

3	Exploring Innovation through Makers' Technology	Imagineer @ GYSS is a project in the Craft & Technology (C&T) Department, Design & Technology Unit (D&T). As an effort to realise the department's mission of developing engaged learner who enjoys and appreciate aesthetics, design and technology and our school's effort to nature leaders, thinking and advocates, Imagineer @ GYSS hopes to provide students with the authentic experience and exposure them to use design thinking skills in generating modern solutions which will strengthen our future. By harnessing technology and modern prototyping skills; 3D printing, 3D rapid prototyping and laser engraving, we hope to inspire future leaders in design and engineering. Using both the D&T design model and design-thinking framework as the guiding principle, we design authentic learning experiences to ensure that the entire process of teaching and learning is relevant to the students and is in line as a part of our school's efforts in developing Thinkers.	GUANGYANG SECONDARY SCHOOL
4	NorthLight Spelling Bee: Empowering and Motivating Low Progress Learners to Spell	Synopsis (Max. 150 words. Refer to 'Appendix 2: Guide to Writing Synopsis'): The English Department imparted the fingerspelling and Look, Say, Cover, Write, Check strategies to all students in NorthLight School and organised a Spelling Bee competition so that they could apply these strategies in an exciting way. Most students are dyslexic, so they were taught these evidence-based strategies as advocated by the Orton-Gillington approach to learn to spell systematically. The Spelling Bee involved the whole school, in which two students from each class pitted their skills against their peers in four nail-biting rounds. The Socrative application was harnessed to great effect as students tried to win a Spelling Bee trophy for their class. This session will share how students' confidence was boosted through this two-pronged approach of strategies and Spelling Bee as they thought on their feet and showcased their skills. Participants can expect to gain insights on how to execute a purposeful programme aimed at teaching spelling in their schools.	NORTHLIGHT SCHOOL
5	Musicable @ SDPS – Teacher-Created Music Mobile Application (App) for Teaching and Learning	This poster will focus on the features of a teacher-developed customised mobile application (app), named 'Musicable@SDPS' using the platform 'Glide', created by our music teachers since 2019. The app consists of 4 tabs and the first tab is a compilation of Music resources sorted out by levels from Primary 1 to Primary 6. Within each level, students will be able to find worded explanation, pictures and videos for all the topics covered, including links to related SLS lesson from MOE library. This allows students to embark on self-directed learning.	SPRINGDALE PRIMARY SCHOOL

		The second tab includes Music games which allows students to interact with musical tools using a tactile approach with their mobile devices. The third tab consists of music videos from the core/dynamic repertoire and other songs used in teaching and learning. The last tab includes quiz and survey to gather feedback from students and also for formative and summative assessment.	
6	Infusing Drama Into the English Language Classroom	Drama plays an important role in students' acquisition of the language skills. It allows them to communicate and interact with one another in new ways. It also provides opportunities for students to explore a new role and experiment with various personal choices and solutions faced by the characters in the stories. In addition, it gives students an outlet for emotions, thoughts and dreams that might otherwise not have means to express. The added bonus of infusing drama in English lessons is the fun and joy that it brings to language learning. In this sharing entitled, "Infusing Drama Into the English Language Classroom", we will share with you several drama lessons using techniques like "Freeze Frame" and "Hot Seating" to teach reading comprehension, writing and oral skills.	CANTONMENT PRIMARY SCHOOL
7	Leveraging on digital tools to sequence and scaffold the Teaching of Composition in Art.	Leveraging on digital tools to sequence and scaffold the Teaching of Composition in Art. Teachers will be exposed to how purposeful selection and sequencing of content help to improve student's understanding of Composition in the lower secondary Art lessons and be inspired to leverage on technology to facilitate creative thinking and reflection in their art making process. Through a detailed sharing of the lesson, participants will gain an understanding of how strategies such as the thinking routine, 'See-Think-Wonder' and assessment for learning tool 'Praise-Question-Polish' are applied to create a productive atmosphere of learning. These strategies encourage students to share ideas, express and dialogue using digital tools and platforms. Students' end product, which was an art composition designed in PicsArt app, showed a significant improvement after the infusion of these strategies supported by feedback and reflection on SLS. The poster authors invite all Art teachers to join them in exploring what other topics may be extended to with such strategies.	HOUGANG SECONDARY SCHOOL
8	An Artistic Journey into a Creative World	The poster presents our Sec Two Art unit lesson themed 'Perspective and Illusion of Space', consisting of a series of 10 lessons – scaffolding learners to	WEST SPRING SECONDARY SCHOOL

	of Perspective and Illusion of Space	construct understanding of spatial depth and space through techniques of perspective drawing. The choices of art content relevance are carefully tailored to engage learners for a holistic learning experience. Lesson triggers involve out-of-classroom collaborative activities such as creating Anamorphic Tape Art within the school compound to bring creativity out of the classroom. This allows learners to view the world in different perspectives, understanding the many insights to making art relating to our life and reality. The final project is a digital creation of a surrealist Dreamscape with the various perspective drawing techniques learnt. With use of e-pedagogy, these lessons are designed to encourage active learning in a participative, interconnected, and reflective classroom to nurture the future-ready learners in the current digital world.	
9	Exploring the use of self-assessment as formative assessment	To further enhance students' learning in the classroom, a group of teachers explored the use of self-assessment as a mean to improve formative assessment practices in the mathematical classroom. This poster will share the use of self-assessment on the learning achievements of a group of students in a mathematical classroom over a period of two years. To heighten students' awareness of the required learning objectives in the various mathematics topics, students completed a set of self-assessment checklists after they had learnt a topic or completed an assessment. This aims to enable the students to identify and recognize any learning gaps which they may have and ways in which these gaps may be closed. The use of regular self-assessment acts as a platform to increase students' self-awareness as well as to facilitate their development as reflective learners so as to enable them to become more independent in regulating their learning through identifying, correcting and learning from their errors.	HENRY PARK PRIMARY SCHOOL
10	How to be a Boss?: A blended multidisciplinary approach to Student Initiated Learning	To introduce marketing concepts to students, teachers of Boon Lay Secondary School designed a multidisciplinary Student Initiated Learning experience. This poster invites teachers to explore key applications of technology that enhance the design of blended multidisciplinary learning experiences with real world applications. Taking the role of entrepreneurs, students embark on an asynchronous self-paced acquisition learning experience to learn basic marketing concepts. At a synchronous enrichment programme, students subsequently apply these concepts by collaborating on a business proposal project while getting inspiration from practitioners. This learning experience allows students to envisage how Elements of Business Skills, Nutrition and Food Science and Art knowledge can be applied together in a real-world setting. At the same time, students can apply 21 Century Skills such as	BOON LAY SECONDARY SCHOOL

		critical and inventive thinking as well as communication, collaboration and information skills.	
		Interested teachers may get in touch to collaborate on similar multidisciplinary learning experiences.	
11	Using Assessment Information For Mathematical Problem-Solving	Purpose: In line with the school's efforts to engage students in the assessment process, P6 teachers guided students to act on assessment information and feedback to close learning gaps on mathematical problem-solving. Upon receiving their marked scripts, it is imperative that students delve deeper into each math problem by analysing them diagnostically. Using some guiding questions and through class discussions, students reflect on their problem-solving strategies, and assess their learning through solving parallel mathematical problems. Methods: A pilot project was conducted to study the impact of a class of P6 High Progress and Middle Progress students being diagnostic in an assessment task on mathematical problem-solving. After the students had received their Term 1 and Term 2 test scripts consisting of 17 math problems each, they learnt to diagnose their solutions to the problems based on information available such as teachers' marking, feedback and corrections. Using some guiding questions and through class discussions, students learnt to reflect on their problem-solving. For each test, 3 lessons lasting 60 minutes each over a period of 3 weeks were conducted. Students then took another test comprising parallel problems, applying what they have learnt. Students showed improvement in problem-solving after they learnt to be diagnostic. From the interviews conducted, students reported that they became more cognisant and metacognitive during their attempts to solve mathematical problems.	FIRST TOA PAYOH PRIMARY SCHOOL
12	Creating Home-based Chemistry Learning Experiences	This poster will share the steps and considerations taken to design and implement home-based learning experiences for students. With the introduction of regular Home-based Learning Days in schools, opportunities were created for students to better appreciate the significance of science in life and society. As such, teachers of Chua Chu Kang Secondary School designed various experiments to be carried out at home. These experiments not only allowed students to actively experiment independently at home, but with the aid of online tools, students were able to reflect on their learning and receive immediate feedback. The results of a students' survey also showed that students were engaged with minimal teacher supervision and felt that these learning experiences benefited them.	CHUA CHU KANG SECONDARY SCHOOL

		The poster authors invite all Science teachers, especially those teaching Chemistry, to join them in exploring what other topics lend themselves well to learning from home-based experiments.	
13	A cognitive strategy to learning lower secondary Science harnessing popplet	This poster presentation will focus on the use of concept mapping with popplet for the learning of lower secondary Science, as part of check-out activities. Technology (i.e. popplet) is harnessed at the end of the learning activities as part of the check-out/reflection routine for students to articulate their understanding and applications through concept mapping. Scaffolds in the format of thinking routine (i.e. Connect-Extend-Examples) is designed to guide students in their thinking and reflection process. Through this thinking routine, students were provided opportunities to extend their learning with scientific reasoning, articulating the concept learnt and connecting ideas, explanation (or reasons), notwithstanding citing examples (or applications in real-world context). With this learning routine, students learnt to reflect at the end of the learning activities to communicate the new concept(s) acquired and make their thinking visible with connected ideas, explanation, examples to the concept in the form of concept map harnessing popplet. Students were engaged in the learning process and were fascinated to construct their personal concept map optimising the features of popplet. Besides the positive affective domain of learning, students deepen their understanding of the subject knowledge and taught the students to 'learn how to learn' in the learning process. The poster authors invite all Science teachers to join them in exploring a cognitive strategy enabling students to learn lower secondary Science in an engaging and reflective manner harnessing their Personal Learning Device (PLD).	SEMBAWANG SECONDARY SCHOOL
14	A Visual Classroom – Enhancing Phonemic Awareness Using Visuals in School-based Dyslexia Remediation (SDR) Programme	Despite the intensity and regularity of SDR intervention, some students continue to show difficulties with blending words. Scaffolds, in the form of visual supports, can help in reducing memory demands for these students. In our lesson study, two types of visual supports were used, a Blending Slide and Picture Cards. The Blending Slide, an image of a playground slide, aims to exercise the visual-kinaesthetic learning style by involving visual and body movement while learning	CORPORATION PRIMARY SCHOOL

		word blending. The Picture Cards seek to draw a stronger connection between the decoded words to their meaning. As they were used during waiting time during turn-taking, they also became a form of learning engagement. Observers in the research lesson study noted that students, who struggled with holding individual speech sounds during blending, benefited from the use of the Blending Slide. Matching Picture Cards also improved the targeted student's word memory, spelling and recalling.	
15	Mitigating screen fatigue: Device-free gamification that empowers and engages the learner	Purpose: This poster will introduce a science lesson package using device-free gamification, reducing the screen fatigue caused by excessive device use. Leveraging on this methodology, students are empowered through differentiated instruction and engaged through a gamified learning and collaborative classroom experience without extensive preparation time for the teachers. Methods/Approach: With the introduction of personal learning devices (PLD) for students and the influx of ed-tech tools available for teachers, the rapid increase of screen time and technology-driven distractions is a cause of concern. Can we achieve 100% engagement without the use of digital screens? In this poster, teachers will be exposed to SAMR framework of using technology for teaching and learning as well as how to leverage on the Self-Determination Theory, Outside-In Blended Learning Model, and Tomlinson's Model of Differentiated Instruction (DI) to empower learners. Teachers will also take away a ready-made tool that allows them to seamlessly embed a gamified learning and collaborative experience in their lessons. A post-lesson student survey conducted affirmed the high levels of engagement, effective DI and strong application of learning observed in the classroom. Miscellaneous: Resources developed for the lesson package will be shared for all to use and adapt for their respectively teaching levels and subject. Collaborative resource creation and addition of features can be explored.	TEMASEK SECONDARY SCHOOL
16	Food Security and Design of an Edible Landscape - An integrated STEAM approach	Purpose: A STEAM lesson package was designed to address the issue of food security in Singapore through the development of an edible landscape. Approach (context): Students learnt about the complex issue of food	CEDAR GIRLS' SECONDARY SCHOOL

		security in Singapore across different subject disciplines through an integrated STEAM approach. Using a learning journey to Edible Garden City, an online farming game, Science inquiry, Mathematical modelling and Design Thinking, students considered multiple factors and trade-offs when developing their edible landscape. Students also learnt 21st century competencies skills through this project. Approach (results): Students increased social awareness of Singapore's vulnerability in food security and how different disciplines can be integrated in problem-solving in real world context. Results of a student survey showed that students understood the idea of responsible decision making in achieving sustainable food production and gained appreciation of Singapore's constraints and vulnerabilities.	
17	Using Deck Toys to Bring the Mangroves Home (A geographical investigation on the mangrove forest in Sungei Tampines)	This poster will focus on leveraging e-pedagogy to incorporate a virtual learning journey to Sungei Tampines with the use of Deck.Toys. In 2021, with all external field trips ceased due to the pandemic, the geography teachers initiated a pilot project to conduct a virtual field trip to Sungei Tampines so that students could still carry out a geographical investigation related to their topic of study. They had the experience to apply their learning of Geography to real world phenomena and related issues. This poster invites all teachers, especially those teaching Geography, to explore the creation and value of virtual field trips in enhancing their teaching.	MERIDIAN SECONDARY SCHOOL
18	CHAMP for Life – Developing Character through Sports and Outdoor Education	This poster will focus on providing support to teachers who are seeking guidance or ideas on values-based education through sports and outdoor education. Teachers will be exposed to how active learning strategies, such as peer coaching, values infused physical education lessons and reflections, may be applied to shape behaviours for character development and values education. Qualitative data gathered through students' personal reflective statements, teachers' observations and parents' feedback suggest that active learning strategies promote deeper learning that facilitates understanding and real-life application of values. The school seeks to also invite all teachers, especially those from LLP (SOE) schools, to network and share good practices.	LIANHUA PRIMARY SCHOOL
19	STEM and e-Pedagogy in Chemistry -	STEM and e-Pedagogy in Chemistry - Making Fertiliser Salts! To enhance students' understanding of the salt	KRANJI SECONDARY SCHOOL

	Making Fertiliser Salts!	preparation methods in Chemistry, teachers of Kranji Secondary designed an active learning lesson package using STEM and e-Pedagogy for students to make fertiliser salts. This poster will share the design considerations as we crafted this lesson package. Teachers will be exposed to how e-Pedagogy may be applied to strengthen practical-theory integration in the learning of Chemistry. With the use of ICT, students work collaboratively, and practise metacognition to design their fertiliser salt preparation method. To increase STEM application, students carried out their method to prepare the fertiliser salts in the lab and used them on vegetables in the school's edible garden, gaining an appreciation for the real-life application of salts. It was observed that this package has led to more visible understanding of the concepts and better engagement in the topic compared to direct teaching approaches.	
20	Growth Footprint - Nurturing self-regulated resilient learners through use of an e-portfolio	Growth Footprint - Nurturing self-regulated resilient learners through use of an e-portfolio. The synchronous workshop will focus on the use of the Self-regulated model and Strength Based Approach to develop students' resilience through journaling in an e-portfolio during FT lessons. Teachers will be exposed to how Zimmerman's Self-regulated model and Edith Grotberg's Strength Based Approach may be applied in FT lessons together with the use of an e-portfolio, to develop students' resilience and self-regulation skills. During the session, both qualitative and quantitative data will be shared. A pilot project was conducted to study the impact of our Secondary 3 Normal Course students' resilience and self-regulation skills with the use of an e-portfolio. The Self-regulated model and Strength Based Approach were used extensively during FT lessons. The outcome and students' survey results showed that there was an increase in students' resilience and ownership in their own academic and personal goals overtime.	MAYFLOWER SECONDARY SCHOOL
21	Feeding forward in a differentiated classroom	Title: Feeding forward in a differentiated classroom Purpose: A differentiated classroom necessitates customisation of feedback given. With essays as a core assessment component for Humanities students, a team of teachers from different colleges explored how teacher feedback can enable students to be self-directed in the process of feeding forward and building self-regulation (Jones, 2012). Approach: In order to strengthen assessment literacy, the team adopted a critical inquiry approach through the use of action research to reflect on the efficacy of feedback for essays in particular as a tool for Assessment as Learning (AaL) (Earl, 2013). Various	YISHUN INNOVA JUNIOR COLLEGE

		approaches including teachers' self-reflection and peer evaluation, and focus group discussion with students were carried out and found to be informative in understanding how students can be empowered as active agents in the feedback process (Chong, 2018).	
22	How can student talk be supported in a blended learning context?	Title: How can student talk be supported and assessed in blended learning contexts in English Language classrooms? This poster presentation outlines the exploration by a group of teacher leaders in the East Zone Networked Learning Community into how classroom talk can be facilitated in both online and face-to-face contexts. There will be focus on ways in which teachers can enhance and extend students' thinking in blended learning contexts so that the learning of English Language is made meaningful and purposeful for learners.	TAO NAN SCHOOL
23	Improving Student Assessment Literacy through use of rubrics	Improving student assessment literacy through use of rubrics Purpose A key goal of student assessment literacy is to nurture self-directed learners. This is the first step towards them assessing their own learning, sharpen understanding by providing structured feedback to peers, and use effective feedback from teachers to make improvements Approach (context) Universal rubrics are used for self-assessment for improvement. The teacher would finally reinforce and facilitate clear understanding on use of the rubrics. Students would conduct self and peer assessment on the rubrics. Students would demonstrate attaining mastery by their ability to create graphic organisers for the topic, and rise above by linking several concepts or linking across topics. Approach (results) Challenges include time required to familiarise with the rubrics and providing peer feedback. With continued use of self and peer assessment, more students attained mastery of topic. Interested teachers may get in touch for the use of the universal rubric for any subject.	BUKIT BATOK SECONDARY SCHOOL
24	Much-room for Investigation	Purpose: This poster focuses on the role of IBL (Inquiry-Based Learning) approach to empower Primary Three students to take greater ownership of their learning as they apply concepts taught to a structured investigative study. Method:	YISHUN PRIMARY SCHOOL

		Leveraging the learning gleaned from employing the equipment from the school's existing food waste and orchid hybridization programmes, pupils utilise the food compost generated to cultivate edible mushrooms in the school's Plant Tissue Culture (PTC) Laboratory. Through an investigative study, students work collaboratively to explore the factors that affect the growth of edible mushrooms; using evidence to support their thoughts and claims. For students, such learning experiences inspire curiosity and help foster a sense of wonderment of the world around them. It also empowers students to take greater ownership of their learning by showing them how science interplays with real life; extending learning beyond the classroom. Miscellaneous (Eco-stewardship Programme): The programme also helps demonstrate the concept of circular economy, which is key to sustainability.	
25	Fostering Metacognition in Visual Art Education through Radar Chart Assessment	This paper aims to explore how art students can develop better metacognition using a formative assessment tool that focuses on artistic dispositions instead of technical skills. The team hopes that through this assessment tool students become explicitly aware of their own strengths and weaknesses in order to grow into more confident and self-directed learners. Teachers will be exposed to how metacognitive strategies such as inquiry-based learning and critical reflection skills coupled with the carefully designed assessment tool (Radar Chart) help students to enhance divergent thinking and develop intrinsic motivation in improving both their understanding and making of art. The piloting results data and sample student artwork exemplars have shown that students exposed to the new formative assessment tool (Radar Chart) are more engaged in creating original contents of art and able to identify their AFls independently to further hone their skills. They were able to reposition their thinking frames and develop their metacognitive processes useful for deeper understanding of artistic themes and techniques.	NANYANG GIRLS' HIGH SCHOOL
26	As It Was: Developing Historical Empathy through Synchronous and Asynchronous Discussion Learning Experience	This poster will show how students' Historical Empathy is developed through adopting viewpoints in a Synchronous and Asynchronous Discussion Learning Experience. Aligned with the Singapore Teaching Practice of Facilitating Collaborative Learning, the Experience also took cues from Laurillard's research on Learning through Discussion. With scaffolded activities for students to engage in meaningful tasks, students could monitor their own learning and learn collaboratively.	NORTHLAND SECONDARY SCHOOL

		Teachers will be exposed to how technologically modified (under the SAMR framework) perspective-taking during the Experience can facilitate multi-dimensional viewpoints that in turn deepen students' historical empathy. Student outcomes will show the benefits of carrying out the Experience both synchronously and asynchronously. I will also share my considerations in designing such an Experience. Interested teachers may get in touch to discuss how the Experience can be enhanced for more differentiated instruction or join me in exploring other topics that lend themselves well to such strategies.	
27	Building Metacognitive Practice in the Classroom with Blended Learning	This session aims to show how strategies to encourage metacognition have been effective in a blended learning environment. In particular, the use of 1) learning goals, 2) online on-going self-assessment logs, and 3) guided reflection in the face-to-face classroom will be shared. The presenter will share lesson resources, student work and reflections, as well as evidence of student learning. This will take the form of pre- and post-intervention data collected on confidence levels, and online learning logs. It will be shown how knowledge and regulation of cognition can help students become more successful, because they are given more agency and autonomy, and how the blended learning environment helps to augment this. Although primarily trialled in the English Literature classroom, the strategies adopted are applicable to all subject areas. Participants will take away ideas about how they can adapt and use these research- and evidence-backed strategies in their own classrooms.	ST. ANDREW'S JUNIOR COLLEGE

TCEF2023 for SEAMEO Participants – EXCEL Fest Booths

S/N	Title	Description	Presented by
1	Regular Home-Based Learning – Nurturing Self-Directed Lifelong Learners	The implementation of regular Home-Based Learning (HBL), as part of Blended Learning, is now an integral part of the schooling experience at secondary schools and pre-university institutions. HBL Days aim to develop self-directed, independent and intrinsically motivated learners, and also serve as a canvas for schools and teachers to innovate to further ignite students' curiosity for learning. At this booth, you will learn about key guidelines, useful implementation tips, as well as good practices and stories shared by schools to better achieve the intended outcomes of regular HBL. Visitors will learn about: (a) key guidelines in the implementation of regular HBL, as well as responses to commonly asked questions; (ii) useful tips in implementation; and (iii) good practices as well as experiences in implementation shared by secondary schools and pre-university institutions.	Blended Learning Steering Committee Secretariat
2	Making the Classroom Work for You – How Learning Space Design Matters	Should we have mobile furniture in the classroom? How might the classroom support greater collaborative learning? With new pedagogies, policies and teaching and learning practices, the spaces where teaching and learning occur can be updated and better leveraged. Schools and teachers have experimented with the re-invention of learning spaces, in particular, the classroom. Explore some good practices and guiding principles to guide the re-design of your classroom. Visitors will explore: (a) key principles to guide the re-design of classrooms; (b) learning and teaching activities that classrooms should support; (c) challenges in updating the design of a classroom space; (d) measuring the success of a classroom re-design effort.	iCAP LSWG & ETD

S/N	Title	Description	Presented by
3	Supporting Blended PD for e-Pedagogy in schools	Our educators are modern learners who demand a more agile, proactive, and creative approach when it comes to professional development. Often busy and time pressed, they value being able to make choices regarding what and when they learn. The COVID pandemic has also highlighted the need for a new approach to PD in order to enhance efficiency and convenience, and to support continuous learning that is transferred to practice. Together, this has prompted a shift to a blended mode of professional development that meaningfully integrates learning experiences that are: a. online and in-person learning b. asynchronous or synchronous Join us at the booth to find out how schools can implement the Blended PD Approach to optimise opportunities for active learning and co-construction of knowledge to address the professional learning needs of teachers!	ETD
4	Developing digital literacy with Personal Learning Devices (PLDs)	The affordances of technology and the access to Personal Learning Devices (PLDs) for every secondary school student have transformed teaching and created new possibilities for learning. This has also given rise to new challenges as schools grapple with the need to help students manage learning and resources on both physical and virtual platforms. This virtual booth will provide visitors with insights into how teachers can leverage PLDs to hone students' digital literacy skills and develop their self-directedness to prepare them for an increasingly digitalised world. Visitors will be introduced to authentic stories that exemplify the school and department-wide strategies deployed by different schools to empower students through the use of their PLDs. These strategies aim to enhance the students' personal productivity and support their learning through effective application of digital tools.	ETD
5	Leveraging Online Networked Learning Communities for Collaboration in Enhancing Teaching and Learning with Technology	Learn about how Online Networked Learning Communities (NLCs) - EdTech Leaders Community (ELC) and Singapore Learning Designers Circle (SgLDC), can support the professional development of teachers and EdTech Leaders. • Gain access to a wide range of lesson resources and ideas shared by fellow teachers. These include lesson designs, recommendations on use of SLS features and other technology tools, and transformational strategies for effective teaching with technology. • Collaborate with fellow teachers through synchronous and asynchronous discussions to collectively inquire about e-Pedagogy and other innovative EdTech practices. Exchange good practices on classroom management strategies, effective learning environment set-up, and network with fellow members through discussions and webinars. Develop stronger networks of support within the fraternity to deepen EdTech knowledge and practices today!	ETD

S/N	Title	Description	Presented by
6	MOE's Use of Artificial Intelligence in Education	MOE has embarked on three use cases as part of the National Artificial Intelligence (AI) project in Education, comprising the Learning Feedback Assistant, Adaptive Learning System and Learning Companion. Explore how AI can provide Personalised Education and find out how our teachers and students have been using the AI systems. Also, learn about the efforts to promote responsible and safe use of AI guided by the MOE AI in Education (AIEd) Ethics (and Governance?) Framework. Gain an understanding of how MOE's AI projects i. Cater to the diverse strengths and aptitudes of our learners through greater customisation of learning. ii. Nurture students to become lifelong learners by emphasising the development of intrinsic motivation and self-directedness. iii. Strengthen teachers' professional practice through data-driven insights on students' learning progress	ETD
7	EdTech Tools to build a Classroom of the Future	Want to inspire greater ownership of learning among students? Or figure out how to create a safe space for your students to share their thoughts and feelings? These are some of the questions surfaced through the Classroom of the Future team's user research in schools, resulting in EdTech innovations to tackle these challenges. Visit our booth to try some of these solutions! Participants will explore EdTech innovations which can make a difference in (a) activating students' intrinsic motivation; (b) orchestrating coherent, engaging learning experiences; (c) engendering constructive classroom dynamics; and (d) supporting teachers' professional practice. These solutions include: Learning Gamified, a resource that enables teachers to leverage gamification for learning; Student Project Management Tool, a tool that enables teachers and students to manage projects; Mood Reflection Platform, a platform that supports social emotional learning; Source Finder, a tool to support teachers' curation of resources, and more!	ETD
8	Exploring Possibilities - an insight into the future(s) of technology in education	Is the future already here? Join us in a conversation about the influence of technology on the future of education. Be immersed in possible future scenarios, and discover what colleagues think about these possibilities and which paths we would find the most desirable. What trends or drivers lie in wait? How can we translate what we have learnt in thinking about our classrooms for today and the future? Participants will journey with us by exploring a multiverse to discover what learning might be like in 2040, ranging from the probable to the preposterous. Emerging trends and drivers that may shape the educational landscape will also be uncovered and participants get to engage in conversations to generate views on what we desire for the future of learning with technology. Futuring techniques shared can be translated to classroom practices to encourage students to consider multiple perspectives.	ETD

S/N	Title	Description	Presented by
9	The Singapore Student Learning Space: Making Learning More Collaborative, Self-Directed, Personal, and Flexible	The Singapore Student Learning Space (SLS) is MOE's core EdTech system and aims to be a one-stop hub for teaching and learning experiences. Visit our booth to experience SLS through the eyes of different users! 1 Gain new ideas on how you can use SLS both today and in the future through: a) 'Learning with SLS', writeups and short video interviews showing SLS use by different users and in various contexts , e.g. SPED student, prison school teacher, SST/HOD, Edtech partner, digital textbook/content publisher, parent, HQ officer, student interested in gamified content, young Overseas Singaporean, teachers using SLS in-class and for collaborative project work b) Infographics and prototypes of current and future features	ETD
10	Transforming learning spaces with mobile technology	What's This? Snap! (WTS) is a mobile application that transforms any static space or set-up into an interactive learning space. It allows students to actively study the world around them through multiple perspectives, stimulates their thinking and encourages self-directed learning. A major pedagogical approach of Fuhua's ALP on Forensic Science is to task students to assume the role of forensic investigators to study a mock-up crime scene to sift out evidence for further investigation. WTS, using image recognition technology, recognising the key elements of the crime scene identified by the students will provide information to deepen and broaden their knowledge and pose questions to stimulate further thinking and spark curiosity. The key elements as well as the questions and information provided are entirely designed and inputted by teachers. The application is fuss-free and easy to use, supporting teachers in the design and implementation of inquiry-based learning.	Fuhua Secondary School
11	HumaniTJourney: Planning Localised Learning Journeys in the COVID pandemic	As part of the MOE Humanities Scholarship programme, scholars are expected to go on an annual Overseas Enrichment Programme (OEP) to broaden their intellectual horizon through study and immersion opportunities beyond the borders of Singapore. In light of the Covid-19 context and closing of international borders, the traditional OEP was not able to be carried out. Our solution was then to reconfigure the OEP experience to a localised one, but in a way that would still allow our students to immerse and engage with important local and international issues through inquiry, experiential learning and perspective-taking. Our reconfigured 'trip', the HumaniTJourney, saw the use of virtual tours, experiential workshops and in-depth discussions with key stakeholders to enable participants to challenge and broaden their intellectual awareness of key tensions in society, and then translate that learning into feasible action plans.	Temasek Junior College

S/N	Title	Description	Presented by
12	Virtual Escape Room on OneNote platform	Gamification and escape rooms are commonly used classroom tools in recent years. Studies have shown that these tools are beneficial in engaging learners, providing intrinsic motivation for students to achieve learning goals and increasing enjoyment of learning. However, the recent COVID-19 pandemic poses constraints in planning a physical escape room while adhering to safe management measures (SMM). Thus, we explored the possibility of pivoting the activity online. Though virtual escape rooms are commercially available, it is costly and there are none who is able to customize content to cater to our curriculum as well as students' learning needs. We therefore designed our own virtual escape room. OneNote was chosen as the platform as our students and teachers are familiar with the app. This choice of app helps to support the teachers in the creation process and makes the activity easily accessible to the students.	NUS High School of Mathematics and Science
13	Enhancing the immersive learning experience of students in Chemistry experiments using Virtual Reality laboratories	The objectives of this project are as follows: (1) Designing a VR laboratory where students could perform Qualitative Analysis (QA) tests to determine two unknowns R & S. (2) Designing a VR laboratory where students could perform Potassium Iodide (KI) tests to determine the presence of oxidising agents. Innovations and outcomes: (3) For the QA VR laboratory, the experiment is based on reactants that are classified as Explosive Precursors (EP) hence it is not allowed to be conducted in schools. With the VR laboratory, students are still able to perform the experiment safely and experience the rich colour change in the reactions. (4) For the KI VR laboratory, the observations made from the vibrant colour change, excite and deepen students' understanding of Redox reaction. This VR laboratory serves as a test bed for experiments that require students to identify the presence of oxidising agents.	Bukit Batok Secondary School
14	SPARKLE (Science Pack - Activity Resource Kits for Learning)	The team conceptualised SPARKLE (Science Pack - Activity Resource Kits for Learning) as part of an integrated suite of resources to support the hands-on teaching and learning of Science at the primary level. The development of SPARKLE involves conceptualising kits to address students' alternative conceptions; prototyping and trialling to ensure meaningful learning, functionality and safety; as well as developing accompanying textbooks, activity books, teaching and learning guides and SLS resources for an integrated experience in understanding and applying Science concepts and skills. These kits can be used in formal and informal learning spaces to nurture curiosity and wonder; as well as used at pre- and in-service training by various partners (e.g. AST and NIE) to support science teaching and learning.	Curriculum Planning & Development Division 1

S/N	Title	Description	Presented by
15	Web-Based Augmented Reality in Chemistry Education	This project pioneered the establishment of a robust workflow to develop Web-based Augmented Reality (WebAR) experiences for use in Chemistry Education. WebAR resources were developed at no cost and are accessible to learners and educators. The ability to teach and learn using 3D models served to alleviate challenges posed by the 3D visualisation of sub-microscopic structures at various educational levels. Customised WebAR resources aligned with national examination syllabi were implemented for the first time in Singapore for Raffles Institution's A Level chemistry lectures and tutorials, as well as in some secondary schools. While using WebAR resources, learners engaged in active learning and could better visualise and understand chemistry concepts. Developed WebAR resources were consolidated in a public Google Site for easy adoption by educators of all levels. This project offered significant time and cost savings and uncovered numerous untapped opportunities for future development.	Raffles Institution
16	Artificial Intelligence in reading for student-centric oral practice	Reading fluency has been referred to as a bridge to comprehension. It is an important part of the MOE's English (EL) syllabus. The common practice for fluency occurs through extensive oral reading practice. Reading practices are vital to students developing these skills for feedback and for teachers to check on students' progress. However these are limited by class time the teacher is able to have for practice, exacerbated by full Home-Based Learning (fHBL) between 2020 and 2021. With use of Artificial Intelligence (AI), it enables pedagogical elements that are difficult to include in regular instruction, such as increased practices with quality feedback in the form of detailed reports of individual students' reading fluency as well as data on reading fluency as a class. It has revolutionised oral practice to a student-centric practice, creating space and time in class by offering powerful formative assessment data and tools to analyse student progress, so teachers can have space to design strategies and one-to-one coaching for weaker students without compromising valuable instructional time. These strategies are incorporated into lesson design guided by SLS pedagogical scaffold.	Fairfield Methodist School (Primary)

S/N	Title	Description	Presented by
17	UNTAME: Beyond Boundaries	UNTAME: Beyond Boundaries aimed to go beyond the physical limitations and experience approaches towards educating the public on STEM through a multidimensional experience. This programme enabled participants to uncover the mystery character that they resemble, take part in a virtual social event & compete virtually, and explore STEM through a blended experience of experiments, interactions, and DIYs. In addition, participants also had opportunities to interact with local & international STEM educators & performers, as well as participate in a unique onsite experience at Science Centre Singapore. This was the first of a kind blended experience at Science Centre, where the online experience was hosted on 2 platforms – Moodle and Mozilla Hubs – with 4 experiential zones (Space, Mind, Food, and Theatre). Participants completed quests, accumulated points, and revealed a hidden character based on the quests they completed. As one of the objectives was to make connection with RIASEC codes and careers, the 4 mystery characters selected were astronaut, athlete, cyborg, and magician. Activities integrated with the experience included online activities and onsite activities.	Science Centre Board
18	Peer Support and Relationships (PSR) Efforts	Our PSR efforts aim to strengthen the network of positive relationships and foster a culture of care. We also seek to strengthen students' resilience by promoting a peer support mindset and equipping them with peer support skills. At Peer Support Level 1, every Sec 2 student learns basic skills like help-seeking and help-giving based on situations they may face in school. In-house resources are used to clearly demonstrate to students on use of appropriate strategies, including a role-play video by our own students. Form Teachers are trained first to enhance their competency in lesson facilitation. At Level 2, we appointed specific students as Peer Support Leaders (PSLs) to help, bond and influence their peers positively and to proactively support their peers in distress. The PSLs learn additional skills in the areas of befriending and bonding, help-giving, and self-management. PSR efforts are progressively scaled up, drawing from lessons and making improvements.	Dunearn Secondary School
19	Embracing a Healthy Lifestyle and Strengthening Character Through Virtual Sports Challenge	The COVID-19 outbreak has seen a drastic change in the way teachers go about teaching & learning. With the implementation of safe management measures (SMMs), many of the sporting events in schools were cancelled as part of the safety measures. In Hong Wen School, the Sports Day and the Lower Primary Sports Day are 2 annual events whereby students would relish the opportunity to compete with one another in a series of relay races. Cheered by their parents and teachers, the fun	Hong Wen School

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		and joyous occasions were key highlights of their Primary school days. However, during the Covid pandemic, to avoid cancelling both events which involved mass gathering of students, the PE teachers innovated and came up with a Virtual Sports Challenge that allowed both events to be conducted online, without compromising the camaraderie and the sense of pride and belonging that competition brings.	
20	Alternative approaches in Baking Vocation for students with learning difficulties.	One of the key skills that needs to be mastered in order to produce high quality bake products is the rolling of a dough to even thickness. Baking teachers have observed that this fundamental skill posed a significant challenge, especially to students with special educational needs. Thus, this project explores five alternative approaches of rolling out bread, cookies and pastry dough to the required thickness evenly and effectively. The functional value of the five approaches focuses on what students can (vs. cannot) do and the problem solving process of matching their ability to the task, while appreciating their cognitive and motor challenges. From the results of this action research, we developed a jig that, when used with a typical rolling pin, would enable all individuals with cognitive-motor difficulties to be successful in the task.	Assumption Pathway School
21	Using e-Pedagogy to Enhance Student's Quality of Learning in Geographical Investigation	The project "Using e-Pedagogy to Enhance Student's Quality of Learning in Geographical Investigation" was conceptualised by a team of Geography teachers as a part of a Professional Learning Communities (PLC) Project in Deyi Secondary School. This was an ongoing project spanning across a year. The team wanted to explore how the affordance of e-Pedagogy such as ArcGIS and SLS can be used to enhance: - the teaching and of Geographical Investigation (GI) and - students' quality of learning in terms of student's spatial thinking and analysis. This e-pedagogical innovation uses ArcGIS to facilitate students' collaborative efforts to collect weather data from 4 identified locations from around the school (i.e. the futsal court, driveway, school field and quadrangle) and present the consolidated data on a base map of the school. This helped students in the spatial visualisation of data and to make sense of spatial patterns observed.	Deyi Secondary School

S/N	Title	Description	Presented by
22	Polarity Thinking as a Pedagogical Approach for CCE (Pre-University)	The project introduced Polarity Thinking (PT) as one of the key pedagogical approaches for the Pre-University Character and Citizenship Education (CCE) 2021 Curriculum. PT is a tool that helps individuals and organisations navigate issues and decisions from a "both-and" and not "either-or" perspective. In the context of CCE (Pre-University), it enables older adolescent students to grow in their capacity to navigate complexity in issues, decisions, and people. This is especially critical as issues are increasingly complex and the competencies to navigate polarities are necessary for the emerging young adult to make sense of the world they are in. From end-2020 to present, the project involved garnering buy-in for Polarity Thinking among relevant personnel in CCEB/GB and Pre-University CCE educator fraternity, followed by professional development of CCEB/GB specialists/officers, school Key Personnel and Specialised CCE teachers to build expertise in the fraternity. It is also incorporated within curriculum resources for CCE (Pre-University).	Student Development Curriculum Division
23	National Youth Environment Conference	The National Youth Environment Conference (NYEC) is a student initiative organised by students. Students take ownership in planning and organising the entire conference. With a strong focus on the environment, the conference brings about like-minded students who want to create a sustainable environment for the future. The NYEC adopts the format of a Model United Nations (MUN) Conference. By getting participants to role-play as delegates of assigned countries, the student participants actively discuss various environmental issues on a global scale. We also invite guest speakers to speak on related environmental issues. As delegates, they have to present their country's stance and protect their country's interest while collaborating with other delegates to come to common grounds and draft resolutions that the majority of the committee members can adopt. In the process, participants learn essential 21st-century competencies such as global awareness skills, critical thinking skills, communication skills, and collaboration skills.	Nan Hua High School
24	Learning and Leading Without Borders - Stepping Up and Stepping Out	The Covid-19 pandemic resulted in disruptions to learning experience. By stepping up ICT affordances and stepping out to establish learning network, Kranji redesigned learning experience and launched three broad initiatives: 1) Global Voice – Extending Learning Communities in Asia The school established new educational partners in Asia, for conference discussions and virtual school exchanges. This ensures continuity of 21CC outcomes when international travel is curbed. 2) Cyber Voice – Influencers in Cyber Wellness Our students act as agents of change by facilitating online training on Cyber Wellness. This is critical as COVID-19 accelerates the digitalisation of people's lives.	Kranji Secondary School

S/N	Title	Description	Presented by
		3) Champions for Sustainable Living A virtual package on the biodiversity in Kranji Marshes was developed to allow students to advocate for biodiversity conservation. The school, in partnership with ASEAN Studies Centre from the Institute of South East Asian Studies (ISEAS) and Republic Polytechnic, also created new learning platforms for our students.	
25	Effective Approaches for Contemporary Issues Discussion in Values-based Lessons	Minister Ong Ye Kung (2020) highlighted, as part of the refreshed Character and Citizenship Education (CCE) curriculum, that there is an increased emphasis on the teaching of moral values and contemporary issues to help students understand the complexities of our country and life. Well-structured Contemporary Issues Discussion (CID) in lessons develop young students' critical thinking skills as they deliberate on issues, develop reasoning skills for strong arguments and provide supporting evidence for their claims in CCE, Social Studies and language lessons. Using Circle of Viewpoints as a thinking routine tool and Paul's Wheel of Reasoning as a scaffolding structure, lessons were designed to guide students through inquiry, discussion, and problem-solving in CID. These lessons engage primary school students in collaborative learning as they reflect on their meaning-making experiences.	Wellington Primary School
26	Virtual Global Sustainability Development Programme (GSDP)	In collaboration with Gardens by the Bay and partner schools from ASEAN, China and South Africa, Canberra Primary School (CPS) spearheaded Global Sustainability Development Programme (GSDP) 2021. Programme objectives: • Enable pupils to know their national prides and global sustainability development in the countries from their partner schools; • Develop the ability to think critically, assess options and curate learning; • Provide opportunities for pupils to work together in ideating and creating solutions The innovative use of technology-enabled platforms allows pupils to connect, collaborate, celebrate and learn continuously. Learning is structured around the Design Thinking framework, which is a creative problem-solving process emphasizing on empathy. This is the first time CPS co-developed a virtual expedition with Gardens by the Bay. Pupils were able to: • Explore Gardens by the Bay virtually • Share their national prides • Brainstorm innovative solutions to sustainability issues and create artefacts • Celebrate learning through presentations of artefacts and cross-cultural sharing	Canberra Primary School

S/N	Title	Description	Presented by
27	Innovative and Sustainable Urban Farming	The Geography Unit introduced urban farming for students' Geographical Investigation project, framed within the larger context of food security in Singapore. The objectives of this project are to provide students with: i) hands-on experience in better understanding the innovative way of using technology to make Singapore less reliant on food imports. ii) a more engaging learning experience; and ii) an opportunity become active contributors to the community. This project is innovative because it departs from conventional topics (e.g TRF, traditional farming) used for GI and incorporates an element of service to the community; and adopts the Blended Learning (BL) approach. Additionally, the school was resourceful in optimizing existing resources for the set-up of the urban farm which resulted in cost-savings. Outcomes are positive - students experienced first-hand how technology can assist food production, and had a meaningful experience in directly contributing to the community.	Punggol Secondary School
28	The Road to Independence, 1945 to 1959 – Pushing the Frontier of Game Based Learning in the Sec 2 History Classroom	The staff of HYSS and JPJC collaborated to develop a History card game, 'The Road to Independence, 1945 – 1959'. This game was designed to elicit greater engagement and understanding from the students learning the topic of post-WWII events up until before Singapore's achievement of self-governance in the Secondary Two History syllabus. This topic is regarded by stakeholders to be dry and difficult to teach and learn. The mechanics and gameplay experience were specifically designed to help the players acquire and internalise the Knowledge and Skills (KS) as well as Values and Attitudes (VA) in the 2021 TLG for the topic in addition to internalising elements of National Education. Lessons designed by the teachers using the game for the Secondary Two Historical Investigation (HI) project were trialled in 2021. The results from the student survey were positive and encouraged Hua Yi Secondary to publish 9 sets using a professional printer for future use.	Hua Yi Secondary School