Session Code P11

Presenter(s)   : Choon Guoxiang Ernest (Subject Head, ICT)
                  Vasathakumari S Katamuthu (English Subject Anchor)
                  Zainab Abdullah (Teacher)

School   : White Sands Primary School

Title   : Improving Pupils Comprehension Skills through the use of Reciprocal Teaching as an
                  Instructional Intervention Guided by the Gradual Release Model

Subject Area   : English

Synopsis

The purpose of this action research is to help primary school pupils improve their ability to comprehend text through the explicit teaching of reading strategies within the instructional framework of Reciprocal Teaching.

The item analysis conducted during year end semestral assessment revealed that more pupils had the potential to improve in their open ended comprehension component more compared to other components. Of those who did not do well, many are good decoders of the written text. These pupils can decode a text or read the text aloud but had difficulty comprehending the text. This, according to Cummins (1979), expresses that pupils might seem to have a high degree of competency and fluency in their oral expression or speaking of the language while being engaged with their peers and teachers in a social setting but might not have develop the required specialized academic expression of the language through writing in the classroom setting.

One reason was their difficulty in understanding the text when answering comprehension questions. Although they recognized and understood words or phrases, they developed misconceptions when these words or phrases were stringed into sentences, thus hampering their proficiency to derive meaning from the text.

As such, the AR team views Reciprocal Teaching as a possible instructional strategy to enable pupils to overcome this challenge.

Session Code P12

Presenter(s)   : Angeline Nadia Lim (LT Maths)
                  Mrs Lee Kok Hong (MTT)

School   : Bedok Green Primary School
                  Academy of Singapore Teachers

Title   : Building Teachers Pedagogical Content Knowledge through Networked Learning

Subject Area   : Maths

Synopsis

Lesson Study is one of the modes for professional learning of teachers involved in Networked Learning Communities (NLCs) in Singapore. The intent of this sharing is to demonstrate how collaborative reflection and learning through Lesson Study impacts the pedagogical content knowledge (PCK) and beliefs of a group of primary and secondary mathematics teachers in NLCs. Through this network we gain deeper insights into the development of our PCK. We will share the learning gathered from pre and post conferences and lesson observations. We will also share the thinking behind designing each lesson to develop teachers' PCK. This is to ensure that we become effective classroom teachers; understanding students' learning behaviour and develop their mathematical concepts and skills. Besides sharing our learning experiences, participants will also engage in co-generative dialogue on how they could develop their PCK to enhance the teaching and learning process.

Session Code P13

Presenter(s)   : Lim Hong Eng
                  Neoh Wee Ling
                  Ouw Li Shan
                  Gwee Boon Tiong

School   : Bedok Green Primary School

Title   :切身环境与口语表达及思维锻炼的联系

Subject Area   :MTL

Synopsis

The teachers noticed that the students were unable to use suitable words to give in-depth description to oral pictures and in expressing their personal opinion. They were giving superficial descriptions with limited vocabulary. To address these problems, the teachers embarked on a Learning Circle project; seeking to develop the oracy skills of the students, and making the learning of CL fun and appealing. This project provided a structured approach to develop oracy skills to students in a wholesome way. The teachers felt that the most effective way to promote learning would be to base their class discussions on issues that were close to the students' hearts. Hence, the teachers went around taking photo shots of public places (e.g. the MRT stations), the sign boards and posters that appeared in these places. The photos were then made into teaching materials to be used in lessons to enrich students' vocabulary. The teachers also sourced for useful articles (e.g. not giving up the seat to a more needy person, littering) to be used as the class debate topics. Mini debate sessions were carried out during lessons to give the students the opportunities to express their personal opinions.
Last of all, the teachers gathered all resources and produced an oral booklet for all students.

Session Code P14

Presenter(s)   : Mohamed Izzat Mohamed Sarip
                  Thirunavukkarasu s/o Shanmugam

School   : Elias Park Primary School

Title   : Use of Collaborize classroom tool for teaching and learning of Malay Language

Subject Area   : Malay

Synopsis

Collaborize Classroom is a free, online learning platform for teachers and students to create structured discussions in a private online community. Students can expand on discussions as well as interact with online lesson plans that allow for deeper participation inside and outside the classroom.
The main aim of 'Collaborized Classroom' is to help streamline conversations and drive to specific learning outcomes with structured topic types. It also allows pupils to take a poll, hold a debate, post a practice test or let students support their arguments.
The platform also encourages student-driven projects and challenge-based learning. It also allows let your students be heard and support each other in dynamic conversations which include resources such as newspaper articles, videos of pupils acting out picture compositions and language assignments.
Teacher as facilitator is also able to show tangible outcomes of students' online participation to drive deeper discussions and activities in class. The platform allows teachers to easily gauge student understanding and use student-driven results to create new lessons and assignments via the use of data in the form of statistics and frequency of pupil's participation.

<u>Session Code P15</u>

Presenter(s)   : Mdm Nurizan Abdul Wahab (ST)
                Mr Mohammad Zahid Bin Rohmat
                Miss Lam Hui Zhen

School   : Bedok West Primary School

Title   : Uncovering P4 Pupils' Misconceptions on Heat Using Concept Cartoons

Subject Area   : Science

Synopsis

It was a project conducted by the P4 teachers to uncover misconceptions on Heat using Concept Cartoons. There were 3 Concept Cartoons created, testing on the concept of heat absorption by different coloured surfaces and on heat conductors and insulators. Each Concept Cartoon displayed a science-related problem and there were 3-4 characters who tried to solve the problem by applying scientific concepts. Only one character would have the right concept and pupils were asked to decide which character they thought was right. Pupils then proceeded to conduct experiments to solve the problem and find out if they had chosen the correct character.

<u>Session Code P16</u>

Presenter(s)   : Miss Pearl Lim (ST/ Maths)
                Mdm Joelyn Cheah (ST/ ICT)
                Miss Celia Lim (Teacher)
                Mr Patrick Lau (Teacher)

School   :Junyuan Primary School

Title   : **Inspiring Minds, Empowering Learners** – a Talent Development Programme for the
                development of 21st century competencies

Subject Area   :English

Synopsis

A school-based curriculum, Inspiring Minds, Engaging Learners, is designed by the research team for high progress pupils. It is anchored on a curriculum framework that centres on Teaching for Understanding (TfU) principles to deliver Howard Gardner's Five Minds. This research project attempts to establish the effectiveness of the school-based curriculum in developing pupils' competencies that is anchored on Howard Gardner's Five Minds for the Future – disciplined mind, synthesizing mind, creating mind, respectful mind and ethical mind. The project aims to develop 21st century competencies (21CC) as well as the talent of our pupils in the cognitive domain through the provision of enriched learning opportunities, thought-provoking lessons and stimulating tasks through collaborative learning, discussions, clarifications and presentations. TfU principles are used to create an environment where every pupil is able to learn actively from one another and make meaning out of what they see and hear. Technology is a prominent feature in the project and is used to support productive thinking, provide authentic learning contexts and facilitate collaborative learning.

<u>Session Code P17</u>

Presenter(s)   : Ms Tan Wei Wei (HOD of Character Development)
                 . Mdm Serene Chee
School   : Canossa Convent Primary School
Title   : Problem Solving
Subject Area   : Maths

Synopsis

The school's P4 teachers observed that pupils faced difficulties in solving word problem. They brainstormed on some possible challenges faced by pupils in this area. Interestingly, teachers found that they themselves had different approaches when it came to the solving of word problems. Hence, they wondered if there could be some routine thinking structure or strategies to help the pupils.

The teachers then embarked on the designing of a lesson incorporating Lester's (1983) design of three phases, the problem presentation phase, the solution phase and the solution discussion phase and Polya's (1971) approach of See, Plan, Do and Check. Both were researched-based approaches found to be effective in the teaching of problem solving skills. The teachers also made use of an instructional approach recommended by Fisher in their design of the lesson.

The research lesson surfaced interesting discovery such as how pupils were not consciously thinking about their thinking and how pupils had made misleading assumptions, etc. The sharing will allow us to share what we have learnt from the research lessons conducted and provide some strategies for thought in the improvement of pupils' problem solving skills.

<u>Session Code S11</u>

Presenter(s)   : Masturah Abdul Aziz,
                  Tan Yen Chuan
                 Jarina Peer

School   : Raffles Girls' School

Title   : Teachers and Practitioner Inquiry: The Benefits and Challenges

Subject Area   : General

Synopsis

This research is about the motivational factors of teachers embarking on Practitioner Inquiry (PI) and their challenges faced. The school in this study seeks to support the Reflective Practitioner through an in-house research ecosystem that provides targeted support for teachers' inquiry into their practices. The goal is to create a supple theory-practice nexus in research where teachers illuminate their own practices through active review and discourse as well as participate in the educational fraternity as informed practitioners. Focus group interviews were conducted with teachers who have embarked on Practitioner Inquiry. The data sheds light on the motivations and challenges faced within this ecosystem, enabling further refinements to it. This research therefore, offers an insight into the value of Reflective Practice for enhanced student learning. It also emphasizes the empowerment of teachers as strategic thinkers who gain greater understanding not only of their content area but also of their professional selves and the students they teach. Organizations interested in creating their own research ecosystem can apply this information to their context.

Session Code S12

Presenter(s)   : Hang SiÉn & Hong Kam Kheun (Teacher)

School   : Changkat Changi Sec

Title   : Teaching of Acids and Bases using IBL & ICT Inquiry Based Learning for 3NAs: A Sound Idea

Subject Area   : Science

Synopsis

Teaching of Acids and Bases using IBL: The research project is to study the effectiveness of IBL-5E Model approach to engage students in learning the chapter of Acids Bases. The lesson adopted the 5E model using the Inquiry-Based Learning (IBL) approach and made use of the newly acquired iPad minis to craft ICT-infused laboratory lessons which aimed to enhance the engagement level of our students in the learning of Chemistry laboratory practical skills.

ICT Inquiry Based Learning for 3NAs: A Sound Idea: The research project is to study the effectiveness of IBL-5E Model approach to engage Normal Academic students in learning physics. The IBL lesson consists of a few hands-on experiments in which students carry out the given instructions, make observations and key in their conclusions in googledocs using a notebook. The students are divided into groups of 4 to encourage collaborative learning (CoL). The topic chosen was SOUND (How is sound produced) as it is quite a 'dry' and uninteresting topic when presented in a teacher-talk approach. With an IBL approach, students have the opportunity to explore, observe and then discuss their findings. A pre-test and post-test was conducted to determine the effectiveness of the students' learning while an Engagement Survey was done to evaluate the level of engagement of the students in the lesson.

Session Code S13

Presenter(s)   : Perema d/o Ramasamy

School   : Changkat Changi Secondary School

Title   : Enhancing Writing skills through Cognitive Learning Strategies.

Subject Area   : MTL

Synopsis

This study examines the learning difficulties of secondary students taking Tamil as a Mother Tongue based on the four functions of language learning and how language learning strategy introduced in classroom teaching help to overcome these difficulties.
For this study, Cognitive learning strategies were identified as the strategy most used by these students. Thus, this learning strategy was introduced in classroom teaching in order to overcome their learning difficulties. As a result, classroom activities using Cognitive strategies were carried out. These activities not only engaged the student in their learning, it further enabled them to enhance in their writing skills. In this study, a pre-test and post-test was also conducted to determine the effectiveness of the students' learning.
Finally by engaging students in their learning, it motivates them to learn further on their own and to build better and deeper understanding of subject knowledge & skills.

Session Code S14

Presenter(s)   : Woo Ching Nee Christine
                     Tan Pei Lin Jasmine
                     Teo Tan Li Jaclyn

School   : Chung Cheng High School (Main)

Title   : The Improved Method: Enhancing mathematical learning among low-performing students.

Subject Area   : Maths

Synopsis

Low-performing students faced difficulty not just in understanding concepts but also applying them to solve a wide variety of problems. It was observed that these students have weak metacognition skills which could be a contributing factor in their passiveness towards learning. They also have weak mathematics problem solving skills. Though teachers have 'deliberately' modelled these skills through 'thinking aloud', these low-performing students may need more opportunities to practise. However given the 1: 40 teacher-student ratio in most classrooms, adequate support becomes a challenge. A possible solution is through collaboration among students where activities are structured to heighten thinking skills and promote meaningful discussions. One such instructional method is The IMPROVE method by Mevarech Z.R. & Kramarski b. The IMPROVE method consist of three main characteristics: Strategy acquisition and metacognitive process, learning teams with different prior knowledge and provision of feedback – immediate feedback. While the IMPROVE method was original meant to be implemented in daily teaching, the team tweeted the method to be used as a form of remediation.

Session Code S15

Presenter(s)   : Tay Su-Hui Fiona
                     Premani Minashi Logaraj

School   : Damai Secondary School

Title   : Monotonous No More: Developing Confidence in Oracy through Storytelling

Subject Area   : English

Synopsis

While students have interesting and impassioned opinions, they hesitated in expressing them. As the language of choice for conversations veered away from English with the changing racial profile in the classrooms, the situation worsened with many students having difficulty articulating their thoughts in Standard English. Recognizing oracy as a critical 21st century competency, the EL department embarked on Storytelling to provide students with increased, focused and content-enriched opportunities to speak with confidence and ease in front of the class. Thus, the department set out with a research project which involved morphing Damai's Project Storytelling (pilot) to the use of monologues centering on the *Holocaust*. As part of the development process, students were presented with a scenario and worked in groups for enhanced collaboration and self-directed learning while researching and drafting their monologues. A set of rubrics was provided so students were aware of the success criteria. Groups delivered a final presentation of their monologues and a perception survey was administered pre-test and post-test to measure their confidence level in speaking in front of an audience.

<u>Session Code J11</u>

Presenter(s)   : Ali Sharif Arshad
                  Jaclyn Cheng Lin Lin
                  Oon Yongfu

School   : Tampines Junior College

Title   : The use of ICT to enhance the teaching of Historical Argumentation via the mode of Lesson Study

Subject Area   : Humanities

Synopsis

The research seeks to examine the effect of ICT on student participation and their ability to present complete and well-supported historical arguments. What began as a preliminary experiment that made use of Facebook Groups and Glogster with a class of H2 students in 2012 has since been modified to include an additional H1 class into our research scope.

This has provided an opportunity to compare and contrast the effect of ICT on H2 classes across both years, but also to compare and contrast its effect across different groups of students within the same year.

The research has thrown up interesting results that confirm some commonly held perceptions about the effect of ICT on students, while refuting some commonly held misperceptions as well. Simultaneously, it has also thrown up some questions that future researchers would do well to consider. The research has been in two cycles over the period of two years.