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Divide

LESSONS FROM A PANDEMIC

WHAT HAVE WE LEARNT?



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VIEWING CRISES AS OPPORTUNITIES

In the wake of the global crisis caused by COVID-19, the world has faced not only unprecedented healthcare and economic challenges but also huge educational shifts. In Singapore, teachers had to rethink and redesign the ways they deliver their lessons when the government implemented the national Circuit Breaker measures that resulted in the full closure of every school for a period of one month.

Despite the challenges that many teachers and school leaders are confronted with during the sudden transition from physical classrooms to one that is fully virtual, it is heartening to see our professional teaching community lending support to one another. The crisis also further reinforces the important role that families play in enabling the child's learning at home; to a great extent, parents become the main purveyor of the child's education.

With much changes and innovations occurring during one of the bleakest periods in history, what would education be like as the world recovers from the pandemic? To have an answer to that, we take a few steps back and look at what a few schools in Singapore have done for their students during the Circuit Breaker period and a virtual environment one NIE researcher has designed for students to better understand the importance of social distancing in this issue of *SingTeach*.

More importantly, this issue also hopes to highlight the importance of educating for the VUCA (volatile, uncertain, complex and ambiguous) world, the challenges that could come with embracing technology and why we should view crises as opportunities rather than challenges. To this end, we hope the new year will bring us more confidence in believing and doing the best for teaching and learning as we further embrace the new norms that 2020 has created.

- *SingTeach* Editorial Team

ONLINE EXCLUSIVES

CONTRIBUTION

Weathering Educational Changes
By Dr Johannis Auri Bin Abdul Aziz and
Professor David Hung



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EDUCATION PANDEMIC

IN THE TIME OF A

The COVID-19 pandemic is a large-scale catastrophic event that has created widespread disruption to almost every industry known to us. When the outbreak first happened in early 2020, it brought about the most abrupt changes in the way many of us live. While adjustments had to be made to our daily lives, the extent of these changes greatly differ from one to another. In The Big Idea article, we look at the kinds of challenges and changes the education sector in Singapore faced and had to make in order to allow students continuous access to learning.

The Singapore Ministry of Education (MOE) announced on 27 March 2020 that all students in primary and secondary schools, and junior colleges will have one day of home-based learning (HBL) a week. However, a week after the announcement, the country implemented the Circuit Breaker measures that lasted almost two months. Despite the struggles and challenges that accompanied this transition, our teachers adapted to online teaching and learning.

What does it take for our teachers and learners to be prepared and well-equipped to adapt and readapt in this VUCA (volatile, uncertain, complex and ambiguous) world?

PREPARING TEACHERS FOR THE VUCA WORLD

As Singapore slowly regains her footing months after the virus outbreak, much of our current situation is uncharted territory and almost everyone is still learning as we go. This is the same if not more so for our education sector. What will this mean for the future of teaching and learning? And how will this impact teacher education in Singapore?

"Teacher education has never stood still," Director of the National Institute of Education (NIE), Singapore, Professor Christine Goh says. "As a nation, we have created many educational pathways for our children and youths, and we continually address societal and individual aspirations for educational outcomes. This calls for nimble and innovative education of teachers at all levels."

In 2020, NIE celebrated its 70th anniversary. "In these past 70 years, we have seen many changes and transformations to the way we educate teachers for the nation," Professor Goh shares.

One significant transformation more than a decade ago was the NIE Model of Teacher Education for the 21st Century (TE²¹) that places the 21st century learner at the heart of NIE's teacher education goal. In 2018, NIE also introduced a learning framework to further build on the strengths and achievements of TE²¹. "It aims to develop and nurture teachers who are not only strong in their knowledge, skills and values, but who also have the cognitive flexibility, wisdom and empathy to educate learners for an increasingly unpredictable future," Professor Goh explains.

Teachers must also have the personal drive to learn and improve continually as it gives one the confidence and skills to manage the rapid changes in our world. But beyond that, what are some of the most important competencies or skill sets our teachers must have to be able to effectively cope with changing conditions?

"Teachers must acquire skills to manage themselves well and learn productively and harmoniously with others," explains Professor Goh. "Self-care, resilience, adaptability, willingness to collaborate, keeping an open mind and the ability to communicate clearly and empathetically are all-important attributes to develop, as they can help anchor an individual in the face of disruptions and unpredictability."

EDUCATIONAL TECHNOLOGY TO SUPPORT TEACHING PRACTICES

For many teachers, the COVID-19 situation presents an opportunity for them to relook, rethink and redesign their pedagogical models to best meet the needs of the learners. It also further reinforces the flexibility and benefits afforded by the blended learning approach—one which mixes both online and face-to-face teaching.

It is without a doubt that the pandemic has accelerated the adoption and acceptance of technology as a useful tool for teaching and learning. As we recover from the pandemic, what learning points do we take from this experience?

According to Mr Suraj Nair, Director of Technologies for Learning Branch (Educational Technology Division at MOE), technology can never replace the in-school experience despite its many affordances. "Classroom interactions are valuable for building student-student and student-teacher relationships, socio-emotional learning, and the development of 21st century competencies such as collaborative skills."

Suraj also adds that for some segments of the student population, being in school is essential for their learning and overall well-being. As such, while the use of technology in teaching and learning is anticipated to grow exponentially in the years ahead, such technology serves to further support, complement and enhance teaching and learning.

With educational technology increasingly integrated into Singapore's education system, it is even more crucial that we also ensure access to these technological advancements for every student.

MAKING LEARNING ACCESSIBLE FOR ALL LEARNERS

With the advent of technology and the appropriate government support, the transition to HBL during the Circuit Breaker period was a success for most, albeit with some struggles to readjust to the change at the beginning. However, it is also important

to acknowledge and understand some issues that surfaced because of this technological transition.

"From our conversations with some of our research project participants, we learnt that the access to technological devices could be a challenge for some children," Co-Director of the Centre for Research in Child Development at NIE, Associate Professor Kenneth Poon, shares. "However, the issue is not necessarily only one of access to technology but also sometimes related to other aspects of technological use."

These include the degree to which the child is able to access HBL lessons independently and the degree of adult supervision that is needed. In all cases, there is a requirement for there to be higher levels of collaboration between schools and families, and perhaps other social service agencies.

It also becomes more pertinent for the teacher and caregiver of the child to collaborate for an effective HBL to occur for students with learning needs. "In general, with children who have learning needs, it becomes more critical to work closer with their caregivers during remote learning since the caregivers are now the primary means through which young children access learning," explains NIE Research Fellow Dr Yang Xueyan who, with her team of research assistants, recently interviewed more than 40 parents of children with special needs as part of Kenneth's research study that looks at the transition and adjustment of these children across primary and special schools.

For both Kenneth and Xueyan, one of the many lessons that they have learnt from COVID-19 is that supporting students at risk or who have special needs requires coordinated efforts among various stakeholders, including the school, teachers, and parents.

"This was critical when implementing remote learning and still holds true during regular school periods," Xueyan explains. "To do so, we would need to develop or strengthen the relationships between teachers and parents, and among teachers, therapists, and administrators."

ONLINE EXCLUSIVE

Read the online version of this article to find out how our education ministry ensures access to technology for all students in Singapore.

LESSONS FROM THE PANDEMIC

As the nation picks itself up through an unprecedented period, it certainly reveals the strength, motivation and resilience that our education fraternity have to ensure that learning never ends, not only for themselves as educators, but also for their students.

Even in the middle of a pandemic, teachers continue to deliver quality education despite the challenges that come with HBL. "The COVID-19 crisis presents many major opportunities for learning. Everyone learns to adapt to the constantly evolving situations," Director-General of Education Mr Wong Siew Hoong says. "Learning to adapt to constantly evolving situations helps to build resilience, not just for this pandemic, but as important life skills for future challenges."

Mr Wong also shares the reason why the ministry prioritized the reopening of schools when the pandemic began to stabilize within the country. "Teachers need to be adaptable and innovative. Managing and adapting to the crisis, and maintaining a sense of normalcy allow students to learn many important 21st century competencies."

Beyond the reopening of schools, the pandemic also further highlighted and reminded everyone that every student matters. "This professional value has become more pronounced as more students struggle to cope with the crisis and with continuing their learning during the crisis. Our efforts to reach each and every student is therefore imperative," Mr Wong adds.

As MOE strives to create an environment where educational technology is an even more integral part of our students' schooling experience over the next 5 to 10 years, it is hoped that our students will emerge as future-ready digital learners. Teachers would also become increasingly skilful designers and facilitators of meaningful technology-mediated learning experiences.

Mr Wong remarks: "Our teachers have done admirably well. Keeping teaching and learning as un-interrupted as possible was really important during the Circuit Breaker as well as when physical schooling resumed with safe-management measures. The professional ethos to keep going despite the challenges must be commended. All in all, we thank all our teachers for doing their professional best to look after our students very well under the most challenging of environment."

As we look forward to a post-pandemic future of teaching and learning, it is only rightful that the credits be given to the unsung heroes—our Singapore teachers. ■

About the Interviewees

Professor Christine Goh is Director of the National Institute of Education (NIE), Nanyang Technological University, Singapore. **Mr Suraj Nair** is Director of the Technologies for Learning Branch (Educational Technology Division at the Ministry of Education [MOE], Singapore). **Associate Professor Kenneth Poon** is Centre Co-Director of the Centre for Research in Child Development at NIE. **Dr Yang Xueyan** is Research Fellow at the Office of Education Research at NIE. **Mr Wong Siew Hoong** is Director-General of Education (Professional Wing at MOE).



Enhancing the Home-Based Learning Experience

There is no doubt that it truly takes a village to raise a child. This rings true especially during the COVID-19 pandemic that pushed most of us beyond our comfort zones. For many teachers, conducting lessons remotely on a daily basis for a prolonged period was something that one never thought would happen. But when it happened, it only reinforced the fact that parental involvement is a tool more powerful than technology itself in ensuring the success of home-based learning lessons.

NIE Research Fellow Dr Yang Xueyan shares the following two tips for teachers when implementing remote learning:

PARENT-TEACHER RELATIONSHIP

Strengthening the professional-parent relationship can allow parents to be more open with educators about their needs, priorities and strengths in the home. When teachers have some understanding about the family's situation, they are more able to share strategies that can be more feasible for parents to implement at home.

DIGITAL LITERACY

While keeping in mind the need to manage young children's screen time, equipping them with basic ICT skills may be advantageous if they need to engage in remote learning in future. These include basic skills like typing, learning to turn on a computer, to more advanced skills like accessing learning portals, learning to use the Internet and safety skills in using the computer and the Internet.

CREATING AN ENGAGING VIRTUAL LEARNING JOURNEY

When the Circuit Breaker measures were first announced in April 2020, many aspects of one's life had to undergo changes on short notice. Schools and teachers made drastic changes to the curriculum and lesson plans in preparation for the national shift towards home-based learning. Despite the challenges that came with the shift, one Lead Teacher (History) at Fairfield Methodist School (Secondary) was determined to ensure his students will continue to enjoy learning, even from home. Mr Ezal Sani shares with us his journey where he and his team of teachers adopted a new virtual simulation method to create a digital learning journey for their History students—all as part of their effort to keep their students engaged even from a distance.

ONLINE EXCLUSIVE

Find out how the virtual journey on the *Kuula* platform looks like in the online version of this article.

THE NEED FOR SUPPORT AND CHANGE

Pre-COVID-19, Mr Ezal Sani used to bring his students to museums as part of the school's History curriculum to encourage them to apply and expand their learning on specific historical concepts and skills in the form of Historical Investigations (HI). "As part of enrichment activities for our students, we would usually bring them on a learning journey to the National University of Singapore (NUS) Museum as part of the HI experience," he shares.

However, museum visits were no longer possible when the Singapore government implemented the Circuit Breaker measures. "We realized our museum plans may not materialize but we still wanted our students to go on the learning journey."

With the support of his colleagues, Ezal and his team of History teachers decided to create a virtual tour of the NUS Museum in which students could look at archaeological artefacts and complete tasks online. "Synergy yields amazing results. I am extremely thankful to all my fellow History teachers who came together despite the short timeline," Ezal shares. "My Head of Department was also very supportive of the idea by allowing us time off during our free periods to do this and it helped a great deal."

EMBRACING AND OVERCOMING CHALLENGES

Ezal and his team kick-started the project with a site recce. As the museum staff were then transitioning to work from home, the team had to complete the project which also included filming on-site within a tight timeframe.

"Time was of the essence so we had to work fast to get everything done before the museums closed," Ezal shares. "In fact, we got lucky because the museums officially closed as part of the Circuit Breaker measures on the day *after* we completed our filming!"

The filming also did not occur without its own set of challenges. As Ezal and his team were unfamiliar with the usage of a 360-degree camera, they bought one and learnt how to operate it as they went. "On top of the hardware being a challenge, the software was also another one. Stitching the virtual tour together was something we learnt on-the-job and YouTube was my best friend," Ezal shares.

The team also struggled when deciding on the platform to host the virtual tour package due to the varying qualities of pictures and layout types that each platform offers. Eventually, the team settled on *Kuula*, an all-in-one 360-degree virtual tour platform which students could access from the Student Learning Space (SLS).

I look forward to collaborate with like-minded History teachers across Singapore on various projects for different levels to curate a set of ready virtual tours that can be used and adapted by everyone in the fraternity.

THE VIRTUAL LEARNING JOURNEY

The experience begins with a brief introduction of the museum followed by a virtual tour.

In the virtual museum, students could click on various hotspots to read and learn about the museum itself and the artefacts displayed. Then, as part of the assignment, students were tasked to inquire on an authentic historical issue and curate their own museum exhibits based on that.

At the end of the assignment, students demonstrated in groups what they had learnt by assessing their classmates' inquiry questions and how they are connected to the curated museum exhibits.

The amount of effort that went into creating the virtual learning journey was well paid off for Ezal and his team. In the post-experience survey, most of the students shared that they found the assignments to be meaningful and manageable. "It's heartening to know that most of them also enjoyed the virtual tour and felt they could learn effectively from it."

"Given that it was our first attempt, we felt we could improve the quality of the 360-degree images and we would like to try again with better hardware and software," Ezal adds.

PLANNING FOR FUTURE CONTINGENCIES

With the successful implementation of this virtual learning journey, Ezal plans to expand on such virtual tours with fellow teachers as part of a Networked Learning Community (NLC), even beyond this pandemic.

"I look forward to collaborate with like-minded History teachers across Singapore on various projects for different levels to curate a set of ready virtual tours that can be used and adapted by everyone in the fraternity," he shares. "You are never alone in the fraternity and there are great practitioners you can turn to for advice, such as the different NLCs and the very friendly Master Teachers."

Despite the unforeseen happenings of 2020, Ezal remains positive about the future.

"I've learnt that there is never a dull moment in teaching and we need to rise to every challenge that may come our way. This year was unprecedented but if we all put our heads together and think for our students, we can always come up with creative ways to make things happen!" ■



About the Interviewee

Ezal Sani is Lead Teacher (History) at Fairfield Methodist School (Secondary).



Closing the Digital Divide

Amidst the height of the COVID-19 pandemic in Singapore, schools were shut, and full home-based learning was implemented nationwide. As the importance of digitally-mediated learning presented itself, so did concerns over the digital divide—the gap between those who have access to resources and the know-hows for online learning and those who don't. Assistant Professor Victor Lim Fei from NIE shares his opinion on home-based learning and closing the digital divide.

At his June 2020 MOE Workplan speech which was shared online, the education minister spoke on the initiative of making home-based learning (HBL) a regular feature of education in Singapore.

He also made it clear that “home-based learning” need not happen at home, as students can also be in school. Regardless of location, the emphasis is on creating more space for digitally-mediated self-directed and inquiry-based learning for students.

This is complemented by another initiative to equip every secondary school student with a personal digital learning device by end-2021 under the National Digital Literacy Programme. As the minister puts it, it is time to close the digital divide.

Digital Divide

The digital divide is more than access to devices. It is also about the digital literacies of students and the proficiencies of teachers to design for online learning. Normalizing HBL will provide more opportunities for teachers to hone their skills to design online learning and for students to practise digital literacies.

As the last-minute frantic scramble to set up online learning during the Circuit Breaker period

has shown us, there has been varying quality in students' HBL experiences. Many parents have also found themselves needing to guide their children, particularly those in primary schools, through the teacher's instructions.

Some parents have had to navigate across multiple platforms and log-ins, as well as manage tasks such as scanning and uploading of completed worksheets, which are beyond the technical proficiency of young children.

Nevertheless, the learning for the children has continued. Parents and children, after a few flustered days, have adapted quickly to the routines and expectations of HBL. The continuation of learning is important given that research has documented that suspension of learning time can cause a loss of knowledge and skills gained earlier.

Opportunities to Design Online Learning

Most primary and secondary teachers in Singapore would not have had much opportunities to design online learning experiences in the context of full HBL, except for the occasional e-learning day that typically takes place once a year.

While the use of technology to support classroom teaching has been widely adopted in schools, online learning requires a different set of



pedagogical considerations which teachers, who are used to face-to-face learning, need to have familiarity and practice with.

As educational researchers have long recognized, it is not the technology but the teacher that makes the ultimate difference. Despite their lack of familiarity and practice, it is heartening to see teachers stepping up to the occasion to deliver HBL to their students to the best of their ability during the Circuit Breaker period.

The good work done by the teachers despite their relative lack of familiarity in designing online learning experiences reveals the deep reservoir of professional competence that the teachers in Singapore possess, which they have tapped into when the need arose.

For example, teachers from Anglo-Chinese School (Junior) created videos of their lessons using PowerPoint and uploaded them on the Singapore Student Learning Space.

The teachers also shared creative ideas such as a virtual “pyjamas party” where students wore pyjamas and brought their soft toys to a video meeting for a Primary Two English lesson on the topic of dreams.

Such innovations allude to what more teachers can do if they have more familiarity and practice in designing online learning experiences.

Towards a Blended Form of Learning

With the creation of more opportunities for online learning in the “new education normal”, teachers and students can have the best of both worlds. Students can experience the best of what physical schooling can offer, and enjoy the new ways of learning through HBL.

Teachers can also continue to practise and hone their skills in designing online learning experiences and students will have more opportunities to grow their digital literacies.

The pandemic has radically advanced the digitalization efforts of primary and secondary school education in Singapore.

Our teachers and students' experience over the last few months as well as the vision of the policymakers and curriculum planners will pave the way for the “new education normal” in Singapore towards a greater valuing of online learning and a sensible implementation of a blended form of learning in schools, combining the best of physical instruction and online learning for our students. ■

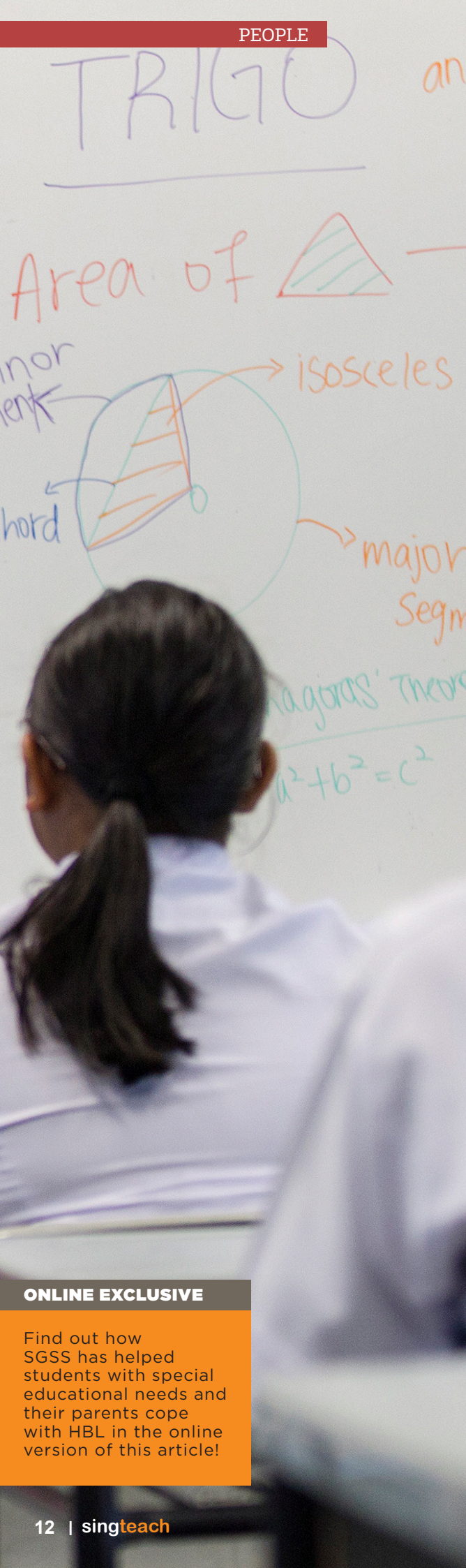


About the Author

Victor Lim Fei is Assistant Professor with the English Language and Literature Academic Group at the National Institute of Education, Singapore. He serves as consultant for the World Bank on digital literacies projects.

ONLINE EXCLUSIVE

Read more about the values of virtual learning in the online version of this article!



A School's Experience in Providing an **Undisrupted Education**

When home-based learning was rolled out nationwide at the peak of the pandemic, Serangoon Garden Secondary School (SGSS) found itself well placed to ride out the storm. Getting teachers to teach through online platforms such as Zoom and Google Classroom went without a hitch, with them having had experience in using these tools before. Meeting the learning needs of every student, including those from disadvantaged backgrounds, was also a top priority for the school. SingTeach talks to Mdm Valerie Goh, principal of SGSS, on how well prepared the school was to tackle the disruption head on.

The shift from physical classrooms to online learning has been a seamless one for Serangoon Garden Secondary School (SGSS). As with many other schools in Singapore, teachers and students have already been using the Student Learning Space (SLS) for the past two years.

School principal Mdm Valerie Goh says: "At the beginning of this year, teachers and students began using Google Classroom alongside SLS. Teachers found Google Classroom to be more efficient at collating the students' work and submissions."

She also describes the positive experiences the Lead Teacher, Ms Aw Kah, and Assistant Year Head, Ms Chew Kai Qing, had while using Google Meet and Zoom to teach and pre-record lessons as they found them to be easy to use and effective. These web services, Valerie says, presented opportunities to reach out to students who might have missed out on lessons or have a greater need for reinforcement for learning.

With a desire to share their experiences and further strengthen the other teachers' technical knowledge, both of them spearheaded the bite-sized training sessions on using Google Classroom and Zoom. Valerie adds that she is heartened by the teachers' collaborative efforts and enthusiasm in upskilling themselves even before the pandemic started.

"By the time home-based learning (HBL) and school closures were enforced, most of the teachers were equipped with the basic know-hows of using these technology tools. The immediate transference of skills, from learning straight to practical use, raises the collective efficacy of all staff and has made the transition process much smoother," she shares.

STRENGTHENING THE PARENT-TEACHER RELATIONSHIP

Valerie makes an interesting observation that the Circuit Breaker period has given the opportunity for parents to sit in during their child's Zoom sessions and be an active participant in the child's learning journey. To better support those who are learning at home, it is imperative for the school to maintain and strengthen the parent-teacher relationship.

ONLINE EXCLUSIVE

Find out how SGSS has helped students with special educational needs and their parents cope with HBL in the online version of this article!

"To keep the communication lines open, we continue to organize zoom Parent-Teacher Meetings where parents are able to come onboard and share their concerns about learning, exams and the curriculum. We also leverage on our social media platforms, such as *Instagram* and *Facebook*, to keep us connected," she shares.

Seeing the crisis as an opportunity to further build on the parent-teacher partnership, she and her team of teachers ran two online parenting workshops during the year that focused on cyber wellness and handling anxiety in youths—issues that are particularly relevant.

"The online sessions have been warmly received by the parents who find them to be convenient and useful in guiding their children," she says. "The pandemic has actually made us look for creative ways in how teachers and parents can continuously work on a common goal of supporting the students' learning."

NARROWING THE DIGITAL DIVIDE

The pandemic has brought into focus the digital divide among students, especially for those without computer and/or Internet access, a concern not lost on Valerie.

She recalls how the school's teacher assistants, Information and Communications Technology (ICT) associates and HOD for ICT sprang into action to procure new 4G mobile routers as well as approximately 80 laptops for students who require additional support.

Valerie adds that she is much encouraged by the swift actions of the team of teachers in ensuring that student learning can continue as normal and undisrupted as possible.

THE "HOPE@SGSS" PROGRAMME FOR HIGH NEEDS STUDENTS

The school stepped up its efforts, and opened up its classrooms and laboratories to high needs students whose homes were not conducive for HBL. The "Hope@SGSS" programme was set-up to ensure a holistic learning experience for the 30 to 35 students who were coming back to school during this period.

"These high needs students are generally those who are on the financial assistance scheme (FAS)," she shares. "We used a targeted approach to identify those who would need this additional support during Circuit Breaker. First, we looked at FAS students who live in 1- and 2-room flats, and then slowly widened the pool to 3-room flats. Inputs from form teachers were also taken into consideration before the list of eligible students was finalized."

Apart from the usual classroom time, various types of activities were curated specifically for them, such as recreational sports and enrichment activities like balloon sculpting and handicraft activities. The school also worked with The RICE Company, a non-profit organization that seeks to uplift youths through the arts, to provide art, music

and dance lessons that the students could participate in after school hours.

"It is important for us that we do not stigmatize those who are returning to school. Our focus goes beyond academic learning as we want them to have a meaningful experience during the HBL period," Valerie emphasizes.

Post-Circuit Breaker, to sustain the support for at-risk students, the Hope@SGSS programme has evolved into a structured programme called "Project Five Degrees". The school is partnering with the National University of Singapore (NUS) Students' Community Service Club and Nanyang Polytechnic (NYP) Community Service Club to tutor and mentor at-risk students.

Under this programme, these students are allowed to leave the classroom during curriculum time and have a one-to-one Zoom session with the NUS student tutors in the school library. On weekends, they can come back to school and be personally tutored and mentored by the NYP tutors, some of whom are SGSS alumni.

"The name of the project reflects our hope for them—if their mindset towards learning shifts even by a small five degrees, their life trajectory can change by leaps and bounds. We hope that we can play a small part in possibly making a huge positive change in their future," Valerie says.

EDUCATION IN THE NEW NORMAL

Even though Circuit Breaker has ended, HBL is set to become a regular feature in the local education system. "At SGSS, HBL and Zoom lessons are still on-going, albeit at a reduced frequency," Valerie comments.

She describes how some remedial classes, which are usually held after school hours, have been moved online. She adds that teachers now find it more convenient to post and curate subject notes on Google Classroom so that students can extract them when required. Not only that, the school is also using a blended learning approach to reach out to students who are absent from schools for a prolonged period of time.

"The affordance of technology has critically reshaped the way we conceive of learning as well as student learning experiences in schools. SGSS is exploring the different ways on how to make online learning complement classroom teaching. I believe that we must always be ready to equip our students and teachers with the right skills to adapt to the new normal," Valerie says with much conviction. ■

About the Interviewee

Mdm Valerie Goh is Principal of Serangoon Garden Secondary School. From 2008 to 2010, she was Vice-Principal of Assumption Pathway School. After which, she became the Principal of Bishan Park Secondary School which merged with Peirce Secondary School in 2018.

The SORBET Project

Learning the Importance of Social Distancing

With the COVID-19 pandemic, safe distancing measures have been put in place worldwide. In order to impress upon students the importance of safe distancing, Dr Kenneth Lim, Research Scientist at the Office of Education Research, NIE, developed the Socially Responsible Behaviour through Embodied Thinking (SORBET) Project.

The project makes use of a virtual environment based on open-source technologies to create an immersive experience to help students understand the concepts involved in the spread of a virus from the perspective of Citizenship and Character Education, and of Mathematics.

The spread of the virtual virus is based on probability—each interaction in the virtual environment is logged and charted—thus students are able to see the direct correlation between their actions and the consequences incurred, without any time lag. Representing the SORBET Project team, Kenneth shares more with us.

Why do you believe that the SORBET Project is effective in helping students understand the importance of social distancing?

I believe that the SORBET Project is effective because the students themselves are telling us this. My team and I surveyed 114 Secondary Two students, and it was heartening to see a statistically significant positive difference in their responses to the statement “I can make a difference to how Singapore responds to the COVID-19 pandemic” after they had gone through the project simulation. This idea of taking personal responsibility for our actions lies at the heart of the SORBET Project, because we really would like students to exercise self-discipline in forming the habit of practising social distancing because they truly believe in its importance, and not simply because they are told by others to do so.

What are your hopes for the SORBET Project?

My team and I are excited to take the SORBET Project further in 2021. We have recently applied for funding to enable the project to be compatible with a wider range of platforms, such as tablets and smartphones. Additionally, thus far we have only engaged with secondary school students, so we also are planning to engage with primary schools regarding the project. Stay tuned! ■

The SORBET Experience

Students from Bedok South Secondary School had the opportunity to experience the SORBET Project simulation. Jaden and Sundong share with us their experience and what they have learnt from it.

Jaden: I had a very good experience with the SORBET Project. It was a fun game that I really enjoyed. One of the interesting aspects of the game is that I was able to interact with my friends in the game and the interactions would be recorded. This interaction log would be used in the transmission of the virus, which is another unique part of the game. Overall, I think the game was really interesting and unique because being able to interact with your friends is a very uncommon thing in educational games.

Sundong: Overall, I found the experience enjoyable. At first, when we were tasked to find figures with different shapes and colors, I found it suspicious since we were told that it was a math workshop, but finding the figures required little to no math skills. After they announced the actual aim a few days later, I understood why they called it a math workshop! The project taught me that social distancing reduces the chance of unknowingly infecting or being infected by others. The advantage of the SORBET Project is that it teaches through demonstrations instead of explanations. To me, demonstration is a more effective way to teach since I understood social distancing better through the experience. ■

ONLINE EXCLUSIVE

Read the full version of these four students' SORBET experience in the online version of this article!

The SORBET Social Experiment

In Cedar Girls' Secondary School, two students, Aurelia Azifa Chelfannisa and Natalie Lee, used the SORBET Project to conduct a social experiment on their classmates to observe people's behaviour towards social distancing, and the impact of their actions on their health and those around them. The participants of the experiment were first asked to go through the SORBET Project simulation without having been informed about the presence of a virus in the virtual environment. Next, the participants were told that there was a virus in the simulation and asked to repeat the simulation, and the girls administering the experiment observed the corresponding changes in their behaviour.

What have you learnt from the SORBET Project and the social experiment you conducted with your classmates?

Aurelia: This project has been an exciting experience for me. We were introduced to the SORBET Project to aid us in our research project. We conducted activities in the virtual space with groups of participants who would get "infected" if they got too close to one another, just like in real life. This SORBET environment has been a suitable replacement of a real life setting and has allowed us to see how people would behave in their daily lives. By observing their interactions, we were able to have a better understanding of how people in society would also behave in the community. Those who are more reckless with social distancing measures ended up getting infected in the simulation and I was able to draw links to their behavior in real life too. Overall, the SORBET Project has given me a platform to better understand and be more observant of people's behavior.

Natalie: There were many learning opportunities which came with the SORBET Project. Since we had no experience in conducting social experiments, we had no idea what to expect. In fact, the first run of our activity failed. However, as the saying goes: "Failure is the key to success". So, we learnt from the failure and moved on. Looking into the data we collected from the second round of the social experiment, we were able to analyse social behavior among our classmates and the reasoning behind such behaviors. ■





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