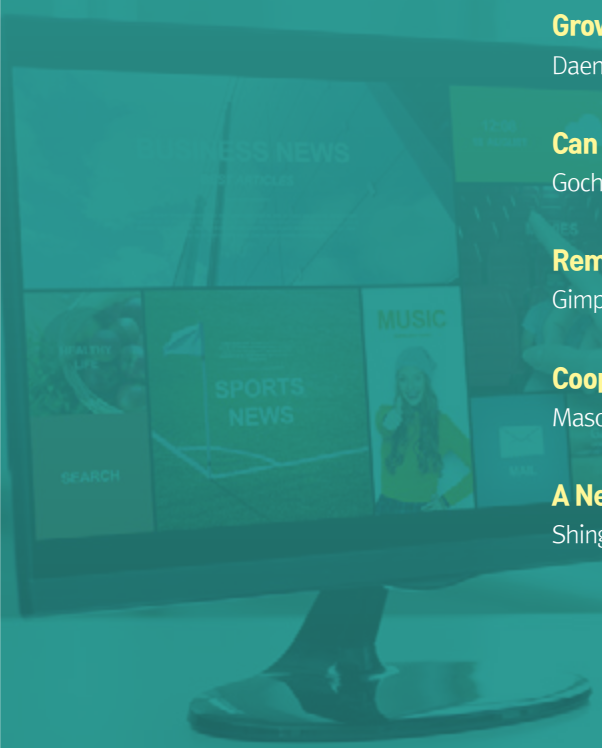
In addition to school groups, joining professional learning communities beyond those created at school, has also created some success for our teachers and distance learning. An example of this would be Facebook or Google groups that focus on specific digital tools or programs used for distance education. Well moderated groups support its members to focus on posting insight on how to best utilize these tools

and to share their successes and failures. Members are able to learn, build, and apply lessons learned from shared experiences.

Five months into distance learning and the teachers continue to shape and adjust their content delivery, but the overall level of anxiety has lessened. Underlying these successes is the fact that the school administration is very supportive of their teachers and open to listening to their comments and needs. Communication is key to ensure that all stakeholders involved (teachers, staff, students, families) are clear about expectations and direction. With staff all working from home, clear and effective communication is especially vital to maintain the running of the school and ensure the needs are students are being met.

The lessons learned thus far have gradually changed the perspective of distance learning and virtual teaching experience. The somewhat bleak start to the school year no longer reflects the expectation of struggling the entire year. The reflections shared pertain to observations and experiences specific to our teachers and site. But there is no doubt that these lessons are being learned and applied in other schools, in other districts, in other states. Teaching during covid times is not easy, but it is not impossible. Our teachers are proof of that,

chapter 2



Educational innovation through online classes

Seoksung Elementary School | **Hong Ji-yeon**

Ⅰ. The voyage of uncertainty

The painting on the right is one of my favorites, "Moonlight" by Albert Pinkham Ryder. The ship sailing across the night sea in the gentle moonlight is elegant, yet lonesome. A journalist saw this painting and gave it the subtitle, 'Voyage of Uncertainty'. Perhaps he felt sympathy for the sailer, who had to sail into the seas that would be completely dark if the moon hid behind a cloud.

It is like the situation we are in right now. We thought the COVID-19 would pass in a month or two, but it has lasted for over 10 months, and social distancing if stronger than ever. I worry when I hear the news of thousands of coronics overseas, and feel relieved that Korea is doing a little better. The I worry again that things might get worse here too. That's just the beginning. COVID-19 has completely changed or daily lives. Stores are closed at 9, meetings are held online, and work is done at home. Masks are not just an inconvenience anymore. Some people have turned it into an element of fashion. People are having gathering online, and even holding wedding ceremonies online. With many new changes, we are living in the here and now.

This is also the case in online classes, which are new to teachers, students and teachers. It was confusing at first because it was new to everyone, but after a few months, we are all more stabilized and familiar with the online classes. We are not discussing whether online classes are possible or not anymore. Our concern now is the quality of the online classes. Some say that the online classes will be key to revolution in education that will lead the future society, and some say that it is a disaster that will severely intensify the learning gap among students with different capabilities.

Nothing seems certain at this point, but one thing that I know for certain is that no one wants our education to fail. People who are leading the online classes with a positive attitude and people those who oppose it with concerns both want the same thing. It is for us to overcome this time of confusion and for our children to get proper education, with no one falling behind. For this reason, I would like the suggest

to the former to think of a better direction, and for the latter to suggest a constructive alternative. After all, we do want the same thing.

Ⅱ. Educational innovation through online classes

Starting off with live lectures

The examples that I will share aren't the 'correct' answers. They are also in consideration of the situation in Korea, so I am not sure if it would be of help to teachers of other countries. But just like people around the globe are working together to fight off the COVID-19 pandemic, I believe that the teachers will be able to find the way with online classes if we work together.

Online classes caused a total chaos to school at first. Many platforms and tools for online classes such as Cyber Learning System, EBS online class, Widurang, Google Classroom, and MS Teams, but they were unfamiliar to most of the teachers. With the online classes banging on our doorstep, we had to access each website, ask around, and have a fierce discussion on which platform to use for online classes. We also had to decide on the tool to use for two-way online classes, among Google Meet, Zoom, Webex, and Youtube Live, trying to figure out which was the most stable and with convenient features. Some teachers still believe that two-way classes are the best options, while others opposed the reality where the ability to handle these tools well seemed to speak for the teacher's ability to teach.

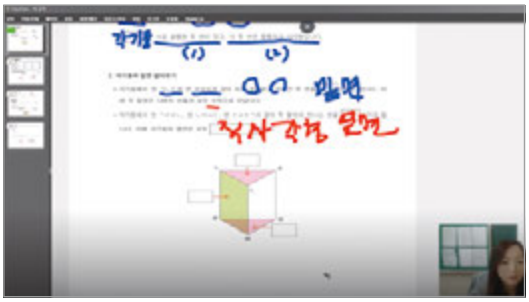
Every tool has its strengths and weaknesses, and it would be best to select the tool that best fits the situation with the school, teachers and students. Also, as a teacher conducting two-way classes mainly, I would like to say that it requires a more careful looking into. By the way, I chose Edwith live lecture ((https://www.edwith.org/) as the tool for my class.

Edwith is similar to Youtube Live in that the lecturer transmits the video, and the communication can only been done through comments. Nevertheless, I chose this platform because of data sovereignty. Data sovereignty can be defined as the right to protect data and determine how and what it is used under a fair contract.

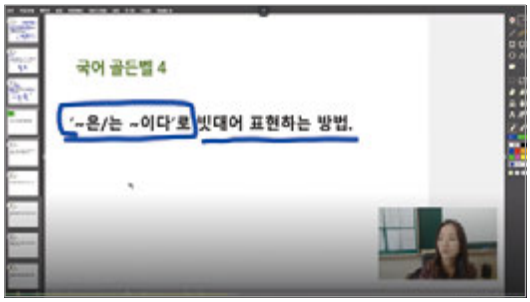
In cloud computing, it means that digital data is subject to the laws of the country where the data storage is located. If we use the education platform of foreign companies, a lot of our student's education data is stored in the overseas cloud. Under the current privacy law, personal information can be transferred to foreign countries as long as the information subject agrees. Over 70 percent of the information subjects do not properly read the terms and conditions before clicking 'I Agree.' I don't think there are many Koreans who know in detail how their personal information given to Facebook or Google is being handled. The current Korean law neglects the leakage of personal information overseas and leaves it to the individual 'consents' that are just a formality.

Don't get me wrong. I use Google and Facebook a lot myself, and I'm not trying to say that we should use domestic products out of patriotism. It is the matter of being alert about data sovereignty, since the relationship between data and national power is growing in the current economic ecosystem. We should prevent the leakage of educational data and the personal information of our students to overseas education platforms. Edwith is a MOOC(Massive Open Online Course) platform run by the Naver Connect Foundation of Korea, providing services free of charge. It provides lectures on scientific technologies and SW for universities such as SW coding, web & mobile programming, and AI.

I set up an online lecture on Edwith and began live classes. My students do not need a webcam or laptops to access the online lectures, see my face, and ask questions in real-time through the comments. I thought it was not much different from Zoom or Meet, since you can see the students' faces, but all their audio is muted for class. At the end of the class, Edwith would automatically record and upload the video, allowing the students to replay the video at any time. We continued classes on Korean, math, social studies, and science for the first few days. To prevent the live lecture from becoming the lecturer's one-way communication, I gave out pop-quizzes and had the students solve it on the comments then explain the answers to maintain their concentration.



Math class



Korean class quiz

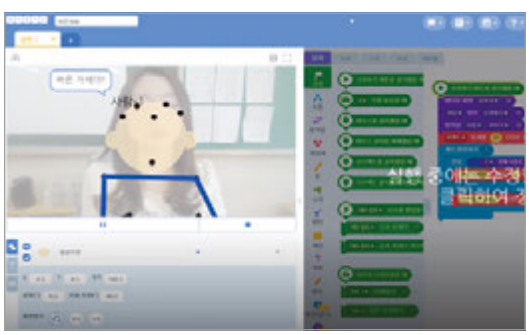
My AI Workbook

My Coding Story

But the classes grew boring since we couldn't see each other and communicate via comments only. I wanted to do something special for the online classes, and become more intimate with my students. The first idea that came to mind was "Special Class on AI."I majored in elementary computer education in the graduate school, and I wrote books on SW and AI education in the attempt to cultivating computing capabilities for the upcoming intelligent information society. The 6th grade class that I taught this year had no experience with SW or AI education, and I believed they would be motivated to take special classes on AI.

I put a lot of thought into planning the curriculum since the student's never studied AI, and it was online classes. There were going to be projects and presentations, so 27 students were too much for one class. So I divided the class into two groups and had group 1 take the live lectures and group 2 to take the recorded lectures. This is the upside of remote classes; there are no limits in time and space. Live lectures do have its advantages, but students who could not fit the schedule listened to the recorded lectures. Some preferred the live lecture with the fixed schedule, and some preferred to listen to the recorded video any time they want.

I taught programming using the various AI technologies of Entry, and had the students present their own work at the final session. For students who submitted a recorded video of their presentation, I played the video to the others and had them give feedbacks via the comments. For students who submitted the work, I ran the work, showed it to the others, and had them give feedbacks the same way. In the previous



AI Class : Finding the right posture with motion sensing technology & student's presentation

sessions, I, the main lecturer, explained the concept and principles of artificial intelligence to children and demonstrated how to make artificial intelligence programs, so there was no inconvenience. But in the final session, it was a shame that we could not see each others' faces during the presentations.

You must not expect too much at your first attempt. AI education was new to us, as well as the online classes, and it was only natural that we, the teacher, students, and even the edutech companies such as Edwith are experiencing various unexpected problems. We are in the process of figuring it out. Our findings and developments will play a crucial role in the new normal era, the post-COVID era.

Ⅲ. Suggestions for the policy

What do you mean, learning gap?

I worked restlessly for 10 months. The online contents of Edwith and Cyber Learning System was used as a major learning tool, and they were supplemented by courses in EBS online classes and live two-way classes using Zoom. In classes using Zoom, I tried to make it more fun, using the M studio program to create a VR class, in which the materials and teachers moved back and forth between the real and virtual worlds. These various attempts were also reported on local TV news and helped other teachers conducting online classes.

Zoom classes using VR & the news team covering the class

I hear the news of learning gaps being intensified due to online classes. Many lower grade students are illiterate, and need help of the family members, which can be extremely tiring for the parents. This can be a big problem for families with low income, where the child needs physical care before studying or listen to online classes. This intensifies the learning gap. I have a 8 year old and 10 year old sons myself, so I understand the parents. As a teacher, I feel sorry and also a bit unfair. Who's fault is it? The parents who

cannot make time for their children? Or the teacher who cannot maintain the grades of 30 students?

We need to change the system, not find the victim of our anger and frustration. The problem with the learning gap of the underprivileged students is not a personal problem, but a social one. Currently, our school has the emergency care system for child care and support for those who cannot participate in online classes at home.

But not everyone who applies for the program can receive the benefits. The reasons are that there are not enough manpower, and also because there are not enough computers or tablets in school to accommodate the students. Both reasons fall under the category of costs. Of course, providing emergency care to all households that wants it might not completely solve the problem. Even still, I believe it needs to be done as the minimum social mechanism for those who need it. I feel bitter whenever I hear that emergency care cannot accommodate many students, and dozens are in line for the service. Some say that at the end of the year, departments use up the remaining budget so they can receive the same amount next year. As such, we need to look back on the school budget and see if they are used appropriately.

Ⅳ. A word for the teachers worldwide

Nevertheless, I keep moving on.

Korea is doing its best in the worldwide pandemic. The hardworking medical personnel prevented further damage. The teachers walking into an empty classroom, participating in online class training, working hard to provide the students with quality classes have made the current online classes possible. The parents have supported the school and the teachers with their understanding, trust, and compliance. I believe these are the things that made Korea, made its education what it is today. This should be the case in other countries too. The medical personnel, teachers, parents, students all over the globe are doing what they can where they belong; and that is what makes this crisis surmountable. That is how we will win this long, long fight. What do the teachers, including me, have to do from now on?

Most of the training programs for teachers were concentrated on improving competency with online educational tools, but I believe that has to change. The problem with the quality of classes is not only attributable to online classes, but they existed with the offline classes too. We worked in learning groups and shared classes with the parents and other teachers to improve our teaching skills and the classes. Such efforts must be made in online classes too. The format and contents may vary, but we need to

work on the quality of the online classes, as much as we did with the offline classes. We need to give up the naive thought that online classes will end as soon as this pandemic is over. We do not know when another disaster will destroy our society, the world. Before COVID-19, blended learning was about online classes supporting the offline classes. Now, it's about offline classes supporting online classes. Whatever the main format is, the important things is preventing learning gaps for our students. Times are difficult, nevertheless, we keep moving on.

Narrowing the academic gap with two-way video classes

Gimpo Shinpung Elementary School | **Choi Sang-hyeon**

Ⅰ. The first remote classes have begun.

There were great changes in the educational field in 2020. Some even say that "we are facing the biggest change in education since the Japanese colonial era." The change began with the breakout of COVID-19, which called for the transition from face-to-face classes to "non-contact" classes. At first, many people thought the epidemic would pass quickly, and schools were simply postponed. However, the situation with COVID-19 did not get better, and schools began running remote classes. There had been some cases of remote classes before, but this was the first time that remote classes were carried across the whole educational field, and this caused many changes.

Ⅱ. Types of remote classes

There are three types of remote classes: content utilization classes, task execution-oriented classes, and real-time interactive classes. The preferred type of remote classes can be chosen by considering environmental factors such as physical environment, student levels, and subject and course content.

Remote Class 1.0

▶ Type: content utilization class
▶ Platform: Cyber Learning System
▶ Situation: school postponed (2 weeks)
▶ Purpose: maintaining the learning atmosphere, checking attendance
▶ Functions used: website content, attendance, evaluation
▶ Characteristics: choosing subjects and members in consideration of reorganization upon the restarting of school, difference between the content and curriculum

Cyber Learning System content

Suggesting subject and unit in consideration of reorganization upon school restart

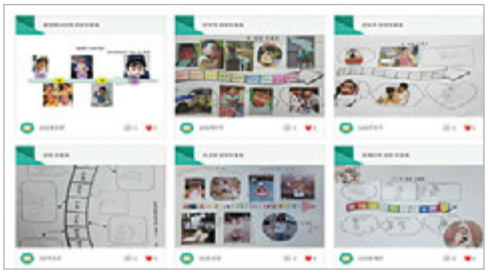
Since the introduction of remote classes due to COVID-19, schools have made various attempts to keep up with the existing classes. Various types and methods of classes were carried out according to the situation and level of each school and grade, and schools tried to optimize their remote classes according to the situation in many stages. The following is an example of a remote class that took place for the sixth-grade class of Gimpo Shinpung Elementary School.

When we first started the remote class, it wasn't as a substitute for conventional classes, but as the result of a 2-week delay to the start of school. The objective wasn't to change the curriculum to one of remote teaching, but offering tasks intended to reduce the learning gap after the start of school. Therefore we selected the Cyber Learning System and EBS online class as the platforms, due to their having their own content. The Cyber Learning System website made it easy for students to make accounts, offered short, simple content, and it was easy to grade work using the question bank. For these reasons, we selected the platform and chose subjects that could be reorganized when school restarted. At this stage, the remote classes were carried out with no problem since they weren't a burden.

Remote Class 2.0

- ▶ Type: content utilization + task execution-oriented class (partial)
- ▶ Platform: Cyber Learning System + learning bundle
- ▶ Situation: school postponed further (number of school days reduced)
- ▶ Purpose: preventing learning loss
- ▶ Functions used: linkage with EBS, outside materials, and message boards
- ▶ Characteristics: message boards used for discussion, worksheets given, interaction (uncomfortable),
  Difficult to know how much the students learned without learning feedback
  Difficulty with curation and problem with the home room teacher role

Own content + outside content (YouTube, EBS, etc.)



Giving assignments on message boards

School was postponed first for 2 weeks and then delayed further since the situation with COVID-19 worsened. The 190 school days were to be reduced, and there were going to be cutbacks to the planned

curriculum, so in order to prevent learning loss, we provided student households with a learning bundle in linkage with the content. We provided additional supplements for content from outside platforms such as EBS and YouTube and used a message board for worksheets, discussions, and interactions.
However, it was difficult to receive learning-related feedback from students, and therefore difficult to know how well the students were learning the material. It was also difficult to curate the limited video materials, and the role of the home room teacher was also limited. These factors also caused learning difficulties.

Remote Class 3.0

▶ Type: Producing customized content + learning bundle (for lower grades), task execution-oriented class (for higher grades)
▶Platform: Cyber Learning System + learning bundle (for lower grades) / Google Classroom (for higher grades)
▶Situation: start of online schooling
▶Purpose: substitute classes
▶Functions used: providing content URL and tasks, Google Document tools
▶Characteristics: immediate feedback, assignment instructions, portfolio, academic balance lost, learning gap intensified

Google Classroom

As schools were official started online, the content of classes substituted for that of the offline school. The previous platform was insufficient, so we introduced the Google Classroom platform for more various task execution purposes. Google Classroom can be used to give individual and group assignments and quizzes using Google tools (Workspace, Slides, Forms, Jamboard). Hidden comments could be used to receive individual feedback from students and teachers could share their own content and provide appropriate tasks for each period to accurately grasp the degree of learning. In some subjects, they were able to better understand the learning of the students than they did in offline classes. However, the problem was that the learning gap intensified depending on the learning attitude and ability of the students.

Ⅲ. Introduction of two-way video classes

In remote classes, the students chose their time of learning and had to solve the quiz or do the assignments on their own. The problem is that their actual ability to do so on their own varied greatly. The students' learning also depended on their home environment and the household's method of education. Some students have parents that work late, and meanwhile just played video games and did not do their assignments. Some would just play the learning video while doing other things, and copied and pasted answers for quizzes off the internet. Some would not participate in the classes and wouldn't even receive our calls. So we introduced two-way video classes to encourage their participation.

It was not easy to acquire the digital equipment, wireless networks, webcams and microphones for two-way video classes. We were able to participate in the MeetUs program under development by SK Telecom, which enabled the two-way video classes.

Remote class 4.0

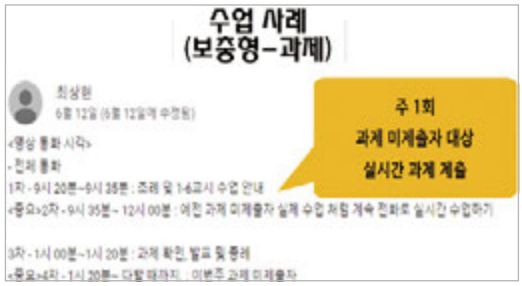
▶ Type: Content + Task execution + Two-way video class
▶ Platform: Google Classroom + MEET
▶ Situation: after online start of school
▶ Purpose: substitute for offline classes
▶ Functions used: Google Documents tool, video calls
▶ Characteristics: two-way video class, individualized guidance

Two-way video class using SKT MeetUs

Two-way video classes were held in the morning and afternoon, using SKT MeetUs platform in the morning and Google Meet in the afternoon. The reason why different platforms were used was because of the differences in the functions of the platforms. MeetUs was good for having students participate in the morning and to check attendance, while Meet had the advantage of offering screen-sharing and group

discussions. Classes were always held for about 30 minutes from 9:20 a.m. to allow students to attend classes on time. At this time, we gave instructions for learning methods by describing the content and tasks presented in the Google Classroom. In the afternoon, we checked assignment feedback and learning progress for about 30 minutes from 1:00 p.m.

The use of Google Classroom and two-way video classes increased student understanding and participation in classes. It was easy to check their progress, and did not differ significantly from offline classes. However, some students with lower self-learning ability still found the online classes difficult. We tried the following to reduce the learning gap.



First, we gave instructions about the classes for 30 minutes in the morning, and then we carried out a video class for students with weak basic learning for about an hour. The classes were reorganized to fit their level so that they could understand it more easily. If this was not enough, the classes were extended. At first, there were no significant results, but from about two to three weeks in, students began to gain confidence and do better in classes. The supplementary classes were gradually reduced from three times a week to one or two times a week. These students showed higher than average achievement levels.

Next, we gave homework to students who did not have a problem in terms of their academic abilities, but exhibited insincere attitudes and did not do their assignments. The time allocated for this was primarily on Fridays, and the timetable consisted of subjects with easier assignments. After the classes ended, students who were behind on their assignments for a given week continued the video classes until they finished their assignments. The students finished their assignments surprisingly fast in these situations, and doing this once a week increased the assignment completion rate.

Currently, video classes are being held for about two and a half hours a day, and students who cannot finish their homework are completing it during supplementary classes of about an hour each.

Some say that "it will never be the same after COVID-19." Education in Korea changed greatly in 2020, and in the middle of the chaos, teachers managed to carry out remote classes stably with their collective intelligence. There is a saying, "A hundred classrooms have a hundred different classes." I hope to be a teacher who can offer classes that are suitable for this new era, and who is able to challenge students intellectually.

Communication and communing in remote classes

Gangneung Hansol Elementary School | **Lee Kwon-young**

Ⅰ. Introduction

1. Experimental school for remote education

COVID-19 brought about many unforeseen changes. Our school began remote classes amidst the confusion, earlier even than other schools with experimental school programs. Remote classes were not easy at first. None of us had been down that road previously and we did not know where and how to start.
Looking back at it now, I believe that the cooperation and hard work of teachers made it possible to proceed with remote classes this far. After our school was designated as an experimental school for remote education, we established a step-by-step plan. Since most of the teachers had no understanding of remote classes, they had to be trained in the use of the tools first. Then we discussed the application of the remote classes.
Our goal was simple: to experience the three remote education methods proposed by the Ministry of Education before the start of online school, identify problems, and think about how to approach remote classes. We conducted remote education hoping that the results would help many schools that would go on to start remote classes.

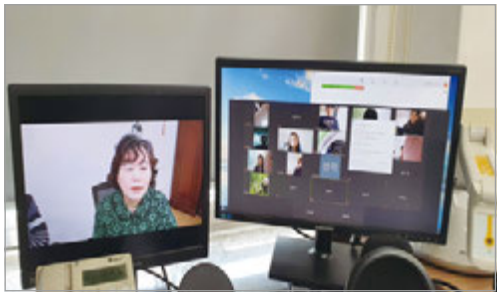
2. Identifying problems

Many problems occurred with remote education before the start of online school. People were not familiar with the two-way platforms, and there were problems with internet connections or a lack of equipment for remote training. For 2~3 weeks, we had a hard time. There were no precedents and no relevant examples we could find, and we had to figure things out ourselves. Thanks to this experience, however, we were able to quickly stabilize the remote classes after online school started.

Ⅱ. School delayed, online school begins

1. Online school begins

After the start of online school, the actual remote classes began with YouTube live streaming of the entrance and opening ceremony. The remote class method of our school proceeded in three ways according



Hansol Elementary School online entrance ceremony

to the characteristics of particular subjects in order to maximize student interest. What the members of the school agreed during the experimental school for remote education stage was that they should not rely on just one method. It was much more efficient to appropriately apply a combination of two-way, content utilization, and task execution techniques.

When assigning textbooks, we provided workbooks that we made so students with no printer at home would not have a problem with remote classes. The workbooks were different for each grade, and my 5th grade class was given workbooks for art, math, and social studies.

This workbook later helped a lot when doing two-way and task-execution remote classes and became a tool for communicating with the teacher even for students who had problems with the Internet or equipment.

2. Two-way class

Our school used all three methods suggested by the Ministry of Education, but the main method of remote education was two-way classes using ZOOM. After trying out different methods, we found that ZOOM made it easiest to communicate with students and to identify problems and questions. The fact that it was easier to communicate with students than the other options was another reason why I decided to make two-way classes the main format. We also had experience with it before March, so I concluded that two-way class was the best means of building rapport.

We set the daily hours of two-way classes for each grade, but not all classes were carried out this way. This was because we concluded from the experimental school that carrying out all classes in two-way form wasn't efficient. The advantage of making two-way classes the main method was that server or connection problems with the online platform could be dealt with quickly, and the classes could be carried out without interruption.

3. Reading emotion

The morning of our school's remote classes varied from class to class. Our class started with talking about the day's feelings and what happened the day before. We looked at each other's faces and talked about

our feelings. After some time, I found various related materials on the Internet.

I found the emotion attendance on "Chamssaem School" and used the footnote function in ZOOM to display my emotions and communicate with the students. Both teacher (host) and students (participants) could use the footnote function, and we could see who wrote what.

Emotion attendance (Source: Chamssaem School)

Although everyone was tired of the epidemic, communicating with each other smoothened out the beginning of each morning, and this continued into the offline classes later on.

4. Remote class teaching method

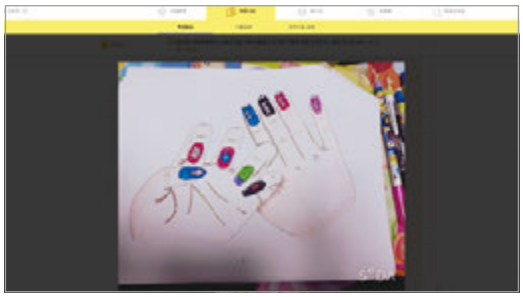
Most of the classes at our school used Class123 as classrooms, with the classes carried out through Google tools and ZOOM. We used Class123 for the basic class courses. I opened a message board on Class123, and provided information on the classes from the 1st~6th periods. I titled the classes in a way that the students would know which type it is, (e.g. Two-way: 1st Period Math) whether two-way, task execution, or content-utilization.

The students saw this information, and were able to prepare for class. I also gave out weekly class information letters to help students prepare.

The assignments to be submitted after each class were submitted in the comments section of each class, and the feedback on each assignment was given in the comments in order to communicate with students. Also, the online ZOOM conference was always open, so if the students had any questions or problems, they could communicate with the teacher.

Remote class using Class123

Art class assignment

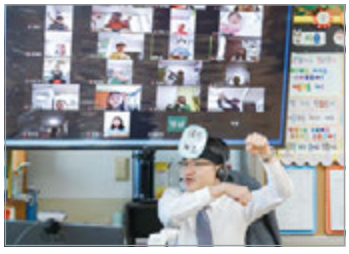


Feedback on assignments

Classes taught by other teachers were also carried out two-way. The homeroom teacher would give host authority to the teacher of each subject in that period. The teachers also used the Google Site tool to establish a dedicated website so that students would have access to class materials. They also used Google Classroom as an assistive tool to enable students to participate in the classes using various methods.

Hansol Elementary School subject-dedicated website

English class using Google Classroom



Two-way P.E. class for 2nd grade

Students and teachers both tired of the two-way remote classes. As mentioned earlier, it is not very efficient to carry out all classes in a day in two-way form.

To overcome this problem and increase the effectiveness of remote classes, we decided that it would be better to have the students participate directly in remote classes. Based on the content presented in two-way remote classes, we presented a table on Google Documents for the students to fill in and had them participate in classes.

The students had to find materials themselves, fill in the content, and learn things themselves. The table was also an easy way for the teacher to grasp and give feedback to each student.

5. Two-way and content utilization class

It was more effective to vary the classes by mixing two-way classes with content utilization and assignments.

For content utilization classes, we used Google Surveys to provide video clips. We inserted the URL of the class video in the survey and provided questions on the video to find out if the students had learned things properly.

6. Blended learning

As remote classes continued, I began to search for better options. I did not want the online classes to be something by which we just waited out the epidemic, but something that was worth the time in itself. In order to do so, I believed that a blend of online and offline learning was the best format to use.

Online classes should be a supplement for offline classes, and vice versa. A teacher could make use of the advantages of both online and offline classes if he/she plans and executes the classes accordingly.
There was one class I taught which was a debate class for 5th graders. The topic of discussion was "We cannot go on a field trip this year. Where should we go next year?"

Selecting the topic	Organizing teams	Research	Making materials 1	Making materials 2	Organizing materials	Presentation of materials and debate
Offline	Offline	Online	Offline	Online	Offline	Online

Debate class steps

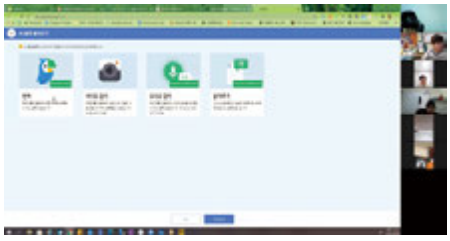
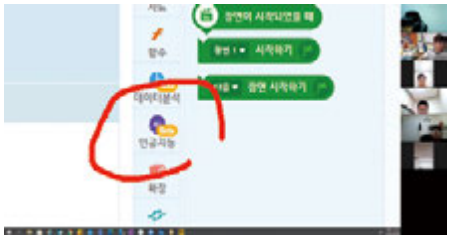
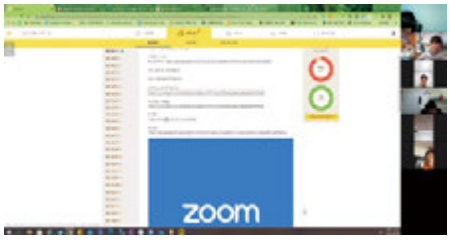
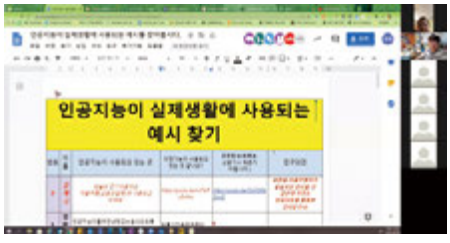
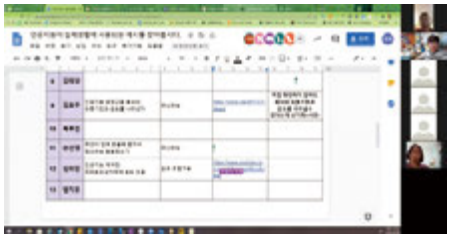
This class was carried in a blended form of offline and online classes. We selected the topics and organized teams in offline classes, then researched and made presentation materials both offline and online using Google Documents and Google Slideshow.
The debate and presentation was held on ZOOM.

Making use of both online and offline resources made the two-way class much easier, and the students liked the idea of having the teacher around to provide assistance. It helped them with their preparation for the debate.

Two-way presentation

7. Communing and communicating online SW · AI education

Details	Title of Program		Title of Program	
Communing and communicating online SW · AI education	Period	Activity	Period	Activity
	1	code.org Escape the maze	5	Make your own work with Entry
	2	code.org Complete Minecraft mission	6	Basic activity with AI (code.org Ocean)
	3	Complete Entry mission	7	Blocks and principles of AI
	4	Learning the basics of Entry	8	Using AI blocks for programming

Step	Explanation of Entry AI block
1	 
2	Learning the basics of AI through video
	 
3	Taking a quiz with Google Surveys
	 
4	Completing worksheets with Google Documents
	 

The SW · AI classes were carried out online, which wasn't very difficult with the two-way platform. In one of the activities, the students were given explanations, watched a video on AI, and wrote a short report on what they'd learned on Google Documents. A total of 8 weeks of SW · AI classes were carried out, and the students were satisfied.

We were able to carry out SW · AI classes even as the situation with COVID-19 became prolonged. With the use of digital tools, the students' digital literacy was improved. The SW · AI classes were carried out with the active sharing and cooperation of the students.

Ⅲ. Policy suggestions

1. Be prepared for various circumstances

There is an infinite number of things that can go wrong with remote classes. That is why they require thorough preparation. Schools should provide guidance and training programs to handle unexpected situations with the platform or the connection, etc.

2. Sharing and improvement of environment

As the remote classes continued, teachers began sharing their experiences and knowhow with each other. We had an online training program in ZOOM (see photograph below) to help teachers carry out the online classes. It is important to set up this non-contact sharing environment at the policy level.
I also believe that there should be a policy to provide the students with mobile devices and improve their internet connections at home.

Remote class training (On ZOOM)

Ⅳ. A word for teachers in the U.S.

It is extremely difficult to predict what education will be like in the future in Korea and also in the U.S. We do not know if there will be other situations similar to the COVID-19 epidemic. Having a plan for online classes will provide additional options to any teacher who might face another situation whereby the students cannot come to school in person. I hope this short report will be helpful for you.

Turning crisis into opportunity: remote classes and the future of education

Yeongok Elementary School | **Seo Seok-hyeon**

Ⅰ. Introduction – Beginning of non-contact education, school in crisis

In March 2020, we were all surrounded by the COVID-19 epidemic. The news reported constantly on the virus infections, and it caused fear in all of us. Maybe it was the fear itself that we feared, but nevertheless an unprecedented crisis hit the whole nation and everyone was afraid. The chaos extended to the educational field and schools were delayed for longer than ever before. The delay couldn't continue forever, but the epidemic wouldn't die down. Everyone involved in the educational field discussed day and night about the safety of students and classes.

Negative attitudes come up with excuses, while positive attitudes find a way. The passive decision we made was to adjust the number of school days and cancel many school events. An active decision was to hold online classes, by which students could participate in classes at home. Most of us agreed that this was the best way to ensure the safety and continued learning of students. However, there were many obstacles in the way of the introduction of new remote education. Teachers shared ideas and communicated each other in order to overcome these difficulties. This effort of theirs began to bear fruit, and the time of crisis began to turn into a new opportunity.

Ⅱ. Turning crisis into opportunity

After four delays to the start of school, we decided to start online schooling. This brought about great changes, just like the change of seasons. The absence of children in the classrooms was filled by the enthusiasm of the teachers, and our days were busier than ever. There were many tasks to complete, such as choosing the remote class method, selecting the platform, training the teachers, training the students to adapt, gaining the consent and cooperation of parents, acquiring devices for the classrooms, learning the use of remote class tools, making class materials, and cooperating with other teachers. Students had to acquire smart devices and establish good internet connections at home. All the teachers, students, and parents worked together to proceed along this new and difficult path of remote classes. The crisis united us and strengthened our bond. We shared opinions, materials, and learned both together and individually. It might seem like a lot, but I would like to share the details of our efforts with you.

1. Choosing the remote class platform

There were many platforms we could potentially use, but the question was which on to opt for. They each had their strengths and weaknesses, so it wasn't easy to decide. It would be a disaster if the school decided on a platform, made all the students participate, then had to change to another platform. I first thought about the characteristics of remote classes, then came up with a checklist of the elements I wanted in a remote class. Naturally, the platform that could accommodate most of these elements would be the best and most effective choice.

- Can most of the subjects be taught online?
- Does it offer two-way video calling, whereby the teacher and student can see and hear each other?
- Is it simple and easy to provide textbook and other learning materials to students?
- Can the teacher teach and support individual students?
- Can the students learn in groups and share online in real time?
- Can the students work on projects and give presentations online?
- Are various methods of evaluation available, including process evaluation?
- Is teacher-to-student and student-to-teacher feedback available in real time?
- Can the teacher check attendance, give announcements, and check if assignments have been submitted?

We decided on 'ZOOM' and 'Google Classroom' as the best platform for online classes, in accordance on the checklist above. The important thing wasn't necessarily which platform was chosen, however, but how to use it.

2. Preparations for two-way remote classes

The first problem to solve when planning remote classes was to establish a home environment in which students could participate in online learning. To this end, we investigated whether students were able to use the Internet and whether they had smart devices. We helped with internet setup and rented smart devices to households without any. The classrooms also required installation of digital equipment and an online class environment. The physical setup wasn't as difficult as we expected. Most houses already had high-speed internet and smart devices, as well as the classrooms. Korea wasn't a leader in IT for nothing. The teachers discussed and shared ideas with each other, and underwent training in order to become familiar with the platform. Based on this experience, we provided information on the use of the platforms to students and parents. Letters were sent to acquire the consent and cooperation of the parents. We made and sent video guides on creating accounts and how to install and use the app. We created group chats

on messenger services through which feedback could be provided and received. We distributed manuals for smart devices, textbooks, and preparation materials for classes.

In fact, the most difficult element of this process was the voicing of discontent and distrust on the part of students and their parents. Two-way online class was a new thing for them, and it wasn't unnatural for some to be unhappy with it. The biggest reason for this was probably because these were children, and it was most likely that the parents needed to intervene in their learning, at least in the beginning. The teachers did their best to provide proper information and gain their trust and cooperation, and as a result, when students were able to participate alone after some time, the parents were more than satisfied. Rest assured, the teacher's strong will is a quality of the utmost importance when it comes to the success of remote classes. It represents the power to solve countless problems that may occur while preparing for online classes.

3. Trial and error of remote classes

I was fully prepared for the (ZOOM, Google Classroom) two-way remote classes and gave enough guidance, and I expected things to go smoothly. I pictured the students swarming in the online classroom on the day of opening, getting along perfectly with the prepared curriculum. But reality is harsh, and my expectations fell short of being met. Most of the time was spent solving various problems of students rather than teaching. I prepared countermeasures for various problems that a 4th grader might face, but it wasn't enough to cover all the various unexpected problems that were encountered. I was so busy that I wished I had another set of eyes and hands. I even wished I could teleport, so I could pay a quick visit to the stu-

dents'rooms and fix their problems myself.

Well, not everything can be perfect to begin with, and we need to humbly accept these inevitable processes of trial and error. We had to share these problems with colleagues and work together to solve them. Failure is a valuable experience. It is the effort to overcome such failure that brings about development, so I recommend that one admits that errors are inevitable, and allows some time for things to settle. These errors are different for each student and each class, and cannot be generalized. People will always adapt, and times of trouble will come to pass. The problems will go away one by one, with the effort of teachers, and students will get used to online classes. After a transition period of 1 week, most of the problems were solved, and we were able proceed with the classes smoothly.

4. Managing remote classes: an example

ZOOM is a real-time two-way video teaching tool. Two-way remote classes using ZOOM allowed teachers and students to see and hear each other, enabling similar communication possibilities as offline classes. I could check if students were participating properly because I could see their faces, and had no problem speaking with them. Once students were able to control their voice input, I gave them more control by unmuting them and allowing them to share their screens. The two-way video classes were much improved by the various tools offered by ZOOM.

- You can use the 'speaker view'feature to enlarge the speaker's screen and listen to their opinions. The 'virtual background' feature can be used for reading activities and role playing.
- Use the 'share screen' feature to show students digital textbooks while teaching. The 'footnotes' feature can be used for concepts or to give feedback.
- Use the 'chat' feature for Q&A, or for giving quizzes. You can also provide a Google survey URL after classes.
- Use the 'breakout room' feature for group activities such as problem solving, decision making, and project learning tasks. The results of group discussions can be shared back in the main room and students can give presentations using 'share screen'.
- I used 'partial screen share' to show the stages of an experiment and have the students guess the next step. This helped students feel like they were carrying out the experiment in person.
- Music and P.E. classes were carried out by sharing videos or music with the students.



In addition to two-way video classes, "Google Classroom" was used to support activities such as writing, expressing, and solving content by students themselves. Google Classroom is an integrated learning management system (LMS) created by Google and distributed for free to educational institutions. It is a tool that allows teachers to present the teaching and learning process, post assignments, give individual and specific feedback, evaluate, and carry out comprehensive management. We allocated some time in which students could learn to adapt to the platform through simple examples or practice activities before beginning actual classes.

I used various Google tools (Google documents, spreadsheets, presentations, etc.), video media such as YouTube, and various programs that can be used in connection with Google accounts, such as Padlet. In addition, the collaboration and sharing features of Google's document tools were used to provide individual and group assignments and share feedback between teachers and students. It represented an advance from simple task execution remote classes, in which a student would simply submit a completed assignment and the teacher check it. Students could submit various assignments formats including images, video clips, question answers, documents, spreadsheets, presentations, and questionnaires. These various methods were used appropriately for each subject, and it became much easier to give specific and individual feedback. This allowed sufficient two-way communication and process-oriented evaluation in task execution-type classes.

Using Google Surveys minimized the use of actual paper worksheets, and students could complete work-





sheets on-screen. Quiz-form surveys were used to give individual feedback on worksheets that students submitted. A student would be redirected to another section for review if he/she got a question wrong.

Ⅲ. Conclusion – expanding opportunity into the future

When we talk about future education, remote classes are no longer optional. There may be another epidemic, or a storm could be a danger to the students, or there might be some other incident whereby the need for online classes reoccurs. I believe we need to be prepared, and search for ways to use remote classes for future education purposes.

The government should invest in creating a digital educational environment and enhancing the quality of public education platforms. The educational field should conduct more research on blended learning in order to link online and offline class resources so that they support each other. Conversion between the two during classes will enable wider teaching opportunities. The conventional method is to learn in school and do assignments at home, but a new method of flipped learning, in which students see supportive materials at home, and do various activities such as problem solving, decision making, cooperation-based tasks at school.
Above all, continuous training and promotion is needed to increase trust in public education in times of crisis. In schools, teachers and students should enhance their digital literacy in preparation for future education. I sincerely hope that the time of crisis brought on by COVID-19 will be turned into an opportunity to prepare for future education.

Ⅳ. A word for teachers in the U.S.

Remote education is not a method to cope with a temporary setback. It should be considered and utilized as an opportunity to move towards future education. If online classes become a simple tool of granting immunity to teachers, in that they have met their required duties, students will no longer be able to con-

centrate in their classes. Parents and students will no longer believe in public education. We need to be able to reconstruct the curriculum for online platforms, and research remote class teaching methods that encompass two-way communication. Academic goals need to be realized online, and we need to pay attention to the students' learning process in order to prevent learning gaps from emerging. We need to keep up the hard work. Again, the strong will of the teacher is the most important component of remote classes.

Blended learning for planning the future of classrooms

Wonju Taejang Elementary School | **Kim Seung-yeon**

Ⅰ. Introduction

Things are clearer when we stop moving. Offline classes turned out to be more important than we thought, and the advantages of remote classes came to light. From a lack of digital devices and online information to confusing educational administration, education inequality and alienation due to the information gap, overworked teachers, distrust, and communication among educational communities, changes in education such as the growing importance of blended learning, micro learning, and self-learning are on the rise. At the center of this is the call for diversification of various educational platforms and teaching methods for remote classes of the future.

Ⅱ. School delayed, online school begins

The unprecedented epidemic of COVID-19 has left the world in a state of great confusion in terms of education, economics, society, and culture. Korea has done well in its disease control, and became a role model for the globe. The severity of the virus that started in China last November came to light early this year. The Ministry of Education announced a school delay in February in order to prevent the spread of the virus. In April, school sessions began online. With the new change, Korean education experienced many difficulties such as online education platform (EBS Online Class, Cyber Learning System) servers breaking down. We are now developing remote class models based on Korean platforms.

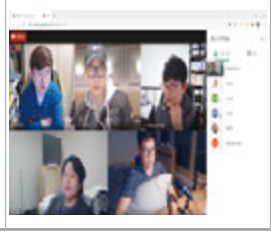
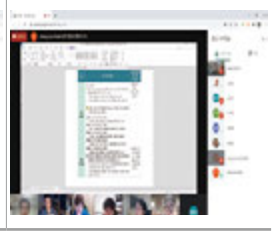
Cyber Learning System was the teachers' favorite platform. The reason was its ease of access and use. We also used various platforms from edutech companies such as Google, Zoom, Classting, Class123, and High Class, although the foreign platforms such as Google and Zoom were difficult for those not used to them.

Over 10,000 teachers' communities were behind the success of online classes following the pandemic. These communities pushed Cyber Learning System, EBS Online Class, and other edutech firms to provide support in response to inquiries.

We realized that digital literacy was very important for schools, societies, families, and individuals to get used to the future of society and education. Information education had not been emphasized in Korean

education, which was illustrated by the many students and parents who were not digitally competent. Many parents in Korea both have jobs, and digitally incompetent students needed the help of their parents. The government launched a remote class support program for upper grades and school day care for lower grades in order to address the learning gap.

First, to instruct students at home and establish communication with parents, we used Classting and Class123 to distribute school letters and assignments. We used Google Meet and Zoom to establish a two-way communication channel, and managed the students accordingly. This helped us identify problems and conduct supplemental classes.

Classting	Class123	Google Meet	Zoom
			

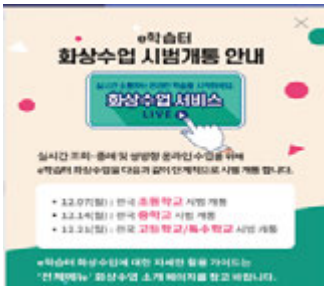
After the Ministry of Education decided on the use of remote classes, our school formed a council for decision making and decided to overcome this crisis using a platform familiar to the education community, teachers, parents, and students alike. We carefully planned various aspects such as attendance, analysis, and curriculum execution, making learning content, evaluation, and student management based on Cyber Learning System. The biggest problem was with the lack of digital literacy. Many veteran teachers only had experience with offline classes and were incompetent in terms of digital literacy, and had problems teaching or interacting with students and parents. To compensate for these inadequacies, we established an assistant teacher system on Cyber Learning System and managed the students by grades. Two teachers would play the roles of the main teacher and assistant teacher of each class and support each other in those roles.

〈Table 1〉 Assigning main and assistant teachers for each class on Cyber Learning System

Position	Class 1	Class 2	Class 3	Class 4
Main	HR teacher	HR teacher	HR teacher	HR teacher
Assistant	HR teacher for Class 2	HR teacher for Class 3	HR teacher for Class 4	HR teacher for Class 1
	Vice Principal, Teaching Director	Vice Principal, Teaching Director	Vice Principal, Research Teacher	Vice Principal, Research Teacher

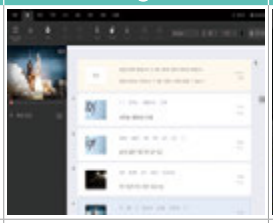
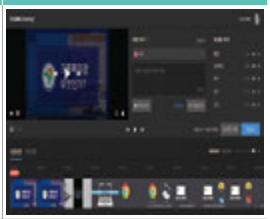
In time, we got used to online classes. The teachers and research groups began making their own materials and videos rather than using those provided by Cyber Learning System. The features of Cyber Learning System continued to be updated and improved, and online classes stimulated cooperation among teachers.

〈Table 2〉 Improvements in Cyber Learning System features

Screen	Features and Improvements
	• Co-management of main and assistant teachers • Completion, progress, and grade checking • Designated learning periods • Designated classes and semesters • Learning progress and attendance checking
	• Date-based opening lectures • Progress checking • Designated lecture dates and times
	• Two-way video classes • Ability to see each other's faces during class, HR time, and at the end of the day, facilitating with school counseling.
	• Ability to post announcements and provide notice of COVID-19-related emergency announcements • Preparation assistance with weekly learning guide. Maintenance of communication channels with households. • Increased capacity to give assignments and monitor progress.

Cyber Learning System offers features that facilitates the process of making materials for micro learning. Teachers could use the following features to create various learning materials and were able to upload files under 300MB.

〈Table 3〉 Making materials for micro learning

Images	Video recording and editing	Subtitles generation using AI	Voice generation using AI
			
• Using screenshot tools (Alclapture) to copy and edit images. • Using Miricanvas to make simple images.	• Using Ocam to record the computer screen and edit. • Using Vapmix to produce video with clips and images.	• Using VREW to edit and generate subtitles. • Applying subtitles to help catch details that may be missed.	• Generating various voices with AI. • Useful for teachers who have difficulties recording their own voices.

The Ministry of Education conducted a survey of 20,000 teachers regarding the content they used for remote classes. 32% of the content used was from Cyber Learning System or EBS, 10% consisted of digital textbook material, and 33% was material that the teachers had produced themselves. We can see that many teachers went to the lengths of reconstituting the curriculum and making class materials themselves, which resulted in improvement of their teaching abilities.

They not only developed their ability to produce content, but also improved communication with students and parents, and this resulted in heightened confidence in remote education.

Blended learning is the mixture of offline and online classes. It is a rising new method for counteracting epidemic-induced social distancing measures. Teachers invested a great deal of thought in planning the curriculum to include offline and online classes, and came up with class methods that employed both Cyber Learning System and offline classes.

〈Table 4〉 6th Grade Science 'Unit 4: The Human Body and its Functions' Reconstituted curriculum (example)

Period	1st	2~4th, 6th	5th, 7~8th	9~11th
Class Content	• Making a model of the human body • Introduction • Guide to remote classes	• Digestive, respiratory, excretory organs. Video learning. • Two-way class	• [Experiment] Circulatory and nervous systems, sensory organs, changes in the body after exercise.	• Heath exhibition, unit summary, quiz • Two-way class
Method	Offline class	Online Cyber Learning System	Offline class	Online Cyber Learning System

Planning the curriculum with a joint offline and online schedule as outlined in the table above serves to minimize blanks in the curriculum.

Ⅲ. Policy suggestions

Education is proceeding along an unfamiliar path due the COVID-19 epidemic. If the situation is handled wisely, people will have more trust in the future of education.

First, in order to resolve education inequality, we need to identify the problems in the field, and listen to complaints through a channel of communication within educational bodies. It is important to provide public platforms such as Cyber Learning System and EBS Online Class to close the digital gap.

Children learn best when they learn through methods that suit them. We need to design a curriculum that will have the children set goals in remote classes and help them to achieve those goals.

We also need to provide teachers with opportunities to improve their capabilities to expand their imagination with blended learning and micro learning.

Ⅳ. A word for teachers in the U.S.

Online classes began despite the existence of many problems and concerns. With just a week of preparation, no wi-fi, and no proper equipment, we only had our laptops and phones with which to prepare for the online classes. Despite these difficulties, we accomplished something that had never previously been achieved.

The crisis has turned into an opportunity, and the collective intelligence of teachers is at work. Society demands a new future for education due to the pandemic. When the pandemic passes, the capacity to hold remote classes will be much more advanced than it is currently. The crisis will be the basis for educational change that incorporates blended learning and micro learning, and with this kind of positive attitude, I believe we can overcome any difficulties in the future.

Growing together with online classes

Daenam Elementary School | **Jeon Ga-hyeon**

Ⅰ. Introduction

COVID-19 has brought about a certain fear of others, with its elements of 'social distancing' and 'quarantine.' The biggest change in the educational field has been daily online classes, and several problems have been experienced including education inequality, an intensifying learning gap among students, and students being left at home. Things that seemed to be unchanging in schools and classrooms duly changed and new elements were introduced, but we are striving to adapt and have found a way forward, as we always have. There have been many unexpected difficulties, but we are growing with each obstacle that is overcome.

Ⅱ. School delayed, online school begins

Step 1: The wait

In February, I prepared for the start of school in March, planning the curriculum and cleaning the classroom. When I heard that school was delayed for 1 week, I thought that would be it, and I would be able see the students after that. 2 weeks passed by, and after school was delayed for a month, I began to worry, but I believed that the epidemic would soon be over and we would all be able to return to our normal lives.

Empty classroom

Step 2: Preparing for 'online school'

March was supposed to be the busiest month, but it was like the month just disappeared from the calendar. School could not be delayed any longer, and online classes were set to start. None of us had experienced anything like this, and we did not know what to do for the opening ceremony, how to reorganize the curriculum, or what to teach to the students. We asked around and gained some ideas. The first thing to be done was to find out how the households were equipped for online classes. They needed devices, proper Internet connections, and someone (parents, siblings) at home to help with learning, etc. Things that hadn't been important before became essential elements of online classes.

[Report on students' online learning environment]

Student	1	2	3	4	5	6	7	8	9
Carer	Mother	Mother	Sister	Mother	Father	Mother	Grandmother	Mother	Mother
Device (Parent/student)	o / x	o/o	o / o	o / x	o/o	o/o	o/o	o/o	o/x
Type	Phone	Phone	Phone	Tablet	Phone	Tablet	Phone	Phone	Phone
Wifi	o	o	o	o	o	o	x	o	o
Learning		Illiterate			Illiterate				

The second thing we had to do was to decide on the online class platform. We tried using various platforms such as Cyber Learning System, Widurang, EBS Online Class, and ultimately decided to use Cyber Learning System. The elementary school students needed their parents' assistance, and to minimize confusion, we decided to use the same platform for all 6 grades.

Using SNS to provide information and check learning progress

The third thing we did was to establish a channel of communication with students and parents. We used Naver Band to give information on online classes, check attendance, and confirm learning progress. We received the consent of parents in advance since it was necessary for creating website user accounts.

Fourth, we provided instructions on how to use the platform. We captured images or recorded videos to provide detailed instructions for each step. The teachers created accounts for students, since many found that difficult. If a student or parent had connection difficulties, we helped them by phone or had them visit the school to learn what to do.

Step 3: Stagnation

For the first period, we had the students take a look at the learning materials that were uploaded on Cyber Learning System according to the timetable. There was not much studying to do for 2nd graders in the first period, and the textbooks consisted mainly of activities. It was not easy conducting the full 40 minutes of class using just the textbook alone. To address this problem, we created learning bundles incorporating various materials and worksheets. It was extremely difficult finding the right materials for the classes, and there were copyright issues that prevented us from uploading some materials on Cyber Learning System. Some teachers recorded class videos and uploaded them, but there was insufficient time in which to record and edit videos for each and every class period.

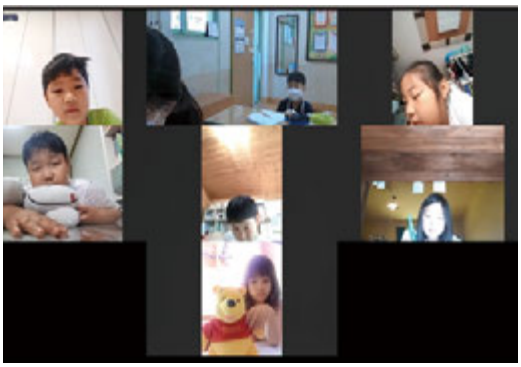
[Student Schedule]		[Teacher Schedule]
Check attendance on Naver Band	09:00	Check attendance and health status
Take classes on Cyber Learning System	09:10~12:00	Prepare for class
Take photographs of the textbook and worksheet then upload them to Naver Band	16:00	Check learning progress

'Am I doing this right?', 'Are the students understanding what I'm teaching?' As the classes continued, students began to participate less and I was skeptical about uploading materials on Cyber Learning System. I checked the learning progress and found that some students had a 100% completion rate, but their learning duration was less than a minute. This meant that these students just skipped through the pages without even looking at them. I felt like I was talking to a wall. It took so much time to find the right materials, but it was not efficient enough–not even close.

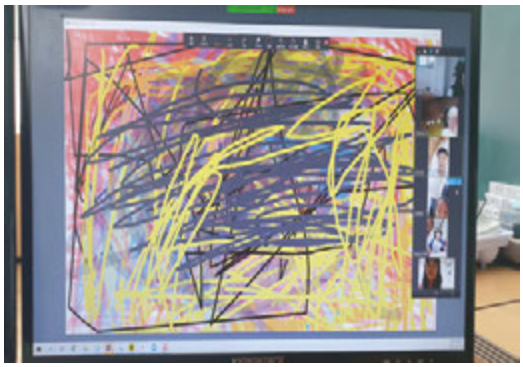
Step 4: New challenge – 'two–way classes'

I started holding classes on video chat in order to communicate with students and raise the learning efficiency. I used Zoom because the students could access it simply via a URL alone. At first I taught them about the basic features and had them access Zoom at 9am sharp to get used to the routine. The first period (40 minutes) was filled with creative activities such as a show–and–tell of favorite toys, drawing with the whiteboard feature, completing a drawing quiz–activities intended primarily to get the students interested in two–way classes. I also provided information on the day's learning schedule in order to improve student participation.

Once the students became familiar with it, I began expanding the video classes and the learning itinerary.



Show–and–tell of favorite toys

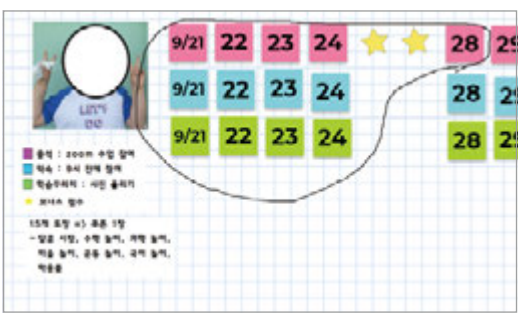


Drawing on the whiteboard

Since lower grade students could not concentrate for a long time, and since they were mostly using small screens on their phones, I gave them plenty of recess time and assigned individual activities after each period. The children who were alone were able to see their friends and communicate during the video chat classes.

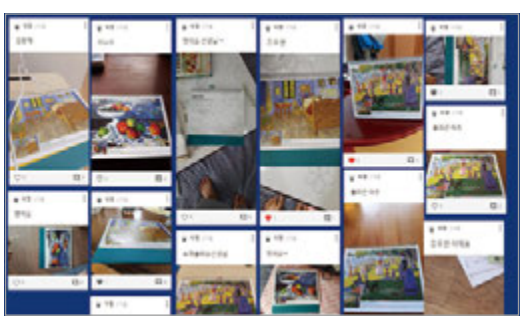
Step 5: 'Blended learning' upgrade

As students were able to attend school offline 1~2 days a week, we were able to implement a greater variety of learning activities. Students in the lower grades needed help from parents or individual support when using new online learning tools. I taught the students about the use of new tools when they were in school in person, thus allowing the application of more varied resources. We were then able to use Padlet, Jamboard, and various other online tools in live video classes to provide a more fun experience. Jamboard offers a greater number of images and shapes than Zoom, and these were used for purposes such as a star points system, true or false quizzes, and show-and-tell presentations. The Padlets were great for collecting materials, and they were used for photo exhibitions or to give presentations on the various countries that students researched.

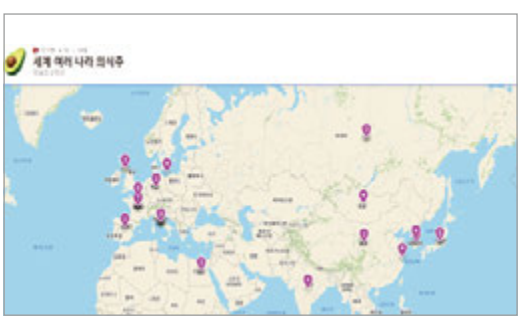


Jamboard) Star points system

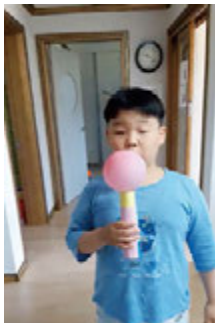
Jamboard) Show-and-tell



Padlet) Exhibition



Padlet) Sharing collected materials

General		Math	
Online	Offline	Online	Offline
			
Studying the weather in Spring, making tools for broadcasting	Role playing-weather forecast	(Jamboard) Learning about sorting standards	Sorting snacks and giving presentations

For proper blended learning combining the advantages of online and offline classes, we had to reconstitute the curriculum and not just use the original textbooks. We held classes on concepts and theories online and used cooperative activities offline. The problem of evaluation was addressed by reconstituting the curriculum to evaluate the activity process, thus expanding restraints of time and space.

Ⅲ. Conclusion and suggestions

Communication was the most important and helpful component when starting the online classes. I was able to grow further in confidence by communicating with other teachers and taking various training sessions. Also, by communicating with students, we were able to make classes that fit the needs of our students appropriately. For more effective online learning, we require a varied range of training sessions and channels to facilitate communication between teachers. These will develop teachers'capabilities and their ability to understand class situations and reorganize the curricula as necessary.

On the other hand, things that I expected to be difficult to achieve, such as the installation of wireless Internet in schools, supply of one device per student, and LMS activation, were completed in a short period of time. Classes utilizing online environments, such as those incorporating blended learning and flip learning, are now much more familiar. We hope that even after the end of the pandemic, the use of online learning content and activities will continue.

Can teachers give feedback online?

Gochon Elementary School | **Shin Yoon-Cheol**

Ⅰ. Introduction

In preparation for the delayed opening of school in April due to the COVID-19 pandemic, the curriculum was rearranged and efforts were made to minimize learning deficits through online homeschooling. Various efforts were invested in building an online educational website for Gochon Elementary School using website tools, communicating with parents using Naver Band and Classting, and receiving assignments through Google Classroom. To this end, several training sessions were provided for teachers to improve their ability to use edutech facilities, and several manuals were made and distributed to help students to get acquainted with online platforms. Through this process, we created a stable online learning system. Even in the midst of confusion, we promoted substantial classroom management and helped students learn online. Nonetheless, at Gochon Elementary School, there was another concern

The problem was with a local joint class for the gifted. Our school runs the "Gochon Elementary School Community Class for Gifted" aimed at nurturing elite local talent for students in Gimpo. The candidates for gifted education had already been selected in 2019, and as usual, they were given a curriculum that was set to start in April and end in November. However, it was unclear whether classes could open this year due to the pandemic.

Offline classes were not possible due to the virus, the opening of classes for the gifted was delayed, and eventually the Education Support Office recommended that institutions refrain from offline classes in July. It was not surprising that many other classes for the gifted in Gimpo were thinking of canceling their programs this year. The class for the gifted is an extra curriculum, and we could not start classes without

Gochon Elementary School remote education website

Example of 2nd grade remote education website

even the public schools operating properly. However, the local community class for the gifted at Gochon Elementary School made a bold move: a 100% online class plan.

Ⅱ. 100% online classes for the gifted program?

There were so many things to consider in order to make 100% online classes happen. It was crucial to revise the school rules for the gifted and talented classes so that the curriculum could be operated even with online classes. Since the existing curriculum was developed for offline teaching, we had to create a new curriculum that could be taught online. Since no one had ever taken the class for the gifted online, we had to start from scratch.

Coming to agreement in the educational community was a struggle. In principle, the class for the gifted forms part of after-school activities that are paid for by the beneficiaries. For this reason, we asked students and parents to understand that this year it would be conducted online due to unavoidable circumstances, and announced that students who did not wish to take it online needed to cancel their enrollment. Still, 70% of students enrolled in the online classes. Next, it was the job of the teachers to present a high quality curriculum to increase the satisfaction of students and parents. Accordingly, it was necessary for teachers to create a new curriculum and persuade students to adapt to new edutech and proceed online. Fortunately, the principal also provided prospective support for non-contact operation, teachers thought it was great, and parents and students understood and were able to undertake these new challenges. Many meetings and drafts followed, and after numerous discussions and exchanges of opinions, the community-based class for the gifted at Gochon Elementary School decided to use Google Classroom to deliver lectures.

The first thing I did was to start with Google Classroom and guide students in how to use it. Fortunately, the Gyeonggi Provincial Office of Education has a commercial cloud service educational support system, so it was easy to create school accounts for students and teachers using a Google Workspace (formerly Google G-Suite) school administrator account. In addition to providing these accounts for students, a video on how to use Google Classroom was provided through the established Gochon Elementary School remote learning website.

Gyeonggi-do Office of Education commercial cloud service support system

Guidance on how to use Google Classroom on the remote learning website

All preparations were completed, such as reporting changes in the operation plan to the Office of Education, familiarizing oneself with how to use it, and uploading educational materials in advance to Google Classroom. On July 22, an online opening ceremony was held using Google Classroom in conjunction with Google Meet. However, not even our best preparations could prevent the numerous problems that occurred. Several unexpected events occurred even during the opening ceremony.

Since students were not using their own personal computers, but computers they shared at home, even after logging in with their school account, they kept switching to their personal accounts. This often happens when you use multiple accounts. However, students and parents who were not used to this technical issue were very confused by it. Also, since a large number of students accessed the resource at the same time, the video was interrupted continuously, perhaps because of insufficient bandwidth on the part of the school. Fortunately, teachers who were preparing to teach the gifted education course made phone calls to students to provide guidance and sent uploaded copies of the video to students who were having problems. For students who missed any important messages, we uploaded recordings of the opening ceremony in Google Classroom using the recording function in Google Meet. As such, the opening ceremony concluded well as a result of improvisation.

Opening ceremony held in Google Classroom

Opening ceremony shared using Google website tools

Classes using Google Classroom required more preparation. I spent time online looking for important videos that the students needed to watch and shared them through the “Material” function. I also created an activity sheet for students to solve in class and distributed them through the “Task” function. Students were encouraged to check attendance themselves through the ‘Question’ function and to review what they had learned by taking a ‘Quiz Assignment.’ All of this had to be done in advance during class prepa-rations.

Normally, things would work out fine with this much preparation. However, in the case of online classes, there were several more steps to complete. I uploaded a link to Google Meet in Google Classroom so that the students could easily access Google Meet when they entered Google Classroom. Also, I recorded the class using the recording function in Google Meet. This recorded video was then provided as data in Google Classroom so that students could listen to the teacher’s explanation again while working on their assignments.

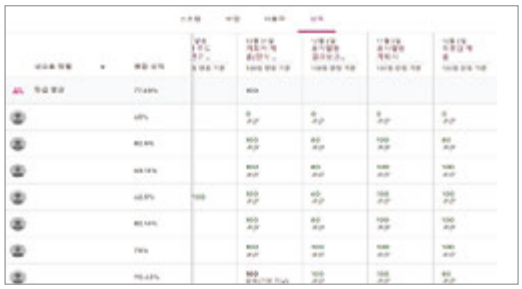
Giving video materials and assignments through the task function

Recording the class and uploading it with the recording function.

Exchanging opinions through the question function

Checking attendance through the question function

Improving assignments through feedback



Checking grades

The class for the gifted includes some special programs including a self-directed research activity. It is a class in which students usually select their own research topics, conduct research, and present their results. Feedback from the teacher is very important in this process. However, it was difficult to give such feedback online. We were able to easily find a solution through Google Classroom, however, using a feature that allows users to leave private comments on student assignments. We communicated with students in real time via this feature. In addition, all of the evaluation/feedback results remained in the Google Classroom grade function. It was easy to know if the students had completed their assignments or not. In particular, the burden on the teacher was reduced significantly because in the grade function, attendance and absences were checked automatically.

COVID-19 is still ongoing. In order to overcome such a difficult situation this year, our school has devised various methods and is continuing to meet with students. Also, as a part of this process, faculty, parents, students, and all educational communities have voluntarily participated and endeavored to tackle this problem step by step.

We hope that the COVID-19 epidemic will soon end and we will be able to meet students in-person next Spring.

Ⅲ. Policy suggestions

Our school is conducting remote classes effectively in a rapidly changing situation with excellent financial resources and support. However, at the same time, we are well aware that this isn't the situation for all schools. The platforms used for online classes can continue to be used for blended learning purposes in the future.

If we inform teachers about these platforms and continue training them during vacation time, they will be

able to pass on their competency to the children and thus help to cultivate capable students who are familiar with digital technology.

Ⅳ. A word for teachers in the U.S.

There is a saying, "You can't be full with the first bite." Everything is difficult at first. We experienced a number of controversies and much suffering in the process of adapting to this situation. However, such a process became an opportunity for Korean teachers to evolve one step further. Teachers who, just a year ago, thought that making videos was the sole job of online creators are now making class videos for students themselves.

All we do is for our students. Everyone hates hardship. However, we think it is important to endure the pain in order to progress on our own so that students can learn a little better.

Remote classes that take advantage of the online format

Gimpo Shingpung Elementary School | **Cho Myung-woo**

Ⅰ. Introduction

The social change brought about by Corona 19 had a big impact on schools as well. There wasn't much time for preparation before the teachers and students had to start remote classes. I felt a great burden by having to prepare a new form of class that I had never done before. I was worried about whether the students could actively participate in the class and whether there would be any learning loss due to the new environment. I began to think about how to maintain the same learning effectiveness of remote classes as offline classes, and also to come up with a more effective way of holding classes.

First, we had to decide on the platform for remote classes. There were various possible platforms such as Cyber Learning System, Google Classroom, and Widurang, but we hadn't previously used them in actual classes, and couldn't decide on which would be the most effective for our students. After discussions between teachers in the same grade, we decided to use Google Classroom as a remote learning tool for 6th graders.

In Google Classroom we can use Google's own program tools (Google Docs, Google Spreadsheets, Google Slides, etc.) that don't require installation, and this was a great advantage since the students did not have to purchase any office programs in order to complete their assignments. In addition, when students submitted their assignments, the teacher could revise the work they submitted and give feedback to the students through private comments. I could also use the Google survey function to view the grades for each period, and that made it easy to track the students' academic achievements.

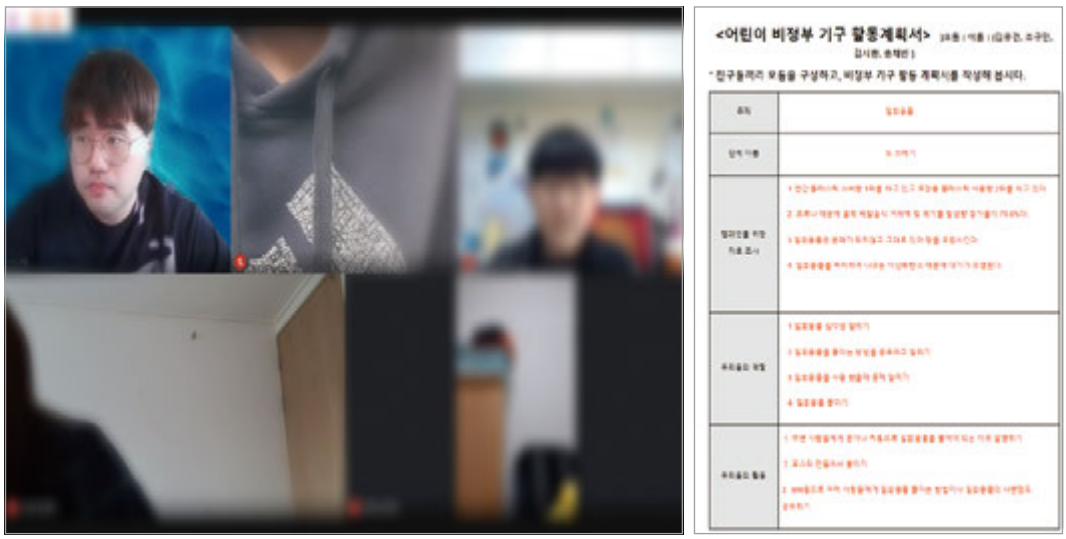
Checking the assignments and giving feedback was especially effective in the more knowledge-based subjects, even more so than with offline classes. I did not have much time to spare for each individual student during offline classes, but this method gave me much more time to provide more detailed instructions for particular students.

Google Classroom – Giving feedback on an assignment involving making an argument

As teachers and students became used to the classes using Google Classroom, we did encounter some problems. Since it was up to the students to watch the videos or solve the worksheets I uploaded, some would just copy the answers in the materials provided and submit those. This made it difficult to monitor the exact academic achievements of students. This was the same with recorded classes, and more students began to submit assignments without even watching the class video clips.

Another problem was that there was not enough interaction between the teacher and the student. I was providing feedback through private comments in Google Classroom, but the time gap between caused some students not to apply the details of that feedback. They did not submit the completed assignments according to the timetable as they did in offline classes, and teachers were unable to give feedback quickly. This was not the intention when we decided to use Google Classroom, but the lack of interaction between teachers and students turned out to be a problem.

To make up for these aspects, we decided to run two-way classes. Live two-way classes were carried out on Google Meet, in connection with Google Classroom. Live two-way classes allow teachers and students to communicate in real-time, just like with offline classes. It was possible to hold realistic live classes by having students give presentations or take pop quizzes. Unlike learning on their own by watching videos or class materials alone, the students could concentrate better with a teacher directing the class. In addition, group activities that were difficult to use with Google Classroom classes (such as task presentation-oriented classes) became possible.



Social studies class – Making an NGO (Group project)

The picture above is the outline of the 'Making an NGO to Resolve Global conflicts' class. To make an NGO, the students needed to do a lot of research as to what kind of global conflicts there are and how to solve them. If it had been conducted as an offline class, the students would have prepared the materials in advance, but the two-way class allowed students to find the material directly on their devices during class time. In addition, students were able to share their opinions freely through video chat and write the discussion content together in Google documents. In the case of an offline group activity, almost every time one student would take the role of writer, but when a group activity was conducted with Google Meet and Google Documents, all group members participated and completed the activity report together. Also, it was possible to provide immediate help if required while the teacher watched the students in their Google Meet groups. As such, it was possible to teach classes that were intended to maximize the advantages of using online spaces while obtaining educational effects similar to those achieved in offline classes.

While conducting classes with Google Meet and Google Classroom, I wondered how remote classes could be more effective than offline classes. In an offline class, there is normally one student presenting while the rest of the students listen to that presentation. Likewise, only one student can present through screen sharing in an online session. Also, group activities using Google Classroom facilitated cooperative work, but it was difficult to share group results with other groups. Teachers could check all of the student's assignments, but students couldn't view their friends' assignments, so it was difficult to share results among students and mutual evaluation between students wasn't possible.

To address this shortcoming, Padlet was also introduced, which enabled students to share and evaluate their assignments with other students. Padlet not only collects students' thoughts and assignments, but also provides an avenue for students to give each other feedback through comments and likes.

Korean language and social studies class using Padlet–making effective presentation materials, solving global conflicts

Students subsequently submitted their assignments via Padlet instead of Google Classroom. They could also see and comment on their friends' work in addition to receiving feedback from the teacher. In the picture above, it can be seen how students shared videos on the subject of global conflicts and solutions. Also, after watching the videos of other students, they commented on whether the subject of the video and materials used were appropriate. Unlike offline classes, students could upload videos to give much longer presentations, and because all their classmates could see it, the students worked hard on their videos. The advantages of online classes are there are fewer limitations, that it is possible to use various media, and that it is possible to communicate with multiple people at once. These advantages were max–imized by using Google Classroom, Google Meet, and Padlet.

Debate class using Padlet

The educational environment has suddenly changed due to the COVID-19 epidemic. Remote classes, thought to be something for the future, became a contemporary reality, and the students' learning space expanded from the school to the home. It is natural that platforms and tools for remote classes will develop further in the future. However teachers can't wait for that progress to occur. This is because we need to teach students right now. Many teachers are conducting remote classes using various platforms such as Widurang and Cyber Learning System. We chose Google Classroom, Google Meet, and Padlet to conduct remote classes. Our way of doing things might not actually be optimal, but I think that through trial and error, the shortcomings of remote classes have been overcome and the strengths have been maximized. I hope that our experience will benefit other teachers preparing to teach remote classes.

Cooperative work in online classes

Masong Jungang Elementary School | **Lim Jiwon**

Ⅰ. Introduction

"We will find a way. We always have." This line from the movie Interstellar has a deeper ring to it in the year 2020. With the COVID-19 pandemic that has spread across the whole world, our daily lives have changed in all areas, including politics, economics, society, and education. Everything we took for granted turned out not to be, and there has been total chaos in schools.

Schools without students. It was unimaginable before the pandemic, yet teachers had to struggle to achieve their educational goals in empty classrooms. Many classes that had been held face-to-face in the classroom were replaced by classes taught while facing a computer. The school, which was always loud and noisy, was now filled with the silence of students wearing masks.

Ⅱ. School delayed, online school begins

I was excited about preparing for the new semester in February, but the spread of the virus was accelerating. One's health and life is the most important thing. Eventually, the start of school scheduled for March 2 was postponed for one week to March 9. There would be much confusion with the first delay of school, but it seemed necessary to ensure the safety of students. However, the virus spread faster and school was delayed for 2 additional weeks. After a month, both students and teachers were exhausted from the seemingly endless waiting. The number of school days and hours was reduced, but we could not wait any longer for the start of offline schooling.

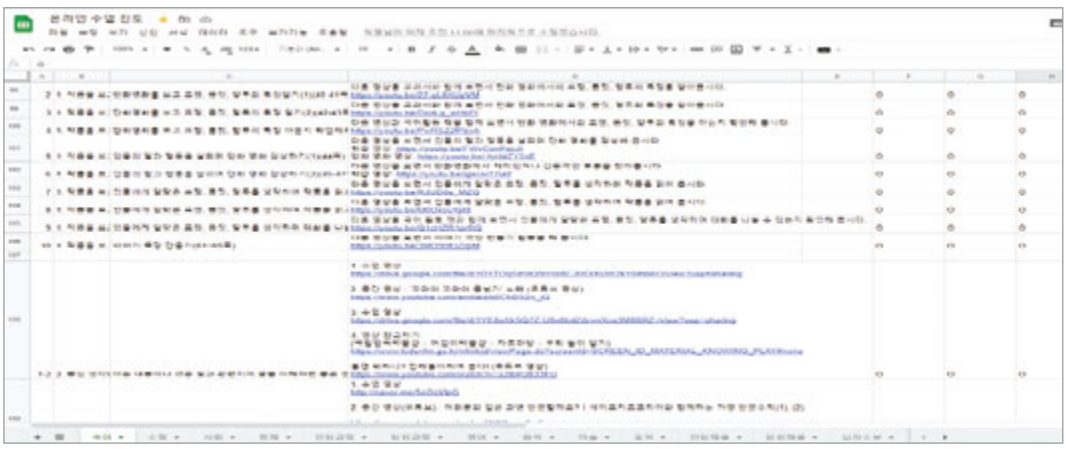
The school session thus started online, something that no one had experienced before. The online classes were divided broadly into three types: two-way classes, content classes, and assignment classes. After these three types of online teaching methods were introduced, many observers raised concerns that two-way classes would not be easy for elementary students. It was almost impossible for children to access the online class platform and participate in class on-time by themselves at home. For that reason, two-way classes were mainly conducted in middle and high schools, and content application classes were conducted in elementary schools. Various platforms were proposed for online classes. For my class, we used a platform called Widurang to provide assignments and the content necessary for each class. At the beginning of the online classes, I searched for a variety of pre-existing content and taught that which was most relevant, and the students checked their attendance and submitted questions via comments.

Content class

Assignment class

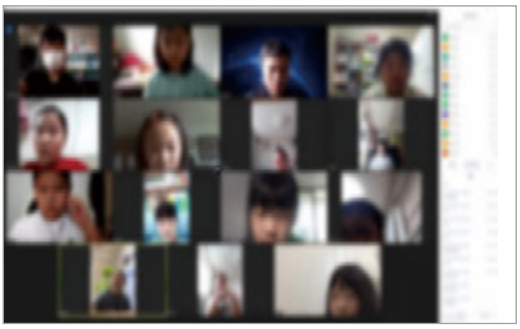
However, the pandemic did not get better. It was obvious that all classes in 2020 would be conducted online. As the online classes continued, I began to question the simple process of giving assignments or providing content. Finding good materials to give to the class was important, of course, but I believed that a teacher should make content personally. Consequently, I discussed details with my colleagues of the same grade and we decided to make new content for a subject each, and share it with each other. We believed that this would make the online classes more meaningful than the previous method. Through the cooperative process of creating and sharing content for each subject using Google Drive, we were able to make progress and develop our online teaching method.

As such, both teachers and students were adjusting to online classes, but there were always some associated regrets. The biggest disappointment was that we were unable to see each other's faces during class. I heard that many middle and high schools, and even some elementary schools, were already using two-way class platforms such as Zoom and Google Meet. There was also a discussion about the potential use of two-way classes in our school, and the teachers said that it would be possible for the upper grades. Many insisted that it was worth attempting, even if it was not possible to institute proper online classes immediately. We decided to start with two-way online homeroom sessions. I created and sent a guide for students on how to use the platform for two-way lessons. I was so glad to see my students' faces again finally through the monitor.

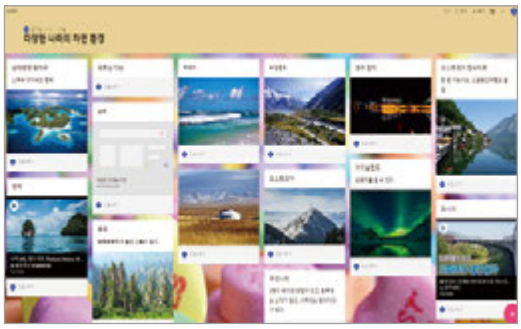


Sharing content for each subject using Google Drive

Is it impossible for elementary school students to participate in two-way online classes? Absolutely not. There were a few students who had difficulty accessing the platform, but only for the first few days. Once they got used to it, the students participated well in the two-way classes, so my worries proved unfounded. The class also changed from a process of simply reading textbooks to presenting varied content with the screen sharing function and listening to each other's opinions. There were more frequent interactions than there had been previously. I then wished to use group activities in the two-way classes. I thought it would not be very difficult if we used the functions provided by Zoom as well as the various Google Drive-related tools. First, we started by dividing the group. When a group activity was presented, students would exchange opinions in a meeting room consisting of the members of each group, and they would work together to create materials using Google Drive, Padlet, and Jamboard. Subsequently, students would return to the main classroom and give presentations.



First day of two-way platform use



Presenting the natural environments of various countries using Padlet

Presenting the topography and climate of different countries using Google Presentations

Imagining book characters and expressing them on Jamboard

Group activities are particularly good for social study classes. Elementary school students may experience difficulties doing social studies on their own, and social classes are good for engaging in cooperative activities. Padlet has the advantage of being able to organize various items of content in one place, and the teacher can comment on those items individually. However, there is a limited number of Padlets that can be made using the free version of Padlet. It is also easy to produce presentation materials with Google Presentations, and it is free, but other students can edit the written content, and that could cause some problems. Jamboard can also be used for free and has the advantage of being able to present opinions in a variety of ways, such as through drawings, shapes, images, and sticky notes. However, this also suffers from the shortcoming that other people can delete the written content, and Korean language is not supported in the mobile application. If one identifies the pros and cons of each tool in advance and selects the one that best suits the class, however, it is possible to maximize the strengths of student cooperation in online classes.

Ⅲ. Policy suggestions

The COVID-19 pandemic has given the education world the task of teaching online classes over the long term. The process of delivering educational content online is not easy, and there should be many policies to support that endeavor. When first using a platform for online classes, most of the teachers and students suffered from connection failures. It would have been great if we were prepared for such large numbers of students accessing the few platforms at the same time. Of course, it would cost a lot, but it is necessary to ensure the stability of education. Throughout this year, we experienced many trials and errors, and now we are finally used to the online classes. We do not yet know if the pandemic will end in 2021, and many policies need to be established to support the ongoing online classes and to avoid repeating the errors experienced this year.

We also need to share good examples of online classes and details of improvements made this year, and prepare for better online classes next year.

Ⅳ. A word for teachers in the U.S.

I believe every teacher anywhere loves their students. I assume that teachers in the U.S. are already conducting online classes in a similar way. I believe that teachers need to maintain a positive attitude, of "We will find a way. We always have." We found a way this year during this painful process, and we have grown as teachers. I hope we can continue to overcome this hardship together. I believe that, although we are on the other side of the world, we can interact with each other online, just as in the online classes. I look forward to the day we can share the things we learned through online classes.

A New Path: Online Class

Shingok Elementary School | **Kim Jun-Young**

Ⅰ. Introduction

COVID-19, which has spread worldwide and continues to this day, has greatly influenced the sites of education. With this unprecedented pandemic, change has become an inevitable reality in the educational field. The epidemic is getting worse, and students are still unable to attend school. Even in such abnormal situations, Korean teachers are constantly doing their best to communicate with students in various ways to prevent them from losing their basic academic skills. Moreover, they are overcoming this crisis by trying out new teaching methods and tools. The outbreak has brought about many changes in the educational field, and the subjects of education are looking towards its future. In this report, I would like to introduce the evolution of Korean teaching strategies that developed as a response to the pandemic, and provide some example cases from my classes.

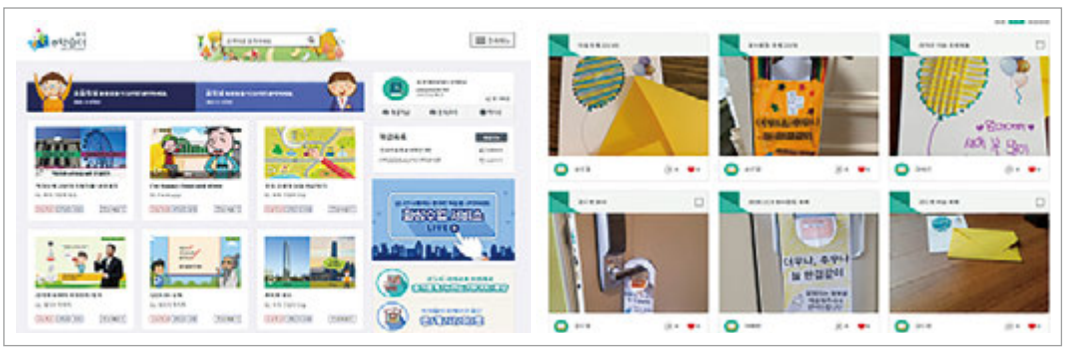
Ⅱ. School delayed, online school begins

Due to COVID-19, many schools in Korea and other countries have closed to prevent the spread of the virus, and students have been unable to attend school. I am sure that in the beginning, no one would have thought that a situation like this would last very long. In the case of Korean elementary schools, school generally starts on March 2, but after several delays, the first online school sessions began on April 16.

In fact, at the time when the Ministry of Education announced the new academic calendar, there was no way that I could even have imagined that it would consist of remote learning. In my 10 years of educational experience, I had never experienced online classes, in which there were no students in the classrooms at all. Many questions came to mind. How would I evaluate their academic progress? How would I carry out the various forms of classes (individual, pair, group, whole class) online? An empty classroom? Non-contact teaching? Not only I, but also students, parents, and teachers were all confused by the unfamiliar notion of online schooling. There was a lot of confusion as to where and how to prepare and start. Of course, there is a great deal of educational content available in Korea, based on its excellent IT infrastructure, but finding and applying online content suitable for each school and class situation would not have been easy for anyone.

From this point on, many teachers began to brainstorm about online classes and came up with various

ideas regarding online teaching methods. The beginning of online classes took the form of content provision using EBS educational broadcasting and Cyber Learning System. Students had to learn subject content via TV and YouTube, or by accessing the Cyber Learning System and watching videos posted by the teacher. In addition, school teachers gave assignments through various types of communication platforms such as e-learning message boards, Classting, High Class, KakaoTalk, and Naver Band. When students submit assignments, they are generally given feedback and comments from the teacher. This was how online classes looked in the beginning. It started to take proper shape through the procedure of content + assignments + feedback.



Online Class Using Cyber Learning System

For the online classes mentioned above, many teachers all over the country invested a lot of time and effort in creating content and sharing it with each other. High quality learning content was created at the hands of teacher using PCs, various programs, and smartphones. I also produced several videos for students, which was not easy to do since I was unfamiliar with such things. Students had to access the Cyber Learning System in order to check the content created by teachers, and continued learning by means of activities such as checking attendance, watching videos, submitting assignments online, and asking questions to teachers.

As this form of online learning was gradually settling into place, a problem arose. Although communication with students had been constantly active via comments or messenger functions, I thought that it would be better to communicate more directly with students. I wished to give and receive instant feedback such as questions and opinions in real time during online classes. This was also the inclination of students and parents who were helping students learn at home. In reflection of these demands, online classes in the form of content utilization and task execution gradually evolved towards the concept of live two-way online classes. I felt that through the use of live two-way activities, I would be able to prevent

learning loss and other shortcomings caused by non-contact learning, since I would be able to carry out activities including holding and managing classes and counseling while enabling face-to-face communication with students online.

For the live two-way classes, it was first necessary to have a variety of equipment such as dual monitors, microphones, webcams, and tablets that could display class materials on the screen. These were purchased using the school budget and given to teachers. Video conference platforms that can use these devices for conducting real-time interactive classes include Zoom, Google Meet, and Webex. Many schools use Zoom, and schools with Google G-Suite accounts have Google Classroom and Google Meet. Our school currently holds two days of offline classes, and for the remainder we use Cyber Learning System and Zoom to run online classes. The students were not particularly familiar with computers, so they had to learn many aspects ranging from how to access the platform to actually performing the learning activities. Though it was difficult at first, they got used to it eventually, and we are currently using a variety of teaching methods, both online and offline, and are enjoying the classes.

I have been working as a 4th grade homeroom teacher for gifted children at the Gimpo Office of Education, and last year 30 sessions were held as face-to-face classes. Unlike other classes, since it is a class for gifted students, there were many types of instructional materials required, and because it was the first time that students had taken an online class, there were many things to prepare. We decided on Google Classroom as the platform to use for the classes for gifted children. One of the difficulties of online classes is that it can be difficult for young students to sign up and log in to the site. The Gifted Education Center created and provided G-Suite accounts for students and teachers which made usage of Google Classroom less challenging. At the beginning and end of each class, we used Google Meet in order to direct that day's lesson and answer questions from students in real time. In this way, I was able to lead the class in a lighter atmosphere by starting with some light discussion and greeting students face-to-face. After completing the section using Google Meet, the students would read the script that I uploaded, watch the video of the lecture, and submit the assigned activities. While the students were doing this, I stayed in the Google Meet room for the purpose of communicating personally with any students with questions or giving additional assignments to anyone who had completed their assignment early, thereby enabling individual learning.

One of the best things about Google Classroom is that it enables easy management of assignments. I think it is really nice to know right away who among the students has not yet submitted an assignment. I also like the fact that the teacher can immediately give feedback on individual assignments submitted

by students. In turn, students can then check that feedback and develop their assignments accordingly. This improves the quality of the assignment and encourages students to think more diversely. I thought that online classes would only permit individual learning, but using Google's various collaboration tools (documents, presentations, etc.), it was possible to create small groups in Google Classroom and set group projects that teach cooperation and how to create great outcomes. As such, online classes, which I thought would be inferior in quality compared to face-to-face classes, developed more and more through the process of trial and error, and resulted in classes that were close in quality to offline classes.

Online Class Using Google Classroom

The most worrisome part of online learning was the thought that it would be harder for teachers to keep track of the level of achievement or progress of students, in comparison to offline classes. However, it was possible to provide detailed guidance for individual students through Google Classroom's video conferences, assignment management, and grades tab. By means of the various online classes mentioned above, teachers in Korea are doing their best to educate students even during the pandemic. Even though it was frightening and difficult to set off down this new road, we were able to overcome the crisis by working together to adapt to these new educational changes and make creative progress.

Ⅲ. Policy suggestions

In order to teach online, the interest, effort, and cooperation of students, parents, and teachers are all of paramount importance. Having a respectful attitude that online classes are as important as offline classes is also very important. Students have to actively participate in classes and do their assignments faithfully. Teachers, as educational experts, must curate and produce content, prepare for live two-way classes, identify individual achievements, and provide assignments. Lastly, parents' interest in, and cooperation with, online classes is also necessary. Once all these three factors are in place, online classes can be

successful and meaningful.

In order to facilitate this, the requisite infrastructure must be established above all else. There must be sufficient devices (PCs, tablets, smartphones, etc.) available for online classes, and both students and teachers must be able to handle these devices well. A stable internet environment is also required. Effective online training cannot be achieved in an unstable situation whereby access is slow and connections are interrupted.

In addition, there is a need for a variety of video content that can be used as tools to make online classes efficient and fun. If the elements mentioned so far are realized, I believe that effective online classes and diverse education will become possible.

Ⅳ. A word for teachers in the U.S.

The pandemic called for new roles for schools and teachers. Now, Korean teachers are facing an educational change that requires excellent teaching skills to effect the conversion from offline to online classes. At first, there were many errors made and difficulties experienced, but we are sharing resources and helping each other.

Korean website through which teachers can share learning materials

I assume American teachers are dealing with situations that are similar to ours. In conditions whereby many schools are closed due to the virus, I think you will all overcome this crisis by channeling the expertise of teachers. Above all, collaboration between teachers seems most important in order to overcome such a challenge. I will conclude with this: I believe that this crisis will be an opportunity to increase our teaching abilities by sharing and learning from each other. Thank you.

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