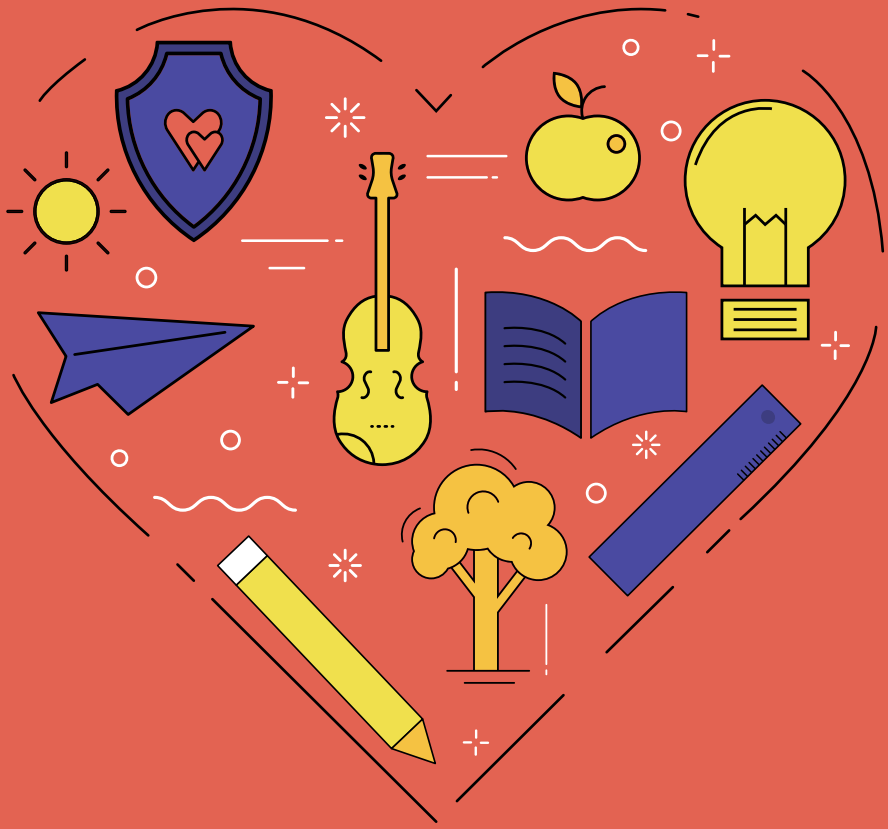
PRESIDENT'S AWARD FOR TEACHERS 2019



Teach To Inspire
Inspire To Teach

STORIES OF FINALISTS

TEACH TO INSPIRE
INSPIRE TO TEACH

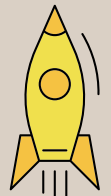
Teaching is seldom a one-way act, or a one-hit wonder. Teaching is a complex melding of interacting, understanding and guiding. At the heart of it, teaching is an act of service which benefits and improves the lives of others. The cover represents the many roles that teachers play, and the professional belief that guides them as they journey with the many under their care.

Academy of Singapore Teachers
lead. care. inspire.

FOREWORD

Teachers nurture students to be successful individuals and responsible citizens. But as our world changes, and our country and society evolve, our definition of success has been different too.

In life, success is less focused on material attainments, than being able to contribute to society and achieve a good state of well-being. Likewise, in school, we do not want to over-emphasise academic success but recognise the diverse potentials in our students. We want to bring about a greater joy of learning so that our students continue to want to learn even after they have left school.



The 16th issue of *Teach to Inspire, Inspire to Teach* weaves a tapestry of inspiring stories of teachers who are role models of the profession. They have transformed lives by putting students at the centre of their work and they embody the spirit of lifelong learning. In their work, they have partnered with various stakeholders and tapped into the network of practitioners for ideas and support. The dedication that these educators demonstrate stems from their passion and professional belief in developing our nation's future.

I thank them and many other unsung heroes, for believing in and being part of this meaningful vocation.

Congratulations to the recipients and finalists of the President's Award for Teachers 2019. May these uplifting stories be the motivation for many others who are in the position of touching lives and shaping the future.

Lead. Care. Inspire.

Mr. Ong Ye Kung
Minister for Education

PRESIDENT'S AWARD FOR TEACHERS

The President's Award for Teachers was introduced in 1998 to recognise excellent teachers for their role in moulding the future of our nation. The Award is conferred by the President of the Republic of Singapore during the Teachers' Day Reception at the Istana.

These teachers inspire their students and peers, through their words and deeds. Since its inception, 99 outstanding teachers, including this year's recipients, have been recognised. They are caring and nurturing, dedicated to the holistic development of their students. Committed to developing their students to the fullest potential, they are passionate in adopting innovative approaches in their lessons. These teachers are also life-long learners and mentors to their peers.

These teachers are role models that exemplify the Ethos of the Teaching Profession.

PRESIDENT'S AWARD FOR TEACHERS

RECIPIENTS 2019

FROM LEFT TO RIGHT:

Back Row

Syam Lal s/o Sadanandan
Bukit Batok Secondary School

Sarah Koh Hui Khoon
Holy Innocents' Primary School

Siu Yee Nar Ella
Republic Polytechnic

Mohamed Azhar Bin Mohamed Noor
Innova Primary School

Front Row

Chew Ansheng Victor
Rosyth School

Koh Noi Sian
Nanyang Polytechnic

Lim En-rui, Joel
Fairfield Methodist School (Primary)

PRESIDENT'S AWARD FOR TEACHERS

FINALISTS 2019

GENERAL EDUCATION

FROM LEFT TO RIGHT:

Back Row

David Kelvin Vaithilingam
Meridian Secondary School

Lim En-rui, Joel
Fairfield Methodist School (Primary)

Mohamed Azhar Bin Mohamed Noor
Innova Primary School

Liu Kah Yang
Bartley Secondary School

Chew Ansheng Victor
Rosyth School

Teo Yee Ming
Hai Sing Catholic School

Front Row

Sarah Koh Hui Khoon
Holy Innocents' Primary School

Syam Lal s/o Sadanandan
Bukit Batok Secondary School

Hing Mui Hong
Keming Primary School

Lee Teck Miang
Evergreen Secondary School

PRESIDENT'S AWARD FOR TEACHERS

FINALISTS 2019

POST-SECONDARY EDUCATION INSTITUITIONS

FROM LEFT TO RIGHT:

Back Row

Steven Ng
Temasek Polytechnic

Janaki Hemant Shah
Republic Polytechnic

Tang Sheue Yin Mae
Institute of Technical Education
- College East

Ho Sum Lim
Singapore Polytechnic

Front Row

Koh Noi Sian
Nanyang Polytechnic

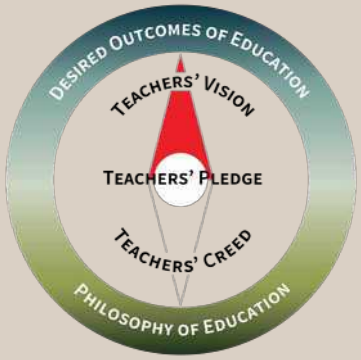
Siu Yee Nar Ella
Republic Polytechnic

SINGAPORE EDUCATORS' PHILOSOPHY OF EDUCATION

Ethos of the Teaching Profession

The Ethos is expressed in Our Singapore Educators' Philosophy of Education, the Teachers' Vision, the Teachers' Pledge, the Teachers' Creed and the Desired Outcomes of Education. Each of the above is an important facet of an integrated Ethos of the Teaching Profession.

The compass has been chosen to depict the facets of the Ethos of the Teaching Profession. Pointing to the true north, it symbolises the constancy of values in the lives of educators. New entrants to the profession are presented with a compass at the Teachers' Compass Ceremony.



Our Singapore Educators' Philosophy of Education captures the core beliefs and tenets of the teaching profession and serves as the foundation of teachers' professional practice.
The Desired Outcomes of Education establishes a common purpose for the teaching fraternity, guiding educational and school policies, programmes and practices.
The Teachers' Vision articulates the aspirations and roles of the teaching profession, helping teachers to focus on what to do in pursuit of professional excellence.
The Teachers' Pledge constitutes an act of public undertaking that each teacher takes to uphold the highest standards in professional practice.
The Teachers' Creed codifies the practices of retired and present educators and makes explicit their tacit beliefs. It provides a guide for teachers to fulfil our responsibilities and obligations, and to honour the promise of attaining professional excellence.

Teachers' Vision

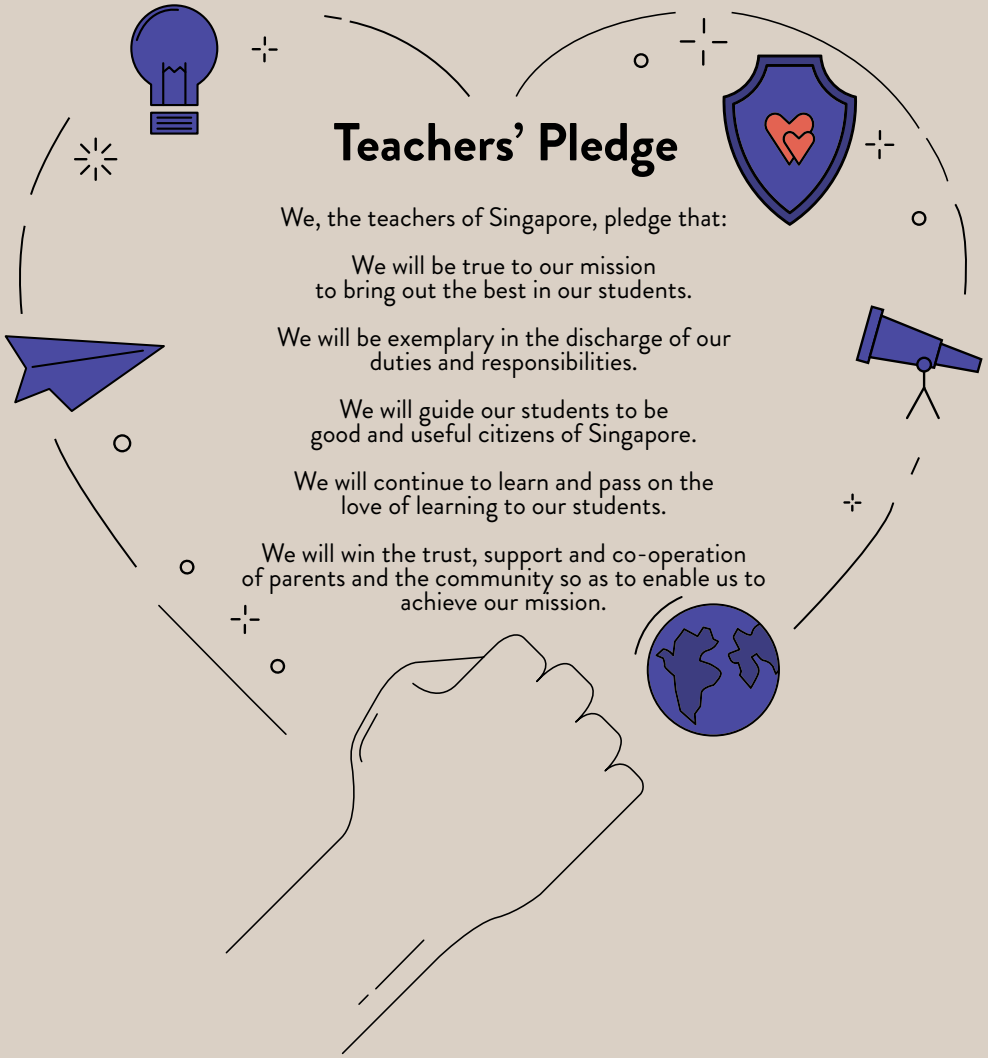
Singapore Teachers:
Lead • Care • Inspire

By word and deed, through the care we give, we touch the lives of our students. We make a difference - leading and inspiring our students to believe in themselves and to be the best they can be.

As individuals and as a community of professionals, we seek continually to deepen our expertise. Respectful of fellow educators, we collaborate to build a strong fraternity, taking pride in our work and profession.

We forge trusting partnerships with families and the community for the growth and well-being of each student.

We Lead, Care, Inspire,
for the Future of the Nation Passes
through Our Hands.



Teachers' Pledge

We, the teachers of Singapore, pledge that:

We will be true to our mission
to bring out the best in our students.

We will be exemplary in the discharge of our
duties and responsibilities.

We will guide our students to be
good and useful citizens of Singapore.

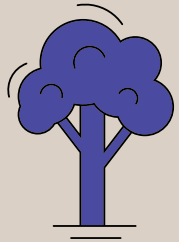
We will continue to learn and pass on the
love of learning to our students.

We will win the trust, support and co-operation
of parents and the community so as to enable us to
achieve our mission.

Desired Outcomes of Education

The Desired Outcomes of Education are attributes that educators aspire for every Singaporean to have by the completion of his formal education. These outcomes establish a common purpose for educators, drive our policies and programmes, and allow us to determine how well our education system is doing.

The person who is schooled in the Singapore Education system embodies the Desired Outcomes of Education. He has a good sense of self-awareness, a sound moral compass, and the necessary skills and knowledge to take on challenges of the future. He is responsible to his family, community and nation. He appreciates the beauty of the world around him, possesses a healthy mind and body, and has a zest for life. In sum, he is



- **a confident person** who has a strong sense of right and wrong, is adaptable and resilient, knows himself, is discerning in judgment, thinks independently and critically, and communicates effectively;

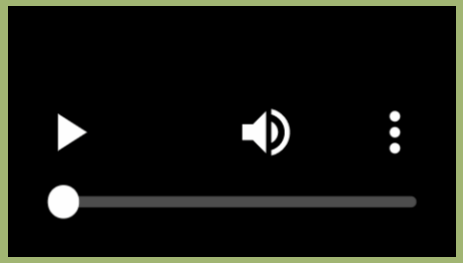
- **a self-directed** learner who takes responsibility for his own learning, who questions, reflects and perseveres in the pursuit of learning;

- **an active contributor** who is able to work effectively in teams, exercises initiative, takes calculated risks, is innovative and strives for excellence; and

- **a concerned citizen** who is rooted to Singapore, has a strong civic consciousness, is informed, and takes an active role in bettering the lives of others around him.

To Make Kids Love Maths, Spark Joy

Joel Lim's Maths classes feature drones, puzzles and teddy bears – teaching tools to help students discover much more than answers to sums.



Mr Lim En-rui, Joel
Lead Teacher (Mathematics)
Fairfield Methodist School (Primary)

Mr Lim is a fun, friendly and caring teacher. During Maths lessons, we do a lot of games and activities. Mr Lim likes to break up his lessons. After 30 minutes of lessons, he will add in a small game to give us a break.

– Daniel Chua, Primary Six

The Primary 5 students of Fairfield Methodist School (Primary) have been given a task — they need to measure the height of a flagpole in the assembly area. Their tools? A protractor, a bubble tea straw, a tape measure and a trundle wheel to measure distance on the ground. Oh, and a teddy bear.

This is how Joel Lim, Lead Teacher (Mathematics) at Fairfield Methodist School (Primary), makes geometry fun and engaging.

To estimate the height of a flagpole, the students first construct a makeshift clinometer, a tool used to measure the angle of elevation or slope. They attach the straw to the straight edge of the protractor and hang the soft toy from the centre of the protractor. The straw enables them to direct their gaze to the top of the flagpole while the teddy bear hangs straight down and acts as a plumb bob so they can determine the angle of the straw relative to the ground.

Joel does not explain to the students how to go about using the clinometer to get the height of the flagpole. Instead, he gets the groups in the class to discuss how to do it after they've studied the properties of different triangles. (Hint: Estimating the height involves viewing the flagpole from a 45-degree angle.)

One important part of the lesson is being outside the classroom to figure out the heights of tall objects like flagpoles and basketball hoops. "The whole idea of problem-solving outside the classroom is to make Mathematics come alive," says Joel, a 13-year veteran of the teaching profession. "This encourages them to make use of what they learn in class in the world outside."

However, the discussions that take place before the students are sent outside are also vital. Joel wants all the students to be involved in uncovering the solution. And to do so, he makes sure that no answers are shot down. "No answer is a bad answer," he says. "The moment you try, I will take it and embrace it." Everything that comes out of a student is important, he believes.

DISCOURSE IS CRITICAL TO LEARNING

He provides a psychologically safe learning environment so that the students are not afraid to fail and gives them an incentive to contribute to the discourse. That discourse, he says, is vital to learning. "If you have very strong discourse, you don't have to write anything down," says Joel, who has been a Lead Teacher for three years.

A good teacher, he says, will explain a concept. A very good teacher can explain that concept clearly. But a truly excellent teacher will guide learners to discover the concept for themselves. That is when the knowledge truly sinks in.

Joel's job is to facilitate the students to get to the "aha" moment, he says. "That's when it shifts from a very good lesson to an amazing lesson. That meaning-making, that sense of achievement is so strong, it's etched into them. I want them to achieve joy."

At the heart of his pedagogical approach is inquiry-based learning and problem-based learning. With inquiry-based learning, students are encouraged to explore materials, ask questions and share ideas. With problem-based learning, students learn through solving an open-ended problem. The exercise to find the height of the flagpole is an example that combines both pedagogies. Trying to determine the height of tall objects is a problem that they have to solve and students learn basic principles of Mathematics by trying to solve this problem. Along the way, students are encouraged to ask questions, to experiment and learn by trial and error and have productive failures.

PUZZLES TO HOOK STUDENTS

All these approaches are pointless, however, if students are resistant. That is why Joel thinks that "sparking joy is the most important way to reach kids".

To spark joy, Joel will use all kinds of tools: stories, puzzles, toys and scenarios. He is an avid board game player and collector and that inspires him to create puzzles to engage students. He devises escape rooms that have Maths puzzles to be solved. He also gets his students to work on Maths puzzles weekly. At the start of the week, Maths puzzles are given out, and at the end of the week, the class discusses the solutions presented. Joel then gives out prizes for effort and ingenuity. These puzzles do not test questions in the syllabus but test creativity and logical thinking. One question, for example, requires students to add in the right operators in the following sequence:

1 _ 1 _ 1 = 6
2 _ 2 _ 2 = 6
3 _ 3 _ 3 = 6

all the way to

9 _ 9 _ 9 = 6

He takes students out of the classroom so they can look at nature and architecture to learn about the Golden Ratio and the Fibonacci Sequence. In the classroom, he uses high-tech toys like mini quadcopters to promote higher order thinking (What is the mass of a drone? What is the mass of the drone as it hovers?) However, not everything has to be high-tech – M&Ms are used to teach ratio while plasticine cakes demonstrate fractions at work.

FINDING THE BALANCE BETWEEN BEING TOO EASY AND TOO DIFFICULT

Getting the students hooked is the first step. The next challenge is to motivate them, which involves calibrating the lessons carefully. "Students don't learn if they are given something that is too difficult," he notes. "But they also don't learn if they are not challenged enough."

He creates opportunities for early success that builds up their confidence and then he ramps up the difficulty level. Not building up confidence is the reason a lot of students end up fearing Maths.

In addition, he welcomes failure. "I want the students to try. It's better to try and find out it doesn't work than to treat failure as bad." The end goal is not to be satisfied with failure though, but to use it as a stepping stone to success.

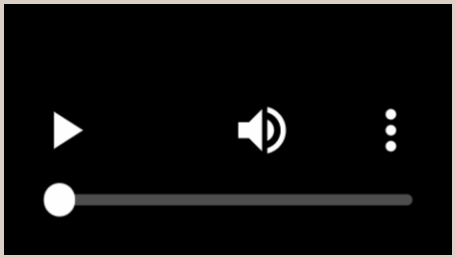
For Joel, these principles aren't merely to help the students master Mathematics; it's to help them with their lives.

"The goal is not covering the curriculum. This is a vehicle to teach them more important things - to enjoy learning and to persevere despite roadblocks."

"I use Mathematics as a vehicle to help them believe in themselves," says Joel. "If I just go in to help them prepare for an exam, I feel I'm losing a great part of their potential."

In Tune with the World

What you learn through music can be applied to your work or to understanding people and cultures, says Sarah Koh. It's much more than learning to play an instrument.



Mdm Sarah Koh Hui Khoon
Head of Department
(Special Assistance Plan)
Holy Innocents' Primary School

"I've known Ms Sarah since Primary 1, when I joined the Young Musicians' Programme in 2014. In her class, we learn all sorts of instruments; she will teach us what she feels we are interested in. It's not just how to play an instrument, but the actual feeling of it and the meaning behind it."

– Vanessa Tan, Primary Six

"What is an 'A'? If a child can sing well, but can't play an instrument, is that an 'A'?"

This is a question that led Sarah Koh, Head of Aesthetics and Special Assistance Plan (SAP), to introduce a system of tracking the formative progress of every student in the class of her school.

"Every student has something he or she can be good at," Sarah says. So, she captures each child's acquired musical competencies at their current level of attainment and considers the degree of teacher-invention needed for the child to progress.

"Teachers must have sharp observation skills. As a subject specialist, you must know what your students are able to do now, what they are not able to do yet and who amongst your students are of a certain level of proficiency, and who are not at this moment."

"I don't see this as 'grading'. It's observation of a student's formative progress in learning. There is never a day where I'm walking around with a clipboard and simply checking off a list."

Sarah's motivations stem from her experience of taking private piano lessons as a child. "My teacher was just preparing me to do well in exams," she says. "I enjoyed watching and aspiring to play like others, but I didn't like being taught specifically to pass exams."

Fortunately, Sarah's childhood experiences did not snuff out her passion for music, nor deter her from becoming a certified classical singer, pianist and handbell performer. Believing it is important for a music teacher to continue honing one's craft, she is also an active handbell ringer who performs with a professional ensemble.

"I want my students to do their best, enjoy themselves and not worry about what they cannot achieve yet. I want to help them make meaning of my lessons," Sarah says, "because that is what will inspire students to learn more."

MUSIC FOR ALL

In 2011, Sarah pioneered the Young Musicians' Programme in her school. This programme offers lower primary students the chance to experience playing Chinese

orchestral instruments from an early age. Many of Sarah's students have achieved graded proficiency in their respective instruments, having first picked up the instruments through the programme.

Sarah also decided to switch from teaching the Western recorder to getting all Primary 3 students to learn the erhu, in line with the SAP's goal of fuelling an appreciation of arts and culture. In Primary 4, students start to learn the bells and hand-chimes and in the upper primary, the inclusion of the ukulele and ethnic percussions.

Whatever the instrument, the instructional approach is the same.

"We introduce music that will not just make one or two pupils shine as solo players," Sarah says. "We try to ensure that an entire class is required to perform one piece of music, so students will understand their role in an ensemble.

We make sure there's something for everybody and that nobody is left out."

This applies to students with special needs as well, some of whom may have challenges performing as part of a group.

"If [these students] have trouble with pitch, we place them within a 'wall of singers' – this helps them to hear the 'right' sounds and make moderations to match the pitches accordingly," she says. "I once had a student with autism who had difficulty speaking and sitting still. I brought out a xylophone. She surprised everyone in the Primary One class by being the only student who could play the notes with a steady pulse."

"Her face lit up when everyone clapped for her."

IT BEGINS WITH A TEACHER

As a child, Sarah looked forward to music lessons in school. "I had a teacher who could sing beautifully," Sarah says. "It made me look up to her. For her to be so passionate about music and singing, it made me want to have the passion she had."

Her ambition to become a teacher was initially dismissed by her mother, who pointed out to Sarah that she was too impatient to teach others. Today, no doubt having developed the requisite patience along with other pedagogical skills, Sarah is entering her 17th year of teaching.

Sarah's desire to be a teacher was ignited while tutoring kids during her polytechnic days. She was studying business and human resource. Her students came from various family backgrounds, including some from single-parent homes.

"I felt that, besides the academic exercises I had them do, the more I talked and related to the children, the better their results would be. I realised they needed someone to talk to, to listen to them and also help them feel that they are learning within a safe space, free from judgement," she says.

"That's when I began to think, 'Maybe, I should become a teacher'."

Her philosophy remains the same today. She spends time speaking to her students, getting to know them better, and sharing her own life experiences.

"To those who feel deeply about music, I ask them where they see themselves with an instrument – regardless their desire or non-desire to become a musician," she says. "When I share my own learning experiences, it helps me establish that connection which makes me a lot more relatable to my students."

Sarah sees her role going beyond teaching music as a subject, to helping her students make the connection between the arts and other aspects of learning.

Adopting an integrated arts approach means that Sarah's upper primary students study different countries across the globe, learning not only about art and music, but also about culture and perspectives. This helps students get "a sense of the world" and broadens their horizons.

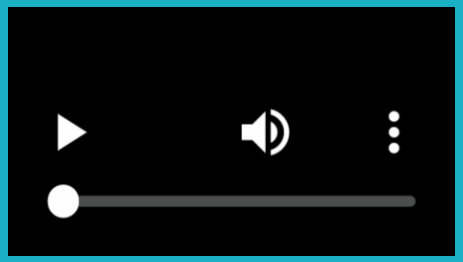
She also organises cultural immersion trips. These international experiences have taken students to Taiwan and China, where they have learned about the Chinese language, culture and the rich artistic tapestry of the Chinese diaspora.

"My belief is in providing opportunities to the students. Every child should have the chance to be exposed to art and music. Broadening their experiences enables us to help them make the connection between the arts and other aspects of learning."

"I tell them my job is to be a catalyst for their passion. They can take this passion and apply it to learning an instrument or to other aspects of work and play, to understanding people, and most of all, to embrace that joy that comes from learning for life."

Biology Meets Pop Culture

Pokémon hunting, island adventures, car races... Science teacher Mohamed Azhar Bin Mohamed Noor says, "Children may not remember the text, but they remember activities."



Mr Mohamed Azhar Bin Mohamed Noor
Head of Department (Science)
Innova Primary School

"Mr Azhar can answer any Science question you ask him. He doesn't have to check. He also explains things in a simple way – Science becomes a very interesting subject because everything around us is related to Science! "

– Billah Izzah Bahirah Bte Mohammad Noor, Primary Six

Adaptation — the process by which animals evolve in particular ways in response to the environment — is an important scientific concept. But how do you teach this concept to a class of primary school students? Mohamed Azhar Bin Mohamed Noor decided to send his students on a Pokémon hunt.

"I could have dished out a textbook example of eagles having sharp beaks that allow them to rip out the flesh of their prey," says Azhar, who is Head of Department (Science) at Innova Primary School. But would the children remember or connect with that?

Instead, he got his class to draw Pokémon characters with different characteristics. He then hid the drawings around the school and challenged the students to find them.

To win, however, his students had to not only find the characters, they had to identify the character's important feature and function. They would point out to Azhar, for instance, that a particular creature is able to move easily in water, thanks to its streamlined body.

Activities like that help children learn better, says Azhar. "Children may not remember the text or the things you say. But they can always remember the activities and how you made them feel. Those things will stick with the children."

SCIENCE THROUGH STORIES

The activities that Azhar plans are inspired by everyday life. Chinese drama serials, for example, inspired him to teach basic Science concepts through storytelling.

When Azhar was a student, he would come home from school and the only thing on TV would be the Channel 8 drama serials. He realised that because it was a story made up of connected episodes, it hooked the viewer and made them want to continue watching.

"So, I thought, if concepts are taught like television episodes, connected by a story, children would not want to miss a lesson."

He came up with the story of a boy who is lost at sea and separated from his parents. The boy wakes up and finds himself alone on an island.

Over the course of a year, the boy goes through different adventures in his quest to leave the island. And through these adventures, which Azhar scripted, the children are introduced to the topics in the Primary 3 syllabus such as living and non-living things, how to classify plants and animals, and bacteria and fungi.

As part of the experience, students also explore the school in search for the different plants and animals mentioned in the story.

HANDS-ON LEARNING

Another experience that he designed for his students was inspired by the idea of a 'sail car' that he saw while on a course in New Zealand. The sail car was a big box with a sail and wheels, large enough for an adult to sit in it and steer. Azhar adapted the idea to teach his students about wind as a renewable source of energy. His version was folded papers on wheels powered by students blowing at it.

This idea grew into an inter-school competition, where a total of 25 students from five schools got to race their 'sail cars' along the length of a badminton court.

Not every lesson requires leaving the classroom though. To bring home the idea how water goes from a solid to a liquid and then to a gaseous state, Azhar devised a game using hand movements that represented freezing, melting, evaporation and condensation. The students then call out the process demonstrated by Azhar through his hand gestures.

This game became so popular that other teachers approached Azhar to find out more, and students were spotted doing the movements as they answered questions during a class test.

Azhar believes that experiential learning is very powerful. This is something he draws from his own childhood. As a young boy, he would invariably take his toys apart to see how they worked.

This mechanical inclination was perhaps something he got from his father, who worked as a technician at the Public Utilities Board. Azhar's father had little formal education, and had learned to use machinery purely through hands-on learning.

SCIENCE MEETS ART

Azhar was all prepared to become a mechanical engineer until he did a stint as a relief teacher in a primary school before starting his undergraduate degree at the National University of Singapore.

This sparked a love of teaching and he enrolled at the National Institute of Education to prepare to become a teacher after he completed his engineering degree.

His subject proficiency in Art and his aesthetic skills have come in handy at Innova Primary School. When he first joined the school, he roped in his NIE lecturer and some of her students to paint murals on the walls outside the Science labs, showing animals that live in mangroves. These murals continue to be used today – students go to the walls to look for the animals in the story of the boy lost on the island.

A SENSE OF IDENTITY

As the Head of Department, Azhar's philosophy in developing teachers under his charge is to nurture a sense of identity as 'Science teachers'.

"When you have this sense of identity, when you are proud of being a Science teacher, you will want to do more. Work becomes play. It becomes a passion."

He encourages other teachers to share their opinions freely as he believes that sharing "accelerates the learning process for everybody, and the people who benefit are our students". He propounds the same message as the team leader for the learning community, which comprises Science Heads of Department from other schools.

"We are all craftsmen," says Azhar. "We can only learn from each other on how to get better."

"You begin as an apprentice. When you get better tools, acquire better techniques, you become an accomplished craftsman. Then you have this obligation to share it with others so that this craft passes on."

Teaching is not just any ordinary craft though, adds Azhar. "It is the most wonderful craft you can ever be involved in, because you are trying to shape and inspire young minds."

Real-life Lessons

Why learn this? Whether he is teaching Chinese or coding, Victor Chew thinks it's important to answer that question.

Mr Chew Ansheng, Victor
Head of Department
(Information and
Communication Technology)
Rosyth School

"Mr Chew was very friendly to my class. He talked to us, to try to understand and relate to us. I become more motivated and put in more effort when I see a teacher like him trying his best to help me."

– Charlotte Chiang, Primary Six

Victor Chew's Chinese classes are full of games, jokes and even Mandarin pop songs.

In designing his lessons, he was taking a leaf out of his own experience in learning Chinese, remembering how he had preferred to learn the language by understanding its application rather than through repetitive exercises.

"I had my ups and downs studying Chinese in primary school, and only put more effort into learning the language in secondary school," Victor says. "When I was asked to teach Chinese, I thought, 'Maybe I can breathe fresh life into [learning] this language, perhaps I can better understand students who struggle'."

BREATHING FRESH LIFE INTO CHINESE

In his early days, Victor found it challenging to enthuse students. "Chinese is a living language, for them to speak and apply in everyday life. I realised I had to be more proactive in engaging them, creating scenarios, using a gamified approach and facilitating group work.

That's when the results started to show," Victor says. "I saw the students becoming more motivated to learn the language. Every day that my students step into class, my hope is for them to have a fun learning experience."

DISCOVERING HIS INTERESTS AND PASSIONS

A decade ago, Victor found himself at a crossroads. Armed with a degree in computing and working as a coder for a tech company, he was having second thoughts.

He thought about his four years of university and what he cherished most from that time was spending three days every week volunteering with children from less privileged families, including those with special needs and some in hospice care.

"That was more satisfying than my job at the time. I decided that I wanted to do something that could impact lives."

Another memory prompted his career switch to teaching.

"In primary school, I was mischievous and didn't do my homework," he says. "My new form teacher in Primary 5 told me, 'I don't care what other teachers say about you. I want you to start afresh, from today onwards'."

By offering to wipe the slate clean and show confidence in Victor, she left a lasting impression.

At every point, Victor makes an effort to connect with his students – whether in his Chinese and ICT lessons or during recess.

"I make it a point that we don't just talk about what's happening in class. We also talk about the things the students like or what's happening at home," he says.

Victor once had a student who had been throwing tantrums in class. After speaking to him, he found out that the student's mother was going for an operation, and that his behaviour was likely related to anxiety.

"I told him it's okay to worry and feel concerned, but not okay to misbehave in class," he says. "He was soon back to his normal self. It's important for teachers to let the students know we care for them."

MOTIVATING STUDENTS TO BUILD ON THEIR KNOWLEDGE

In engaging and motivating students, Victor always helps them see the 'why' behind the learning. Again, in a fun way.

He piloted the Roszania programme for Primary 3 and 4 students, which was inspired by the Kidzania career role-playing theme park.

"Sometimes, students cannot relate what they are learning to real life. So we try to bridge that gap and help students discover their interests and passions," says Victor.

Students get "passports" that contain various activities, based on a list of job roles such as astronomer, designer, statistician, engineer, ambassador and coder. In finding out more about the professions that interest them and doing activities, students collect stamps in their passports, which they can then exchange for achievement badges.

A similar philosophy pervades Victor's cyber wellness and ICT-based learning programmes in school.

Students in the school's computer enrichment programme learn coding and work with mini computers such as Micro Bits to develop prototypes to solve real-life problems. They also present these inventions at maker fairs or industry events.

The inventions include Don't Hit Me, an accident-prevention system intended to warn both pedestrians, especially the elderly, and drivers, and Pigeon Chaser, a pest-control device that sounds an alarm if it detects pigeons visiting an eating place - a solution originally intended to work in the school canteen.

"This year, we are having all the Primary 5 students do a Micro Bit project. But we don't teach tech and coding in isolation - they are actually tied to the Math curriculum," says Victor. "We also hope our students don't just learn and become consumers of tech, but actually become creators who use their skills productively."

In fact, through its School Advisory Committee, the school is seeking industrial partners to fine-tune the Pigeon Chaser prototype, so that it can be produced and implemented in other schools. It is also designating a new "maker space" for students to use, where they come up with new ideas and work on ICT projects together.

Through these programmes, Victor hopes students can find their passions, embrace a try-fail-try attitude, and carry that confidence forward with them.

"The pride I have in my students is not based on grades," says Victor. "It is in seeing them grow as individuals and understanding that learning does not stop at the end of an examination."

Walking the Talk

Trekking across Singapore, Syam Lal s/o Sadanandan is out to 'save' nature and his students.

Mr Syam Lal s/o Sadanandan
Head of Department
(Normal Technical)
Bukit Batok Secondary School

"What has really helped me are the different opportunities Mr Syam has given us, such as being part of the Network for Teaching Entrepreneurship. I must say my Secondary 3 and 4 experience has been quite different from what I expected."

– Javen Koh, Secondary Four

What are the chances of teenagers choosing to spend part of their weekend trekking across Singapore with their teacher? If you're thinking, 'low', you have to meet the growing members of Bukit Batok Secondary's One Earth Club, and their teacher Syam Lal s/o Sadanandan.

The 30 members of the One Earth Club (OEC), which raises awareness of environmental issues, heads out on half-day treks across the country every month. What could be the attraction? Endless conversation in the absence of mobile phones, rich experiential learning about nature and nasi lemak for breakfast.

Says Syam, "I created this club for students who may drop out of Co-Curricular Activities (CCAs). I saw this happen a lot with Normal (Technical) students. So I used this club to 'catch' these students, get to know them better and build rapport with them." Syam also invites those with disciplinary issues to be members of the club.

In his 23 years of teaching, Syam has seen students who lose focus and perform poorly as well as those with disruptive behaviour. To get to the root cause of their issues, he realised that he needed to spend time interacting with his students.

The OEC enables him to do that. It also gives him the opportunity to empower the students and build their self-confidence by providing them leadership positions and responsibilities.

The club has grown in popularity over the years. Current students from CCAs, as well as alumni, seek to participate in the club activities. Together they have explored, in groups of about 40, Pulau Ubin, Coney Island, Sungei Buloh and MacRitchie Reservoir. They have also conducted 3-4 coastal cleanups at Pasir Ris Beach annually.

"My aim is to make these treks a fun learning experience. Along the way, we stop to talk about nature, about plants and symbiotic relationships. Walking with a handful of students each time, I get to speak to them and get better insights into their lives."

For Syam, establishing the OEC is part of his broader approach to motivate and educate his troubled students, who are mostly struggling with academics, challenging

circumstances and despondency. Some contemplate dropping out of school.

"I want students to taste success somewhere [in their lives], to be good at something," he says. "Once they have this success, they will feel confident and be able to progress [in other areas]."

TURNING POINTS

Syam's own setback in school as an easygoing and sporty teenager helped shape his perspective on teaching.

He used to spend countless afternoons playing football, often too tired to devote much energy and focus on studying. Yet, this former school prefect back in his school days was unconcerned as "passing exams had come naturally" to him.

The O-Level examination proved to be a harsh reality check. He did poorly across his subjects, failed English and repeated Sec 4.

"It was a humbling lesson," Syam says. "I was a repeat student in a 'strange' class because all my friends had moved on. It was a very hard lesson. But, maybe this is the reason I can relate with students who may feel looked-down upon, to counsel and champion them to do better."

By the time Syam graduated with a degree in Biochemistry, he had already started to seriously consider a teaching career.

"I think it was in my blood," says Syam, whose great-grandfather had been a teacher and a principal, and whose grandmother had also been a teacher. "I liked the idea of teaching from a very young age."

As a teacher, one must "build a rapport and develop a basic trust" with students, to quote Syam.

In the course of his career, Syam estimates he has taught and guided about 800 Normal (Technical) students, with nearly all progressing to the Institute of Technical Education (ITE), and some to polytechnics and universities. He talks with great pride about his students. He has also gone over and above to assist some students through tough times.

Syam shares the story of a student with anger management issues. He and his fellow teachers learnt how to avoid triggers, and also came up with a code word to indicate a meltdown, so they could intervene in the right way.

He also encouraged the student to take up rugby, which the student's father had excelled in. The student was later appointed to a leadership position in the rugby club. He curbed his outbursts as well.

Syam shares another student who wanted to quit the National Cadet Corps because he felt uncomfortable wearing the uniform. Syam persuaded him to remain as his assistant in a non-uniform role. The student fulfilled his responsibilities and completed his CCA.

In another instance, Syam counselled a student who had been playing truant behind her parent's back. He held a family conference for the mother and child to engage in a heart-to-heart conversation.

"I told her, 'Look, you're a very good student. You have leadership qualities, and I want you to come back to school. I have confidence in you'," he recalls. The intervention worked and the student returned to school. She later became president of the One Earth Club and is now pursuing her studies at ITE.

BUILDING CONFIDENCE

Over the years and with a multitude of experiences, Syam realises that the needs of students differ significantly.

He used to believe that his students' needs were like his, hence he taught them the way he was taught in school. But a special education needs (SEN) course he attended made him rethink the need to cater for different kinds of learners.

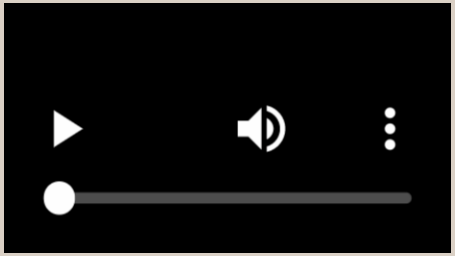
"[Understanding] SEN opened up my mind." says Syam.

To enliven his classes, Syam shares fun facts, real-world anecdotes, and game-based learning, such as an escape room concept. He also conducts learning journeys. After a trip to a hydroponic farm, he and his students implemented the technology in the school's nursery.

"My conviction is that you have to build the confidence of students, so that they believe in a brighter future. They must find success in our programmes to gain this confidence. So long as they have confidence, they will achieve."

Words Matter

Poems, songs and movies – English teacher Hing Mui Hong uses real-life stories to show her students the power of words and the emotions they evoke.



Miss Hing Mui Hong
Head of Department
(English Language)
Keming Primary School

"Ms Hing shares many interesting things in class, including songs, movies and newspaper articles. Ms Hing always teaches us in a way that widens our knowledge beyond the textbook. We also learn values that will help us become better people in the future. "

– Alzahra Begum Ali, Primary Six

Imagine you're a child in a poor village in Iran. You've lost your sibling's school shoes and your parents do not have the money to get another pair. What will you do?

When English teacher Hing Mui Hong asked her Primary 6 students this question, the responses included queries about why the children could not ask their parents for new shoes and why their family was so impoverished.

She had shown the students scenes from the Iranian film, Children of Heaven, in which a young brother and sister decide to share a pair of shoes after losing a pair, to talk about the background, values and considerations that impacted the family.

Her purpose was two-fold: To help her students learn about aspects of character, such as empathy, and to help them write fuller, richer characters and stories.

"A good teacher is a good facilitator, who can connect with students and reach out to them based on their learning profiles," says Mui Hong, who has taught at Keming Primary School for nearly two decades and is Head of Department for English.

For another lesson, Mui Hong got students to study the lyrics of the song, Tie a Yellow Ribbon Round the Ole Oak Tree. She used this song, which talks about an ex-convict wondering if his wife would welcome him home, to discuss the notion of forgiveness.

When planning lessons, she not only takes into consideration how best to meet students' needs, but also pays attention to their development, the effort they put into preparing for class, and how their attitudes towards learning evolve over time.

"At the end of the day, I want to see the sparkle in students' eyes. Then I know, okay, they have understood the lessons and they are one step closer to their goals."

HELPING STUDENTS FIND THEIR VOICE

In her effort to reach out to different types of learners, Mui Hong taps different

methods, including technology. Sometimes, she is surprised by the results.

In one instance, she had asked her students to practise for an oral exam using Padlet, where she could set topics and students could record their responses.

"I had a very shy student, who lacked confidence," says Mui Hong. "It was difficult to get her to speak up in class. But she listened to her friends' recordings on Padlet, looked at the feedback and sent in a very good submission herself. I was really surprised. She sounded really confident!"

She adds, "As a teacher practitioner, I am open-minded about the tools that are available. When I use ICT, it has to be a tool that helps me and my students meet the lesson objectives."

Mui Hong's English classes offer a variety of lessons – in active listening, speaking skills, the nuances of language, the importance of tact and positive messaging, values, and aspects of storytelling and journalism.

"I hope to make the learning of the language a rich and meaningful experience for the students," she says.

Some recent projects that have captured the imagination of Primary 5 students revolved around modern marine conservation efforts – something Mui Hong collaborated on with subject teachers to marry the learning of English and Science.

The students researched the topic and were challenged to develop ways to educate schoolmates about it.

"We tasked them to come up with storybooks to teach their peers about how they can play a part in protecting marine animals – and they did. Last year, a group of students did photojournalism, so they went to S.E.A. aquarium to observe marine life, took pictures and wrote down their findings, before staging an exhibition in the school library."

"What I'm trying to say is that learning and teaching has to be fun and meaningful. When students realised they were writing for a real audience, and conveying a meaningful message, they took the task more seriously and became so enthusiastic about it."

WORDS THAT UPLIFT

Mui Hong's passion for teaching was triggered during her polytechnic days, when she really enjoyed guiding her juniors in Chinese Orchestra. She had initially planned on pursuing a career as an accountant, but a stint at contract teaching changed her mind.

"As a teacher, I have found myself growing and felt more excitement in my career than I had before," says Mui Hong, whose earliest students included kids facing financial difficulties or lacking family support.

"I started to think about how I, as a teacher, could provide my students with the love and care that they need."

In her effort to do her best for her students, Mui Hong constantly hones her pedagogical skills – keeping abreast of fresh teaching strategies, learning from colleagues and attending conferences.

She is involved in professional learning teams, where fellow teachers assess areas for improvement in the teaching of some concepts and brainstorm solutions to strengthen the support for students in learning.

Mui Hong was part of one such group that looked into why some students excel in grammar yet struggle with composition.

"When it comes to writing composition, some students have the tendency to forget their grammar rules, and their sentence structures can be problematic. We did some research and found that we teachers need to do more to help students connect grammar with writing," says Mui Hong.

"If we find practices that work well, we will share with educators in the teaching fraternity. This creates a ripple effect with more teachers sharing good practices with others."

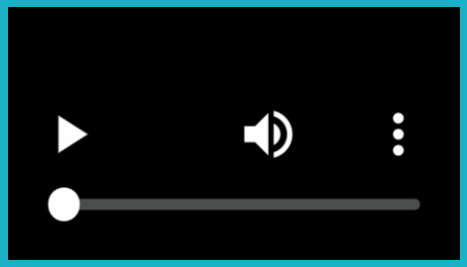
In everything she does, Mui Hong looks far beyond her English class. If her students speak carelessly and lack tact, she gently reminds them how words can hurt, and the importance of being sensitive and forgiving.

When they read a story or watch a film, she encourages them to use their imagination, to consider what would happen next, and why.

She says, "Through the English language, I hope to uplift students, strengthen their character and make learning fun and enjoyable for them. My classroom is only a springboard for them to grow up to be lifelong learners and useful members of society."

From Hardware to Heartware

ICT expert Liu Kah Yang enjoyed troubleshooting software issues, until he found his passion with a different sort of "troubleshooting" – students in need.



Mr Liu Kah Yang
Year Head
Bartley Secondary School

"He's very patient with the whole class even though my class is very playful. As Year Head, he encouraged me when I didn't want to go to school. He even got the class to send me a card."

– Beverly Lock, Secondary Two

When you enter the Pod, it's clear that this room is meant for teenagers to have fun. There are Xbox and Wii consoles along the wall, stacks of board games on a shelf, a foosball table in one corner, and musical instruments like guitars and an electric organ ready for a jam session. Comfortable sofas in the room invite teens to lounge around.

The Pod was set up in Bartley Secondary School because Liu Kah Yang, Year Head, felt that the students needed a safe, supervised space after school hours to hang out.

In Bartley, as in any school, there are students who face challenging issues. They might have relationship problems, or they might have parents who work long hours, or who are in the midst of divorce. These problems manifest themselves in students as absenteeism, being late for school, falling grades, falling asleep in class, or being defiant toward teachers. Because of their issues, these students may be more likely to mix with bad company after school, and their behaviour can worsen.

But while the Pod was created with challenging students in mind, it is open to all. At any one time, about 30 students hang out in the room, playing games, making friends, and most importantly, staying out of trouble.

READY TO LISTEN

While an after-school clubhouse is not unique to Bartley Secondary, Kah Yang approached it in a unique fashion. He didn't just find a classroom and pack it with what he thought the students would like. He surveyed the students to find out what they wanted in an after-school clubhouse. In addition to the obvious, like computer games and board games, Kah Yang found out their number one request was air-conditioning. So, Kah Yang set off to find an appropriate room to turn into the Pod.

The listening did not stop there. He regularly does surveys and gets direct

feedback from students about how they feel about the place. He doesn't pander to all their requests, but if they ask for something reasonable, he always considers it. So, for instance, when students asked to move the furniture around for a change of scene, he said, ok.

Says Kah Yang, "The child needs to be heard, whatever the issue. I like to understand where he is coming from. I don't think it's fair to the child if I jump to conclusions based on just the feedback I get from teachers."

A POD THAT PROTECTS

To make students feel comfortable, teachers are not always stationed there. Instead there is a youth worker, who organises activities and acts as a confidante to the kids. Kah Yang drops by from time to time. If any of the students have any issues, the youth worker shares this with Kah Yang.

The Pod has become tremendously popular.

Apart from games, there are activities as well. During the festive period, students learn to bake cookies and make cards that they can give their parents. There are also learning journeys to places around Singapore, like Chinatown. Recently, the school took the students out to go shooting with air pistols, an experience many of them would not otherwise have had.

PEOPLE, NOT PROCESSES

Helping people become better versions of themselves is Kah Yang's forte. While his current focus is students, in his previous role as head of ICT at Bartley Sec, he had to help teachers leverage technology to drive self-directed and collaborative learning. Kah Yang sat in on different classes, so that he could familiarise himself with how the different subjects were taught, and recommended appropriate technology tools to enhance the teaching of the subject.

Previously a Maths teacher with a degree in civil engineering, Kah Yang took on the role of Year Head when the school merged with First Toa Payoh Secondary.

After wearing both hats – ICT and Year Head - for a year, Kah Yang decided to focus on the more pastoral role in 2016. "My role as Year Head gives me the opportunity to develop students in many ways. It allows me to look at not just the development of one, few or a class of students, it provides me the opportunity to work with at least a whole level of students."

In Bartley, the Year Head follows the students as they progress from Secondary 1 to Secondary 4. This enables Kah Yang to get to know the students and their challenges well, and guide them along the way.

He relies on the form teachers to help him do this. "They work very closely with the students and they surface issues to me." Another source of information is the school counsellor.

His ICT skills continue to come in handy. "I check data pertaining to attendance, late-coming, academic performance, and attendance in CCA. I sieve through the data so I can see which students are at risk."

He then works closely with the form teachers and school counsellors to reach out to these at-risk students. When appropriate, he will talk to the students, and if necessary, their parents as well.

Sometimes the problems come to him. The students know that Kah Yang is someone they can talk to, and some of them approach him directly when they are troubled.

While he has done a lot for students as Year Head, Kah Yang is particularly proud of the processes he has put in place to monitor student attendance.

"Programmes can only work when students are present for school," he says. "It is never easy to help resolve family or individual issues that prevent a student from attending school", so if he can help improve the attendance of even just one child, so that the child benefits, that, to him, is an achievement.

Where F and N Stands for Fun and Nurturing

The importance of food and nutrition comes to life in exciting ways in Lee Teck Miang's classes.

Mdm Lee Teck Miang
Teacher
Evergreen Secondary School

"It is thanks to Ms Lee that I was able to go to Hong Kong on an exchange programme last October. She gave me a chance to go for the interview and she did a dry run with me. My answers weren't presented well so she helped me to state things more clearly, and in the end, I was one of the 26 NPCC cadets in Singapore selected for the programme."

– Tan You Hung, Secondary Four – NPCC Cadet

It's recess time, and the students of Evergreen Secondary School rush out of their classroom … not to the canteen, but to a learning carnival run by fellow students.

It's Healthy Eating Week at Evergreen Secondary School, where over five days, 280 student-run booths tackle issues like hidden sugars and salt in food, diet-related diseases and how to modify meals.

Started by Lee Teck Miang, the subject coordinator for Food and Nutrition, the learning carnival is a consolidation of what the Secondary 2 students have learnt over two years in the Food and Consumer Education Programme and an opportunity for them to share their knowledge with the rest of the school.

Students go from booth to booth picking up healthy eating tips through posters, games and quizzes. With each correct answer, they are awarded winning stickers with which they can redeem healthy snacks.

One booth reveals the facts behind the nutritional claims of processed food. At another booth, a poster with the tagline "Are you eating candy?" entices students to learn about hidden sugars.

"The Secondary 2s are very enthusiastic about the carnival," says Teck Miang. "They don't get any grades for this, but they put in a lot of effort."

Students start preparing about two months in advance, using Google Classroom to generate ideas and for discussion. One week was also devoted to rehearsals, so students gain confidence in running the stalls and talking about nutrition. Teck Miang guides the discussions, offers advice, and vets the content produced to ensure accuracy.

SETTING UP THE 'A-HA' MOMENTS

"For students to remember, absorb and learn, lessons need to be fun, interesting and relevant," says Teck Miang, who uses a variety of techniques to keep her students invested in learning.

For instance, she brings the Secondary 3 Food and Nutrition students to the Cerealtech School of Baking Technology so they can learn how the different kinds of pastries, like cream puffs, fruit tarts and curry puffs are made.

The students hear from professional chefs who use food science to explain how the different pastries are created. They also talk about life in the food and beverage industry. Such experiences help bring to life what the students learn in school and also give them an idea of what a career in the industry would be like.

To keep students interested, Teck Miang likes to overturn their assumptions about food. She asks intriguing questions, like which is healthier — a fish burger or a cheeseburger? Many students will choose the fish burger because they are conditioned to think that fish is healthier than beef. Teck Miang then points out that the fish fillet has to be deep fried and the batter around the fish soaks up the oil. The beef patty, on the other hand, is grilled and the oil is able to drip off during the cooking.

"The kids are like: 'I've been cheated all my life!'"

A similar reaction occurred when a group of students watched a video on rice and noodles and realised there are a lot of sugars in carbohydrates. Students usually think of sugar in terms of sugar granules. Surprised, they set up a quiz for the other students to guess how much sugar such carbs contain.

Teck Miang loves these moments because she wants the students to be surprised. "Kids learn more when they have that 'a-ha' moment."

LET'S DISCUSS

Teck Miang likes to keep her classes focused on discussion to make meaning of information rather than to download information to students. She shares lecture videos that her students watch prior to the class, so they come in prepared to discuss the topics, clarify concepts, and demonstrate their understanding through workbooks.

Teck Miang was the first in her department to use "flipped classroom" as a strategy to teach Food and Nutrition. Now the entire Secondary 3 and 4 Food and Nutrition syllabus is taught in this manner.

At her students' request, she keeps the videos to no longer than six minutes. The Secondary 4s, in particular, appreciate the videos because it allows them to revise easily.

Teck Miang has become an advocate for online learning and even uses it for her CCA. She is the teacher in charge of the National Police Cadet Corps in Evergreen and to help cadets prepare for promotions, she set up an online learning hub. She collates all the videos sent by headquarters and puts them online in one place so that they are easily accessible.

"We put everything on the website, so students can do self-directed training at home."

MIND AND BODY WELLNESS

"As a teacher, our role is to educate a child. But our most important role is to keep the child safe in body and in mind," says Teck Miang, who is also a teacher counsellor. This is the thread that links her job teaching food and nutrition to her role as a teacher counsellor.

When she first joined Evergreen, Teck Miang had gone on a course to qualify her for the teacher-counsellor role. She went on to pursue a part-time degree in counselling from SIM University (now known as the Singapore University of Social Sciences), and graduated in 2011.

"As a Food and Nutrition teacher, and as a counsellor, I want my students to be healthy, both physically and emotionally."

She was heartened when one student told her that thanks to the Food and Nutrition class, she had developed a better understanding of what kind of diet her mother, newly diagnosed with diabetes, should be on. "She said 'I'm happy to learn what my mum should and should not eat'."

This is what makes Teck Miang happy – to help her students see the real-world value of studying food and nutrition and being able to help themselves and others. As she tells her students, "If a machine gets spoiled, you can buy spare parts. But you cannot buy a spare heart."

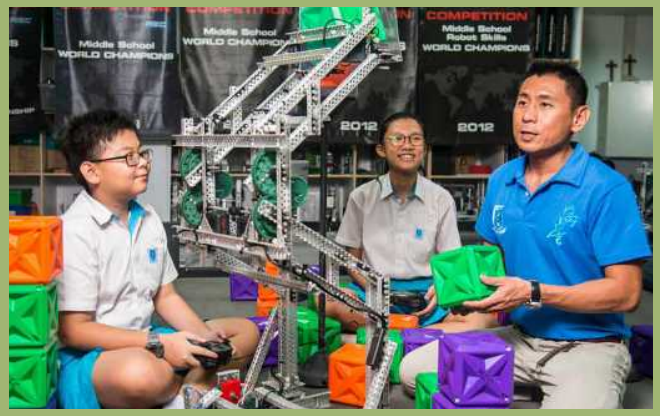
Building Robots, Shaping Values

Students from Hai Sing Catholic School have won the VEX Robotics World Championship four times. But before they could make those winning robots, their teacher Teo Yee Ming had to first make winners out of them.

Mr Teo Yee Ming
Subject Head (Information and Communication Technology)
Hai Sing Catholic School

"Mr Teo teaches us perseverance, resilience and fighting spirit. We have a 15-month journey to the robotics competition and during this period, we have to rethink, redesign, review. Because of my time in the club, I am now considering studying engineering in the polytechnic."

– Nicole Tan, Secondary Three



In a ring, two teams face off. Their task: race their robots around the ring to pick up hollow cubes and stack them over a stake within a given time. As the clock ticks, teams have to add sections to increase the height of the stakes, which increases the difficulty of the challenge.

The team of students from Hai Sing Catholic School keep their cool — they skilfully control their robots to complete the task. No surprise as Hai Sing's robotics club are world champions – the only Singapore school to have won in the middle school category of the world's biggest robotics championship four times, since 2012.

The champion-maker behind this group of talented students is Mathematics and Design & Technology teacher Teo Yee Ming.

To Yee Ming, while the global recognition for his students is energising, what drives him is the desire to inculcate in his students three qualities: perseverance, resilience and fighting spirit.

"When things are not smooth sailing, perseverance pulls us through. Resilience is important because when you fail, you need to stand up and try again," says Yee Ming. "Finally, fighting spirit lets you aim high. With fighting spirit, you will fight for excellence."

BUILDING ROBOTS, BUILDING CHARACTER

Members of this champion robotics club embark on their journey in Secondary One. They begin by building sub-systems, like a light-sensing unit or a four-wheeled robot that can move around. In Secondary Two, they begin building complete systems, combining these sub-systems. The end result would be a robot that can move around on four wheels, and use a retractable arm to retrieve, say, a black object and move it to another place.

Yee Ming's approach is not to spoon-feed the students. "I give them the specs, then they have to go think about it."

"I want them to be resourceful. I don't give them the fish, I teach them where to fish, which is the internet. If they are stuck, then they can go to their seniors."

In Secondary Three, students start building the robots for the competitions, in earnest.

Yee Ming scours YouTube constantly to see if anyone has built a robot with better capabilities. "When this happens, we go back to the drawing board."

What this means for students is that they have to dismantle their old robot and reuse the parts to build a new one – which means many long days. "It's painful", acknowledges Yee Ming. "In the 21st century, in this fast-changing society, there are always obstacles. That's precisely why I want them to learn perseverance, so that they can learn to overcome future obstacles in their lives."

LEARNING TO FIGHT BACK

In Secondary 3 and 4, Yee Ming ups the stakes as part of their training. "I throw them into unfair and biased matches where it's one versus two. I want to train them not to back down."

Through this, students learn to think on their feet, react quickly, and fight against the odds.

Students have stepped up to the challenge. One of his former students, Ben, had an eczema flare-up during a tournament in Anaheim, California. But he persevered through the discomfort, heading up to the hotel room, which had a humidifier, in between matches, to soothe the skin.

"Even though Ben did not win that competition, he was a winner in my eyes," says Yee Ming.

Ben went on to polytechnic and is now studying mechanical engineering at the National University of Singapore.

SHOWING STUDENTS THE POSSIBILITIES

It's been 10 years of hard work by Yee Ming and the students to bring the robotics club to its current fighting-fit state. An R&D engineer prior to becoming a teacher, Yee Ming brought the competitive element to the robotics club. To show the students what was possible, he has even stayed overnight in school to build robots. "Robotics is visual, so I built the robots to inspire. The 'wow' is important."

Initially, when Yee Ming intensified the training for the robotics club members, students and parents were unconvinced. "The parents would say to me – 'my kid needs to study; this is not a robotics school'. These same parents later saw the change in their kids and they texted me saying 'Thanks for nurturing my son'."

Within a year, the club had won their first national robotics championship.

The students and Yee Ming are at the club almost every day. It's a labour of love. What keeps these kids motivated? Says, Yee Ming,

"When they work hard, they see results."

PROBLEM-FINDING, NOT JUST PROBLEM-SOLVING

Yee Ming also drives the school's Applied Learning Programme (ALP) to promote STEM (science, technology, engineering and mathematics).

Through the ALP, all 560 students in Secondary One and Two get to link scientific and mathematical concepts that they learn in textbooks to real-life.

"Problem- solving is important, but problem-finding is even more important," he says. "The big companies that earn big money do so not just because they can solve big problems, but because they managed to identify the correct problem to work on."

With that in mind, Yee Ming got the school to convert a classroom last year into a Maker Space to allow students to build solutions to address real-world problems.

Yee Ming trains the students in design thinking and also in interview skills. "I want them to be able to show empathy, to connect with the person they are interviewing, to identify the critical problem.

"Then they work on their solutions in the Maker Space."

So, after speaking to staff and residents of an old folks' home, students created an exercise band that was more comfortable and safer to use than the one the home had been using.

The students are now in the process of making games for people with dementia. One idea is an improved version of five stones, a game familiar to elderly. But they made the beanbags larger, so it would be easier for the elderly to handle.

So what makes Teo Yee Ming this force of change? His answer: "I speak with passion and work with drive."

"Passion is the one thing that will help people achieve excellence. When you do things with passion, you will dedicate your time and effort to do it and you will find your way around the obstacles you meet.

"That's why I want my students to find the one thing they are passionate about, and go all out to do it."

Giving Students a Voice

PE teacher David Kelvin Vaithilingam started off wanting to set up an informal group of student leaders in school. He ended up creating a movement.

Mr David Kelvin Vaithilingam
Senior Teacher (Physical Education)
Meridian Secondary School

"Climbing a mountain is very difficult but the training had prepared us for it. From that experience, I have learnt to persevere through all my challenges, to never give up. My N-levels are coming up and there are a lot of challenges to get through but I will persevere."

– Izzaty Bte Muhamad Shukran, Secondary Four

They are the Red Shirts of Meridian Secondary School, a group of students who work at building a sense of belonging and school spirit.

Set up by David Kelvin Vaithilingam in 2004, they are Meridian's gung-ho, get-things-done "gang", running a slew of bonding, character-building school activities – from the Secondary 1 orientation camps and student leadership camps to the cross-country run and the National Day Parade.

Starting out as a group of 20 in what was then Coral Secondary School, it is today a Meridian Secondary institution with 90 members.

The idea grew out of something similar that David had experienced at Victoria School during his own secondary school days. As a teacher, he wanted to include students in running some of the programmes, so he brought together students with leadership potential. To give them a sense of identity, he got them red t-shirts. They started calling themselves the Red Shirts, and it just took off.

"All students should be given an opportunity to develop their leadership potential," believes David. "They grow up and even the most ill-disciplined ones mature. When they meet you outside, they are respectful and thankful. They succeed in their own ways and some will surprise you."

The strength of this community is seen in the many alumni, who continue to participate with their juniors in the group activities.

ONLY SOLUTIONS

So, what makes the Red Shirt such a powerful motivator?

From the start, the idea is to give all students a chance to learn, to take on responsibility, and to grow in confidence, says David, who comes from a family of PE teachers – his parents, wife, siblings and their wives are all PE teachers.

The students organise camps and they do everything associated with the event: from organising the games to putting together wet-weather back-up plans. David and the other PE teachers act as advisors.

Yes, the teachers could do it faster, but David believes that it is important to allow students to learn to do all these and develop confidence in their abilities.

One of David's mantras for his student leaders is "Don't give me the problem, give me the solution." He trains his students to be problem-solvers. This spirit is exemplified by a story that was told to David. A colleague had asked one of the students if he knew where to get more chairs for an event. That student said he didn't know. When a nearby Red Shirt was asked, the response was, "I have no idea, but I'm going to go and find out."

VOICE OF THE STUDENT BODY

With the growing popularity of this enthusiastic group of student leaders, David was soon asked to supervise the prefects as well.

He took this on, re-designating the prefects as student councillors, and changing their job description as well. They were to be the voice of the student body, instead of handling discipline issues like guarding staircases and looking out for litter bugs.

The student councillors carry out surveys, and identify issues that need to be addressed. One of their findings was that students wanted to wear polo shirts to school. Today, students only need to wear their full school uniforms on Monday mornings.

CONQUERING MOUNTAINS

David plans joint activities for the student councillors and Red Shirts too, such as the overseas trip at the end of Secondary 3. This event is an expedition designed to challenge the students. In 2018, for example, the students climbed Snow Mountain in Taiwan, which is 3,886m above sea level.

To train for it, the students trained for three months by climbing stairs. Plenty of stairs. They went up and down the 13-storey apartment block near the school. And they did it nine times per training session while carrying backpacks stuffed with heavy water bottles.

Being physically fit was only one aspect. During the trip, students had to deal with altitude sickness. Sometimes, they helped fellow students, who were struggling, carry their load. It wasn't easy, but everyone helped one another.

The point of the expedition is to develop students' physical and mental resilience. The one takeaway that David wants for his students is to know that they can overcome challenges – if they can climb a mountain, they can do just about anything.

ABOUT TURN

In the same spirit that anything is possible when you put your mind to it, David does not shy away from picking students who have had disciplinary problems in the past to be part of this group.

Bernice Quek was one such example. She had leadership qualities, but she was disruptive and abrasive in class. David took a chance on her, telling her that she could only don the red t-shirt if she changed her behaviour. And she did. "She ended up being such a fantastic student leader," says David.

Bernice subsequently went on to get a degree from Nanyang Technological University and she is now a writer. Earlier this year, she penned an article where she shared how becoming a student leader changed her for good.

David wants to help students with rough edges like Bernice. He says, "I want to give these students a chance, so that they look back on their secondary school days and say: 'There were people who believed in me'."

POST-SECONDARY EDUCATION INSTITUTIONS

Technical and Vocational Education and Training Landscape in Singapore

One of the key roles of the polytechnics and ITE is to equip students with industry-relevant and work-ready skills in order to prepare them for jobs in a wide range of economic sectors. Looking back at Singapore's history, as our economy developed, skills training had to be conducted in tandem with evolving industry trends for the workforce to respond nimbly to market changes. To meet the training needs of our workforce, the five polytechnics and ITE were set up over the years to spearhead technical and vocational education and training (TVET) in Singapore.

The polytechnics and ITE offer a comprehensive range of programmes in a variety of sectors. These programmes adopt an industry-focused and practice-oriented curriculum that blends theory with application.
Industrial attachments have become an integral part of the curriculum over time, to allow students to gain valuable on-the-job experience.
Course offerings equip students with skills that are versatile and adaptable to the evolving needs of the future economy.
Innovation and entrepreneurship are emphasised to give students an entrepreneurial outlook and build their awareness of opportunities in emerging growth areas.

Teaching in the Post-Secondary Education Institutions

Preparing Students for the World of Work

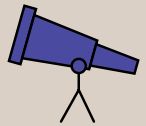
Educators in the polytechnics and ITE play a big part in preparing their students for the future. Educators do not adopt a single approach, or a fixed set of methods to train students. Instead, they experiment, refine and share their experiences with the community of educators within and across the polytechnics and ITE. Their lessons are designed to engage students in their course of study, and encourage them to apply their learning at the workplace and to give back to society.

To continually enhance their students' learning experience, educators in these institutions stay up-to-date on industry trends and developments. Some also further their studies or take on courses to deepen their own skills in teaching, and some go on industry attachments, epitomising the spirit of lifelong learning.

SkillsFuture

The SkillsFuture movement, a national movement to provide Singaporeans with the opportunities to develop to their fullest potential throughout life, regardless of their starting points, has a significant impact on our education landscape and workforce. Educators in the polytechnics and ITE play an important role in this movement. They guide their students in their education, training and career choices and what it means to be a lifelong learner.

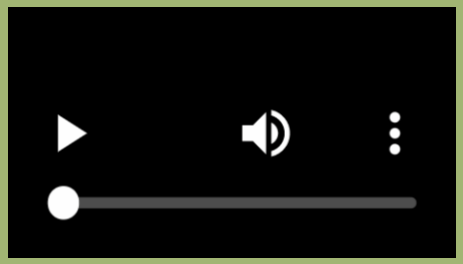
Educators in the polytechnics and ITE also contribute to the development of a high-quality system of education and training that caters to those already in the workforce. This includes training workers who wish to upgrade and deepen their skills to expand their job scope, or take up job opportunities in other industries. With the transformation of our economy, training needs will keep evolving and take on different forms. The role of our educators will become more important than before.



Our educators in the polytechnics and ITE are critical pillars of our TVET system. Their selfless dedication and commitment to maximise the potential of every student is a key reason behind the success of our institutions. As we look ahead, we are confident that our educators will take our TVET system to greater heights.

Coding Confidence and Instant Feedback into the Education System

Dr Koh Noi Sian, senior lecturer of analytics at Nanyang Polytechnic, uses data science to create classrooms where both students and lecturers benefit from positive feedback loops.



Dr Koh Noi Sian
Senior Lecturer
Nanyang Polytechnic

"Dr Koh was the personal mentor for our class. We had a lot of one-to-one sessions, and she gave me advice about life. That's when I started to plan my life."

– Sheikha Ummairah bte Zulkiffle, Diploma in Business Intelligence & Analytics, Graduate from Nanyang Polytechnic

The student is staring at the monitor with increasing frustration. She is working on an exercise to learn the programming language Python but has been stuck for the last few minutes. She frowns, jabs randomly at the keyboard, and backspaces furiously.

Just as she is about to give up, a hint pops up on screen, asking her to check the syntax. The student re-looks, finds her error, solves the problem and moves on to the next exercise.

This 'affective tutoring programme' is the brainchild of Dr Koh Noi Sian, the principal co-investigator of the system. The system uses artificial intelligence (AI) to recognise if a student is stuck and ready to give up, and then provides a helpful pop up hint.

A senior lecturer in data analytics at Nanyang Polytechnic (NYP), Noi Sian harnesses student feedback to help them learn better. A very important type of feedback is a student's emotional state.

"Emotions are integral to learning," says Noi Sian, who has been teaching at NYP for almost eight years. "Emotions can affect how students understand and apply their knowledge. We don't want our students to give up because they feel frustrated with a problem."

TIMELY HELP

Noi Sian, who has a PhD in Information Systems, co-created the engine for emotion-sensing, user interface and hint generation with her colleague and final year students. The web cam captures students' expressions – the eyes, eyebrows and mouth – to identify signs of frustration. The speed of typing and pauses also offer clues to the student's mental state.

The system, which has been running since last October, is triggered, on average, once or twice per session for every student.

"Students find it very useful," she says. "Also, some students are shy or may not

be comfortable with asking for help, so this would be good for them too."

Students aren't the only ones benefitting. Noi Sian links the system to a data dashboard, so that tutors can see patterns in the topics that students are weak in.

"If there is a problem encountered by a majority of the students, we will check if the issue is with the understanding of the topic or that particular question. If it is with the topic, then we will adjust our teaching techniques to clarify the topic. If the issue is with the phrasing of the question, then we will rephrase it to make it clearer."

This system is now being used in the Programming Essentials module taken by the students in the Diploma in Business Intelligence and Analytics course at NYP. There are plans to roll out the system for other programming modules at the polytechnic as well. In addition, Noi Sian is now working with other researchers at NYP and an industry partner to bring the system outside NYP.

QUICK FEEDBACK

At the heart of the system is the understanding that a good teacher needs to ensure that students actually understand the material, and to do so, teachers need feedback from students.

This is why Noi Sian is involved in another student feedback project. Known as Assessing Learning in Real Time (ALERT), this system regularly seeks feedback on lessons from students to see if they have understood the material. Traditionally at polytechnics, students only give feedback towards the end of the course.

With ALERT, students answer three short questions to indicate how they feel about the lessons; what concepts they have difficulty understanding; and they provide comments accordingly. Data visualisation makes it easy for lecturers to understand the feedback.

Noi Sian uses the ALERT system weekly for one of her modules and every two or three weeks for a different module to check on how the students are handling the course. With the feedback, she can revisit concepts that students struggle with.

ALERT is now being tried out by around 50 lecturers across the polytechnics and Institute of Technical Education.

On top of this, Noi Sian has been helping the polytechnic meet the needs of working adults who are hungry to learn more about applying data analytics in their respective industries. She has also been conducting classes to up-skill her colleagues on data analytics. So far, she has trained 50 lecturers at NYP in the fundamentals of the subject.

NO TIME FOR BOREDOM

Noi Sian is constantly looking for ways to help her students learn better, so she embarked on 'bite-sized pedagogy'.

Traditionally, modules in polytechnic have an hour-long lecture, followed by an hour-long tutorial and an hour-long practical session. Noi Sian combined these, but in smaller chunks: a 15-minute lecture introducing the topic, followed by a 15-minute practical or tutorial to make sure students understand the material, before resuming the lecture again.

"Students don't have time to get bored. They like this way of teaching. It's very effective." she says.

She ran an experiment that showed that students remembered the information better, understood it more, and were able to apply and analyse it better than if the lectures were delivered using the traditional approach. She presented a paper summarising her findings at a conference in Spain last year.

REAL-WORLD EXPERIENCE

The next step to teaching is of course ensuring that students get real-world experience. For Noi Sian, this means that her students need to have high quality final year projects, so that "they can display the work they have done to future employers".

The students of the diploma course have worked on industry projects for companies like Cheers by FairPrice and the National Healthcare Group Polyclinics (NHGP). For Cheers, the students developed a forecasting model on products to help store managers decide on the quantity of products to replenish. With NHGP, students worked with a data set of patients to help the organisation identify who would be most likely to suffer heart attacks.

MORE THAN A TEACHER

Noi Sian doesn't see her job as merely teaching students the basics of data analytics and business intelligence. Instead, she sees her job as ensuring that the students are successful in school and in their lives. This involves being a mentor to students.

Noi Sian's approach is to listen to them, to be available to them, and to guide rather than nag at them. "I believe the fundamental goal of mentoring is to make a difference in someone's life. I believe anyone can achieve mastery in the areas that they are strong at."

"In my years of teaching at NYP, I have encountered students with very challenging backgrounds. Despite the hardship and failures, they continue to try and have bounced back even stronger."

Who's Afraid of Accounting?

Ella Siu reimagines her classrooms to reach out to students who are fearful of numbers and accounting.

Ms Siu Yee Nar Ella
Senior Lecturer
Republic Polytechnic

"I still remember what she said, 'In accounting, you cannot be too kan cheong. Take a breather. Breathe in and breathe out.'" Miss Ella is always there to give us motivation."

– Sulaiman b Mohamat Haron, 24, Year 2, in the Diploma in Human Resource Management with Psychology

As a senior lecturer teaching Accounting at Republic Polytechnic (RP)'s School of Management and Communication, Ella Siu has a challenging job.

Before her students have even set foot into her class, they are already worried... about having to work with numbers, which is normally not their forte. Some students also do not see the relevance of the subject to their course of study or their lives.

FROM FEAR TO FUN

"People find accounting very difficult," acknowledges Ella, saying that even adults are intimidated by the subject.

Ella's first job is to remove the fear. "If students are fearful," she says, "they will be disengaged."

So, the first thing Ella tells her students is that it is all right to make mistakes – emphasising that this is what gets them thinking and learning.

Students also tend to be fearful about speaking up in class, so she makes sure that she welcomes all questions. "Whenever they ask a question, I will address it. No question is a silly question."

As a result, her classrooms tend to be quite lively and her students like the fact that her classroom is not a judgmental place.

To teach the five basic accounting elements — assets, liabilities, revenue, expenses and equity — she affixes one card to the back of each student without the student knowing what it is. Only others can read the card. The card states an item like "laptop" or "salary", and the students have to go around the class to ask each other one question at a time, such as, "Is the item an asset?", "Is the item a balance-sheet item?". The others

can only answer "yes" or "no", and the students have to guess the word on their backs. The team with the most number of correct guesses within a given time wins.

ENGAGING THE STUDENTS IN LEARNING

"In problem-based learning, we need to build on collaborative learning," says Ella. "This means class discussions are very important, and if students are disengaged, they won't participate in teamwork and discussions, and you will lose them."

She uses collaborative learning to teach students how to expand the basic accounting equation – 'Assets minus Liability equal to Equity'. From this equation, they can expand it further to bring in how revenue, expenses, prior-year profits and dividends come into the picture. Ella gets the class to form groups and sets each team to work on expanding the formula.

After that, teams debate their solutions. "The students have to articulate their thoughts, and they will learn through argumentation," she notes.

Ella also uses online platforms such as Wiki and Discussion forums to engage students who are more quiet in class and to encourage more active participation.

THE 'MONEY' GAMES

Teaching doesn't only happen in class. Ella also gets her students to participate outside in ways that will strengthen their grasp of concepts. One such platform is the Financial Literacy for Youths (FLY) Race, which is an Amazing Race-type event organised by RP for secondary school students.

Participants have to race to various pop-up stations in RP, and take on challenges related to financial literacy, such as growing investments, protecting assets or managing credit card debt.

For example, at the credit tools station, participants are given a virtual credit card and they have to figure out if their spending can be sustained with a given salary, as well as understanding the consequence of late payment after they make a decision on whether to pay up in full or not.

RP students help to develop the games. They also run the stations as station masters. And they take pride in the work that they do. Ella also conducts research to evaluate the effectiveness of this program.

In a separate initiative, Ella worked with other lecturers at RP to develop a board game called Build Your Own Business. As the name suggests, it allows students to pick up ideas on running a business, including the up-keeping of accounts.

MAKING ACCOUNTING RELATABLE

The experience brought home to students the real-world application of the importance of costing.

To help students understand the process of relevant costing decision-making, Ella developed an e-learning package with a simulation where students find out about a character's budget and the various cost considerations for the students to advise the character on what they think is the best decision.

Students also write in their Reflection Journals after every lesson. As a way to make the subject relevant to the lives of students, she will ask, for example, "From what you've learnt about budgeting today, how do you think you can help manage your family's finances?"

In response, the students need to articulate how accounting can be applied in their lives, and impact the way they live. The Reflection Journals also help Ella to understand the challenges students face, which she can then use to reflect on how to improve on her teaching.

A SENSE OF PURPOSE

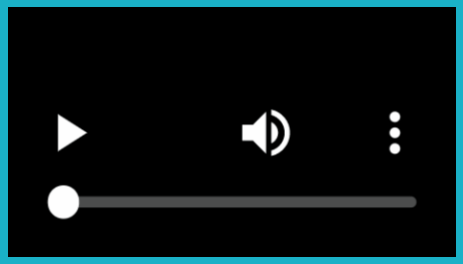
Apart from being a lecturer, Ella is also a mentor. In addition to providing a listening ear and a guiding hand, she has gotten the students involved in community service.

Ella worked with SunLove Seniors Activity Centre (Marsiling) on a project by which her students would organise monthly visits to the elderly staying in one-room flats. She started mobilising the students in 2014 by personally going with them for the first few visits, grouping them into different language / dialect groups, and guided the students to find out the needs of the elderly before utilising the funds allocated to the project. The students would spend time talking to and befriending the residents on a regular basis, who are usually elderly and living alone. "Besides participating in short-term volunteering events, this project requires the students to make a longer-term commitment to care for others," notes Ella.

Ella encouraged her students to get involved in this project because she wanted her students to think beyond themselves. "To be able to contribute to society helps the students develop a sense of purpose, and this would eventually help them to be a better person." The project is still ongoing and the monthly visits are now organised by the students. In fact, one student from her first batch of mentees has since gone on to study social work and is graduating this year from the Singapore University of Social Sciences; another one of her mentees is going for an internship in a social enterprise with a mission to grant support to caregivers taking care of the elderly.

Going to WAR Against Illnesses

Nursing is where compassion meets resilience, says Mae Tang, who is raising tomorrow's enrolled nurses with a dose of tough love.



Ms Tang Sheue Yin Mae
Course Manager
Institute of Technical Education

"When I first met Ms Tang, I thought she was unapproachable. The first time she taught my class, I got a scolding from her. But I got to know her better because of my problems. I would talk to my lecturers and they would escalate it to her. She always helped me to think about what to do next and she always believed that I could do well. "

– Muhammad Azerael b Azhar, Nitec in Nursing graduate from ITE College East

Every year, the Institute of Technical Education (ITE) College East takes in a few hundred enthusiastic young students into its Nitec in Nursing programme. But it takes someone like Mae Tang, the course manager of the programme, to turn these girls and boys into skilled nurses ready to serve at the frontline of patient care.

Students join nursing because they want to care for people, but Mae says, "Caring is not enough. You don't have to be a nurse to care for people. You can do that in various professions. In nursing, you have to care and have skill and discipline. Compassion and resilience go hand in hand."

To prepare them, Mae uses the acronym WAR: W for Willingness, A for Attitude, R for Readiness. "In nursing, you have to be at WAR," says Mae. "People's lives are in our hands."

So she asks her students: Are you willing to do what is necessary? To be well-groomed, to be on time, to put in the required hours? Do you have the attitude to pull yourself up even after you fail? Are you ready to do what is needed, even if it is cleaning faeces?

Students struggle, Mae admits. She has had situations when a student made a mistake with a patient and became too shaken to come back to school. Mae's answer in such situations is, "You have made a mistake. Accept it. Go back the next day and do it better. Otherwise, you won't have learnt from your mistake."

She adds, "Nursing is like being in a room with no exit signs. If there is a 'fire', you have to learn to put it out."

Tough love is Mae's signature.

FIRST, THE TOUGH PART

The first step to being a nurse, Mae believes, is self-discipline. "You can only help others when you have learnt to manage yourself." So she talks to her students about treating themselves with respect — coming to

class on time, being well-groomed, being diligent, having a good self-image.

To help students who struggle with low self-image, she started a Right Healthy Habits programme so more students can feel confident and good about themselves. The semester-long programme covers healthy eating, exercise and general health knowledge. The students learn to measure height and weight and check the Body Mass Index (BMI). They experience first-hand what it means to live in a healthy way and its associated benefits.

To keep things exciting, the school worked with the Health Promotion Board (HPB) who sent instructors to lead the students in Zumba and K-pop dance exercises. HPB also invited external speakers to give motivational talks to students.

The Nursing department tapped on the expertise of the ITE community. – for example, they sought help from the Food Science Department, to help the students learn about better nutrition. They also roped in the staff members in charge of Nitec in Fitness Training to put together a programme through which the Nitec in Fitness Training students got to train the nursing students. This has become a very popular class with many students, overweight or otherwise.

Another programme Mae initiated was CHARACTER (Caring, Honesty, Awareness, Respect, Advocate, Communication, Teamwork, Excellence and Role model). This was to help students understand the code of conduct that should guide nurses as they transit to working in a hospital setting. She came up with this idea after attending a briefing on the code of ethics for healthcare workers at the Ministry of Health.

The staff of the nursing department created a series of videos, using staff members as actors, to teach the students about how to behave and why it is important to behave in a certain manner. For instance, is it acceptable to gossip about a patient? Should you accept gifts from a patient's family? She guides students through these conversations, helping them see the different points of view.

"At the end of the day, I ask students to think how they would feel if the patient was their family member," says Mae.

Nurses must see the patients as people – with families, with careers. "They must look

beyond the hospital pyjamas," she says. "Hospitals tend to strip people of their identities. You, as a nurse, must return that identity to them."

NEXT, THE LOVE PART

Under the tough exterior is a teacher who stops at nothing to help her students succeed.

Some of the students come from challenging backgrounds. Some students are facing financial issues, a parent may be in prison, or the student could be living with elderly grandparents. In one case, the school found out about a girl who was working part-time on top of her attachment because she had to pay rent to her step-parents. The girl was a willing student, but she was tired and frustrated. The school is now trying to resolve the issue with the step-parents.

When there are discipline issues or if the students are struggling, Mae and her team spring into action. "We want to know what the issue is. It could be that the interaction with the teacher is not there. Or there could be systemic or process issues."

Mae has many heart-warming stories of her students to recount. Brandon, who overcame learning difficulties, and has recently graduated from the Singapore Institute of Technology. Nicholas Chan, who quit secondary school, but worked really hard at ITE and was the first ITE student accepted into medical school. Muhammad Azerael b Azhar, who has overcome many challenges – and is now studying nursing at a polytechnic. When he needed financial help, Mae offered him part-time work in the college. When he was about to give up on his polytechnic dreams, Mae stepped in. When he was about to become homeless, Mae helped him find a place to stay. When the home she had found offered him a place, "he cried, and I cried, too," says Mae.

To Mae, all her students are special. "Every student who walks through the doors of the nursing department is a unique individual to me. My advice to them is — knowledge and skills are the keys to your future. Leave any unhappy past outside, as ITE is a fresh start for you. Put your best foot forward and my teachers and I will be here for you."

Failure is a Stepping Stone to Success

"You may fail at something, but you don't have to be defeated by it." says Janaki Shah. "When you learn from your mistakes and move on, you succeed."

Dr Janaki Hemant Shah
Lecturer
Republic Polytechnic

"She's a good teacher. For concepts that are complicated, she makes them very simple by drawing things out to help us to visualise it or she will use analogies. She also cracks scientific jokes in class. She is very friendly and most of us call her Janaki."

– Wong Kah Ying, 21, Graduated May 2019 with a Diploma in Biomedical Science.

"You may fail at something, but you don't have to be defeated by it," is what Janaki, a lecturer at Republic Polytechnic's School of Applied Science, likes to tell students in her Genetics and Structural Biology class. One of the most important things that science can teach you is that in every failure, there is a lesson to be learnt."

"The skill of the scientist doesn't lie in getting the experiment right the first time. A good scientist is one who learns from, and improves their experiments with each attempt," says Janaki.

To get her students to understand the importance of learning from failure, Janaki has them write about the things that went wrong in an experiment in their reflection journal. "Every scientist must analyse the cause of failure to improve the next time," says Janaki. "Reflecting on mistakes made in the lab is an essential skill for students to acquire scientific rigour."

"I want my students to see failure as an opportunity to learn, and a step closer to the result they are pursuing," says Janaki.

FROM NECKLACES TO BIRDS

The modules Janaki teaches are not easy ones – so it's important for her students not to give up.

In Structural Biology, which deals with small molecules, "the students can't always visualise what I'm talking about, so it could be challenging for them to be interested."

To bring the subject matter to life for students, Janaki uses creative props like magnetic necklaces as teaching materials. "Those make excellent models for proteins because I can get them into whatever shape I want. It helps students see how it works three-dimensionally and they can play around with it."

Another secret weapon Janaki uses to keep students engaged is cute animals.

"Just recently, I was trying to teach them something about evolution and I could see their eyes glazing over," she shares. "So I told my students to go look up the kakapo on the internet. It is a flightless parrot that lives in New Zealand, and it flourished until

humans introduced dogs and cats into its habitat — there are now less than 150 known adult kakapos left.

As the students 'oohed and aahed' over the bird, Janaki explained how the kakapo is endangered because it was unable to evolve and adapt to new predators in its habitat. Her message hit home.

Students in Janaki's Genetics class love the examples of rare hereditary diseases she often shares. Apart from morbid curiosity, students are thrilled that by studying these diseases, they are among a select group of people in the world who actually understand that particular condition.

QUESTIONS THAT TEACH

In the spirit of scientific inquiry, Janaki encourages her students to ask questions—even if they may be beyond the given topic—and doesn't hesitate to pose them challenging questions of her own.

Janaki's class thrives on questioning and discussions. "In this day and age, we want students to learn to question 'facts' and develop good analytical skills," she says. "If I ask them a tough question and they don't know the answer, they have to at least try to find out. That's how they learn."

Sometimes, the class discussions go beyond the given topic.

Once, she was using an example of Down syndrome to teach students about medical conditions due to chromosomal abnormalities. The conversation shifted to Turner syndrome, as a student's sister suffered from that.

Instead of insisting that students stick to the topic, Janaki welcomed the diversion and let that conversation flow.

"In investigating this, they learned all the concepts I needed them to learn: They learned about chromosomes, about why such syndromes happen, and about diagnostic methods.

"I love it when that happens in my class," she says. "The more they control how and what they learn, the more engaged they will be."

Janaki also gets creative with teaching methods to ensure that students can follow dense and complex topics.

For some challenging subjects, she'll abandon the usual format in favour of interactive seminars, where she teaches one part of the concept, then stops to let it sink in. Before she moves onto the next segment, she gives students a quiz or asks them to explain the concept to each other.

She is also exploring the use of virtual reality to teach students about cytogenetics, a branch of genetics that deals with how chromosomes relate to cell behaviour.

According to Janaki, the classroom experience has improved considerably since she introduced these methods.

ASK 'WHY'

As focused as she is on delivering her lessons, Janaki goes above and beyond to look out for students experiencing personal struggles.

"Students can have challenges in their lives that we know nothing about, that we understand nothing about," she says. "This can affect their ability and willingness to learn in class."

Early in her career, she had a student who slept a lot in class, to the point where she asked him in frustration, "Why are you coming to class every day and sleeping? How are you going to pass your exams?"

His response was that he was working till 3 am every night because he was the sole breadwinner in his family and he had younger siblings to take care of. This was a sobering answer for her. She was able to point him in the direction of getting financial assistance, which helped him out, but the student and his story were an important lesson for her and stuck with her.

"My big lesson from that is when a student is not paying attention or is unable to learn well, it's important to ask why."

Janaki wins her students' trust by being there for them and not judging them.

"Often, when they are stressed or troubled, all they need is a sounding board. They just need a little bit of advice to find direction."

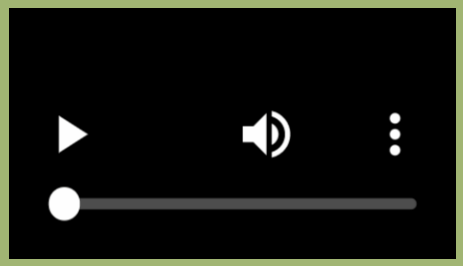
"However, when they are getting into bad company or bad habits, then you need to step in and be the old fashioned teacher and say — 'you need to stop this'."

Ultimately, she sees her role as that of a facilitator, accompanying her students on their learning journey, not lecturing them. "The students have to go through the experience themselves, but I'm there to help, guide, and support them and offer them a listening ear."

"What keeps me going is when I see my students learning and exploring, and having 'aha' moments," Janaki says. "That's the most joyful part of my job."

The Human Touch to Robotics

Mr Ho Sum Lim's very human approach to transforming and rejuvenating the Mechatronics and Robotics course at Singapore Polytechnic.



Mr Ho Sum Lim
Senior Lecturer
Singapore Polytechnic

"Mr Ho didn't teach me like a teacher teaching a module. He gave me a lot more help and guidance. I have very fond memories of my time in the course."

– Gan Bee Li, 27, Graduated from SP in 2013

When Ho Sum Lim was appointed course chair of the Mechatronics and Robotics diploma, he knew he was in for a challenge. For many of the students, Mechatronics had not been their first choice. Some of them were also struggling with low self-esteem.

"The first thing I needed to fix was myself," says Sum Lim. "I needed to do what it takes to believe in the course."

CURRICULUM MATTERS

He started out by speaking with stakeholders - graduates, the students, industry and the universities - and then modifying the curriculum to emphasise mechanical engineering and programming while dropping some electrical engineering modules.

These decisions proved to be right as the move towards smart machines gathered speed with Google acquiring companies that built robots in 2013 followed by Singapore's Smart Nation drive. Being convinced of the relevance of the course helped Sum Lim convince his students too.

His next challenge was disengaged students. It's not sustainable to keep pushing students, he says, so he had to figure out how to instil in his students intrinsic motivation. "If they are driven themselves, if they want to learn, then it's auto pilot."

BUILD AND PLAY

He started by asking to teach all the first-year students, so that he could get to know them better.

"I felt if I could connect with them as a friend, they would listen to me and that relationship would help me to influence them."

He also added the element of play and competition into the course to spark interest. "I let the students play with what they built."

In their first year, they had to build a simple robot that shoots out a ping-pong ball. Sum Lim decided to turn it into a competition.

At the end of the course, the robots from each class face each other on a table and

shoot ping-pong balls to knock down toy soldiers. The winning class is the one that has knocked down the most number.

The results were immediate. "The enthusiasm shot up!"

He did the same thing for the second-year students. They had to build a robot with sensors that could detect and follow a reflective strip on a course. At the end of the project, the teams competed to see who could get around the course the fastest. The students were so enthused that after the first round, they asked to be able to tweak the programming or adjust the sensors on the spot so that they could beat their friends.

Apart from introducing play, Sum Lim also gave students a space they could 'own'. A new deputy principal had joined the polytechnic, Hee Joh Liang, and he wanted to introduce the idea of learning spaces for students to learn together.

Sum Lim took him up on the idea and had the robotics lab reconfigured into that learning space. Each group of four or five third-year students would be given two tables in the space and they could 'own' that space for six months while they worked on their final year project.

"We let the students play and work there." Sum Lim even donated one of his old guitars.

All the teams could see each other working. This provided some peer pressure.

The open nature of the space also allowed peer-to-peer help. "You would see students teaching other students."

BUILDING CONFIDENCE

To further tap into students' motivation, Sum Lim gave the final year students the autonomy to choose their own team, the project they wanted to work on, and allowed them to work on it at their preferred time.

They could use whatever technique they liked. The only thing that mattered was the end product.

What also helped motivate students was that the course enabled them to build on their successes and give them confidence in their abilities. In the first year they started with simple projects that they could succeed at. The second year would build on that knowledge and have a project that was slightly more challenging. It was always a challenge to set "Goldilocks" tasks - "Not too difficult, not too easy".

Sum Lim also used social media to help build up students' confidence. He put up videos of the final year projects on the school's website. He shared photos of projects and events on Facebook. When these posts got likes and encouraging messages, the students felt good about themselves.

Through all this, Sum Lim helped to develop intrinsic motivation among his students so that they would work hard.

He shared his message of autonomy and intrinsic motivation with colleagues as well, giving them the autonomy to choose projects that they wanted to work on for students in different years. His only message to the teachers: the students must enjoy the projects.

THE REAL WORLD

The third thrust of Sum Lim's multi-pronged approach to overhauling the Mechatronics course was to build a relationship with the industry, so that his students would be able to get real world experience. This helped his students head out on internships with local and international companies, which were 22 weeks long. Some students went on to take on full-time jobs with companies they had interned at.

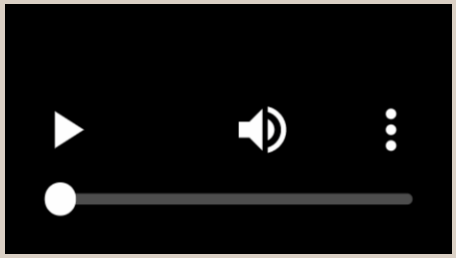
The Robotics and Mechatronics course is now a popular one. Overall results of the students have improved and even the academically weaker students are doing better.

The final year projects that they work on have also grown more complex - from simple hobbyist efforts like drones to a commercially useful automated storage and retrieval system. This system that the students built is now in use by a German company.

Sum Lim, who has since stepped down from the chair of the course, likes to say, "When students enjoy what they do, success is the only outcome."

Keeping It Real

In the fast paced field of digital marketing, Steven Ng keeps his students up to speed by providing opportunities for them to apply their learning in the real world.



Mr Ng Chee Kuen Steven
Section Head
Temasek Polytechnic

"Mr Steven's way of teaching is very focused on problem-solving. His aim is to have open dialogues, to help us arrive at an understanding of the topic."

– Joshua Tseng, Diploma in Marketing, Graduate from Temasek Polytechnic

In his previous job, Steven Ng worked in sales and marketing for a multinational corporation. Whenever his colleagues needed advice, they would gravitate towards him.

"I was kind of a counsellor for them," he says. His colleagues noted his even-tempered personality and penchant for mentoring.

Therefore, it seemed like a natural move for Steven to make a mid-career switch to education after eight years in the corporate world. Having majored in finance and marketing at the National University of Singapore (NUS), he started teaching marketing research at Temasek Polytechnic (TP).

"In the past, I needed to understand the needs of customers. I've translated that to being student-centric, and finding out where my students are coming from."

As digitalisation disrupts the marketing industry, he proactively reviews and updates the digital marketing curriculum. To do that, he took up an industrial attachment with a digital marketing agency to keep up with the latest trends in the sector.

"I read quite a lot of journals," he says. "But I also needed to practice in order to show the way to my students."

After updating the digital marketing curriculum, he promoted a more hands-on approach in his classes.

"Right from the start, I realised that teaching was not just standing there, to be the 'sage' on the stage and delivering content," says Steven, who has earned a

Master's degree in education since going into teaching. "Those days are gone."

"Google and YouTube might even do a better job," he quips. "So, [classes] have to be interactive. I have to ask the right questions and assess whether students are able to understand or not."

As such, he prefers to divide students into pairs or small groups. By not allowing students to "hide" in lectures, Steven can suss out which students have understood and which students have gaps in their learning.

EMPOWERING LEARNING

Given the fast-moving and ever-changing digital marketing landscape, Steven considers what he teaches in the classroom as a first step in learning for his students.

"Honestly, textbooks [in this field] tend to be outdated by the time they are published. We give students a foundation by teaching them the principles. It's important for them to learn continuously."

To aid his students' learning, Steven has sought innovative teaching resources.

"The difficulty of learning social media marketing is that we cannot simply take over the account of a real-world company and apply what we have learnt in class," he says.

The next best thing was the discovery and use of sophisticated simulation games, which Steven introduced after networking with the head of a digital courseware company. In addition, he secures internships with charities, for his students to put their knowledge, such as in Search Engine Marketing (SEM), into practice.

Such partnerships have extended overseas as well, with students going on service trips. They carry out research in a foreign market, before working with non-governmental organisations to implement strategic marketing plans that support local charitable causes.

A former student leader from his days at NUS, Steven is also a firm believer in student-led initiatives. Hence, he is active in overseeing a Marketing Interest Group on campus.

"We want students to learn outside the classroom as well," he says, pointing out that soft skills are often developed outside formal classes.

With the interest group, students can organise activities such as camps, take on leadership positions and mentoring roles, and run social media accounts.

"This is a more holistic form of student development," he says. "Critical thinking, communication skills and teamwork are the types of soft skills that are really key for the 21st century. We have to make learning more holistic for our students."

BEING HUMAN

Through all this, what matters most is being able to relate to students and understand their learning needs.

"When students don't do well, I'm always interested to find out why. I have a research background, so I tend to have a more investigative approach," says Steven.

His student-centric approach came into play when he supervised a student who had lost his eyesight. Some of Steven's colleagues were concerned about how to help the student, Joshua Tseng, achieve his learning objectives.

"Marketing involves the use of visuals. You need to look at certain things, such as advertisements and promotion materials in order to critique them. We decided to find ways to work around these challenges."

Steven volunteered to be Joshua's Care Person in school. This meant leading in efforts to find solutions to the problems, such as working with a non-profit organisation familiar with assistive technology devices, and making lessons and assignments accessible to Joshua.

Steven didn't mind the extra effort because he saw "a lot of potential" in Joshua, who has since completed a successful internship at a hotel, graduated from TP and garnered a scholarship for further studies at the Singapore Management University.

"As an educator, if you want to be inclusive, you have to think ahead, see what challenges lie ahead and think of ways to overcome them," he says.

President's Award for Teachers Past Award Recipients

1998
Mrs Lim Tai Foon
St. Hilda's Primary School

Mrs Geetha Creffield
Anglo-Chinese Junior College

1999
Mrs Juliana Donna Ng Chye Huat
Nan Hua Primary School

Mr Wilfred Philips James
Dunman Secondary School

2000
Mrs Ng Peng Huat
Nan Hua Primary School

Mrs Caryn Ann Leong
Ping Yi Secondary School

Mdm Tan Liang See
The Chinese High School

2001
Mrs Chin Ngan Peng
Kong Hwa School

Mrs Nora Teo
Punggol Primary School

Mr Lim Chiow Huat
Broadrick Secondary School

Mrs Audrey Ting Yee Han
Nanyang Girls' High School

2002
Mdm Stefane Tan Hugue Hwan
Meridian Primary School

Mdm Tong Wai Han
Ang Mo Kio Secondary School

Ms Koe Heong Yin
The Chinese High School

2003
Mdm Long Miaw Ying
Jurong West Primary School

Mrs Kheng Samuel nee Chua Mui Yee
Lakeside Primary School

Mrs Roger Teng Siok Fun
North View Secondary School

2004
Ms Goh Siew Hong
Admiralty Primary School

Mrs Pramageetha Velmurugan
Huamin Primary School

Mr Koh Cher Hern
St. Hilda's Primary School

Mdm Rabiathul Bazriya
Compassvale Secondary School

Mdm Ranjit Singh
Pasir Ris Secondary School

2005
Miss Lim Siew Gek
Ahmad Ibrahim Primary School

Mdm Noorismawaty Bte Ismail
Jin Tai Secondary School

Mr Chew Tec Heng Edwin
Sembawang Secondary School

2006
Mdm Bong Fui Lian Shirley
Montfort Junior School

Mrs Tan Swan Liang Doris
Temasek Primary School

Mr Nur Johari Salleh
Deyi Secondary School

Mrs Goh Hui Cheng
Paya Lebar Methodist Girls' School (Secondary)

Mr Sulaiman Bin Mohd Yusof
Sembawang Secondary School

2007
Mdm Yip Jee Cheng Jessie
Mayflower Primary School

Mdm Parameswary d/o Sundar Rajoo
Montfort Junior School

Mr Yeo Leng Quee
Peirce Secondary School

Mdm Norlita Binte Marsuki
Sembawang Secondary School

2008
Mrs Ong-Chua Li Ling Eileen
Haig Girls' School

Mrs Lee Kok Hong
Temasek Primary School

Mrs Lim-Ng Yee Ping Diana
Coral Secondary School

2009
Mr Terry Tan Chee Liang
Anglo-Chinese School (Primary)

Miss Cardoza Sharon Ann
Farrer Park Primary School

Mdm Wong Lai Fong
Anderson Secondary School

Miss Lucy Oliver Fernandez
Catholic High School (Secondary)

2010
Mdm Emelyn Soon Bee Hong
CHIJ (Kellock) Primary School

Mr Devindra Sapai s/o Indrasapai
Seng Kang Primary School

Miss Teh Wan
Townsville Primary School

Mrs Mohana Eswaran
Regent Secondary School

President's Award for Teachers Past Award Recipients

2011

Mdm Chua Mui Ling
Woodlands Ring Primary School

Miss Serene Han Tui Kin
Montfort Junior School

Mdm Dianaros Bte Ab Majid
Haig Girls' School

Mr Chong Jack Sheng
Woodlands Ring Secondary School

Mr Ganesan s/o Raman
Fairfield Methodist School (Secondary)

2012

Mdm Anwara Khatun d/o Moklis Khan
Haig Girls' School (Primary)

Ms Koh Su-Cheng
Da Qiao Primary School

Mdm Tan Ying Fong Irene
Telok Kurau Primary School

Mr Gejendran s/o V Krishnan
Geylang Methodist School (Secondary)

Mr Yap Boon Chien
Tanjong Katong Girls' School

2013

Mdm Shakila Jamal Mohamed
Da Qiao Primary School

Mdm Chee Mui Choo Valerie
Xinghua Primary School

Mr Lee Beng Wah
Bedok Green Secondary School

Mdm Lee Yee Tyng
Hougang Secondary School

Mdm Lim Chye Ling @ Nurul Huda
Kent Ridge Secondary School

Mdm Chan Puay San
Innova Junior College

2014

Mdm Lim Yen Peng Linda
Chongzheng Primary School

Miss Rezia Rahumathullah
Da Qiao Primary School

Miss Sim Lucy
Guangyang Primary School

Miss Wong Yoke Chan Wendy
Geylang Methodist School (Secondary)

Dr Muhammad Nazir Bin Amir
Greenview Secondary School

2015

Dr Tay Lee Yong
Beacon Primary School

Mdm Tauled Tunisha Bte Mohd Paser
CHIJ (Kellock) Primary School

Mdm Safidah Bte Samsudin
Da Qiao Primary School

Mdm Halimah Bte Jumaha
Bedok South Secondary School

Mdm Tan Dai Hwee
Anderson Junior College

Mr Muhammad Salahuddin Bin Ibrahim
Serangoon Junior College

2016

Mdm Juliana Bte Johari
Qihua Primary School

Ms O Guat Bee
Temasek Primary School

Mdm Tang Sheng Lien Michele
Catholic High School (Secondary)

Mr Anil s/o Vasudevan
Marsiling Secondary School

Mr Tharmendra Jeyaraman
Siglap Secondary School

Mdm Phoon Lyvenne
Spectra Secondary School

2017

Mr Jahangeer Bin Mohamed Jahabar
Endeavour Primary School

Dr Ow Yeong Wai Mang
Bishan Park Secondary School

Mdm Lim Hwee Sian
Cedar Girls' Secondary School

Ms Kwa Lay Ping
Singapore Polytechnic

Ms Asrina Bte Abdul Samad
Institute of Technical Education

2018

Ms Goh Wai Leng
Geylang Methodist School (Primary)

Mdm S Nirmala Devi
Guangyang Primary School

Mr Ong Yong Cheng Matthew
St Andrew's Junior School

Ms Ng Sheh Feng
Ahmad Ibrahim Secondary School

Mr Edzra Bin Iskandar
Bedok South Secondary School

Dr Lim Yi'en
National Junior College

Ms Tan Lay Khee
Temasek Polytechnic

Mr Teo Keng Ann
Singapore Polytechnic

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For supporting your colleagues and fuelling their passion

Parents
For acknowledging the efforts of our teachers in bringing out the best in your child

Students
For showing appreciation to your teachers who care for you

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