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2019

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35

THE TEACHERS' DIGEST

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A positive outlook in school
can turn students' lives around



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School Leader

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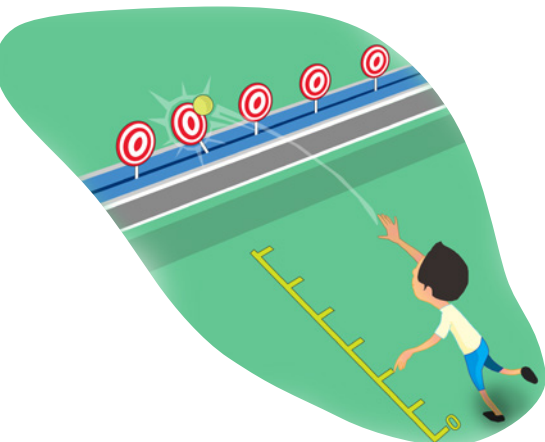
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If only life were that simple.



In life, we'll be asked, every now and then: "So what do you want to do?" The query is as much a request for our plans (for school, for work, for this career, for that project) as it is a reflection of our aspirations. Advice for our future is available everywhere you look, and some of it is very good. But it's easy to get overwhelmed by the sheer volume of it all.

The fact is that you can make the most of this advice only if you know what options are open to you. It's a lesson that Mdm Varalackshmi Hariharan learnt, having journeyed across all three career tracks for educators, before retiring at the pinnacle of the teaching track (see **p22**).

Sometimes, we find ourselves in uncharted territory. Our cross-level deployed teachers share how they took on new challenges and grew as educators through this process (see **p02**). Other times, the needs of the digital era may push us in new directions. For this, the Principal of Dunman Secondary has good advice (see **p06**).

As we go through such changes in our journey, what will stand us in good stead is a healthy dose of optimism. Research shows that optimism has a powerful influence on how we experience our work. This is true not only of educators, but students as well. Simply helping students visualise their journey towards their goals can make them feel more capable of achieving them (see **p08**). The impact of teachers on students' lives is also seen in the story of filmmaker Alvin Lee. He found his path because his secondary school teachers inspired him to do better in his studies (see **p20**).

As we send this issue to print, there is a sense of a journey coming to an end, and a new beginning. Partly because 2019 will soon make way for 2020. And partly because this will be our third-last hard copy issue. After 25 years in print, *Contact* will be going online. Much as we enjoy producing quality print content, the time has come for us to go digital.

Thank you to those, who have enjoyed receiving *Contact*. You have helped us keep an eye on the stories that shaped education. These are archived on www.moe.gov.sg/teachers-digest. Please watch this space for updates and continue to follow us online.

Have a merry Christmas, happy holiday season and healthy New Year. 

The *Contact* Team



P.S. The roving photo exhibition 'Our Schools, Our Stories' is back! Flip to the last page for details.

CONTACT

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WORK IN PROGRESS

What is it like being cross-deployed to teach a different level?
We ask five teachers to share their experiences, which show that
the art of teaching is always work-in-progress.

[SECONDARY → PRIMARY]

MATH BUDDIES

What's different: Managing primary school students was perhaps the most challenging for me. As a secondary school teacher, I had difficulty getting the students to open up. But primary school students are more willing to contribute in class. Where a secondary school student might say, "Why me? Can choose someone else?", a primary school student is more likely to say, "Why not me? I know the answer!"

I was very privileged to get more exposure to Formative Assessment in primary school teaching. We do not typically use mini white-boards and the traffic light method in a secondary school setting. These tools are beneficial to me as a teacher as I get immediate feedback so I can make adjustments to my teaching approaches on the spot. The children also enjoy presenting their work as they are engaged in the lesson, knowing that I am paying attention to all of them.

What helped: In terms of support, I was very fortunate to have my principal, who is a former HOD for Mathematics, to guide me on how to conduct work appraisals and the expectations of teachers' marking and students' work in a primary school setting. Because of this, I gained much clarity on the required standards. I had a mentor, the HOD (Mathematics), who showed me the ropes on what it meant to be a curriculum leader and the necessary skills required in the area of Mathematics leadership.

I also had a "buddy", who teaches the same level and subjects as I do. During the early stage of my transition, I would clarify with my buddy about being a form teacher, as well as school programmes and procedures in this new context.



MR MARTIN GOH
LEVEL HEAD (MATHEMATICS),
TEMASEK PRIMARY SCHOOL
(Previously at Jurong Secondary
School for 3 years, and the Academy
of Singapore Teachers for 2 years)





[JUNIOR COLLEGE → PRIMARY]

CLASSROOM CONFIDENTIAL

What's different: Back in junior college, I posed questions and facilitated answers. However, in a primary school, I have to teach moral values, discipline and relationship building as well.

Classroom management is not something I had to plan much for in JC, but sensing my primary students' moods and using engaging materials have become part of my everyday repertoire now. My steep learning curve also includes teaching pupils with special needs, and finding ways to ensure that they are learning to their best ability.

What helped: I think what was most useful for me was the opportunity to meet and stay in contact with fellow cross-deployed teachers as this formed a strong support network for me. Extensive resources in primary school teaching have also been a life-saver in guiding lesson-planning as well as making pitching of lessons and differentiation for high, middle and low progress learners that much easier.

Having a great mentor also made an impact. With his guidance and the help of experienced middle managers, I was able to grow as a reflective practitioner, who is continually learning and seeking ways to improve myself as an educator.



MS DIVYA DHARSHINI
SCIENCE TEACHER, ACS PRIMARY
(Previously at National Junior College
for 4 years)

[SECONDARY → PRIMARY]

OUT AND ABOUT

What's different: In my first year at De La Salle, I was deployed to teach a challenging Primary 1 class and told not to take them out to any open spaces as they would be difficult to manage. Surprisingly, the students were quite well-behaved and they managed to do their sculpture mindfully.

What helped: By testing out my ideas, I was able to gain a deeper understanding of the class profile and identify areas of improvement for the following year's scheme of work. This helped me in my transition as I was able to experience first-hand why some ideas worked well and others did not. My learning style has always been to experience things first-hand, rather than avoid doing things just because other people tell me, "Oh no, don't do that, it won't work."



MS NURUL IZZAH BINTE BASIRON
ART TEACHER, DE LA SALLE SCHOOL
(Previously at Cedar Girls' Secondary
School for 3 years)



[JUNIOR COLLEGE ➔ SECONDARY]

STAYING ON TRACK

What's different: Most secondary schools offer three streams. Teaching class in the Normal (Academic) and Express streams provided me an opportunity to practise differentiated instruction, which challenged some assumptions I had about teaching a particular topic. Say, inflation for example. How should I explain the concept of "inflation" during the Japanese Occupation to Secondary Two students with little prior knowledge of economics?

I realised it was necessary to simplify the idea and use examples that students can relate to. I asked my students to find out the prices of their favourite foods in the canteen, and asked them how they would feel if it were 100x more expensive; how much food, for example, will they be able to buy with a \$5 daily allowance?

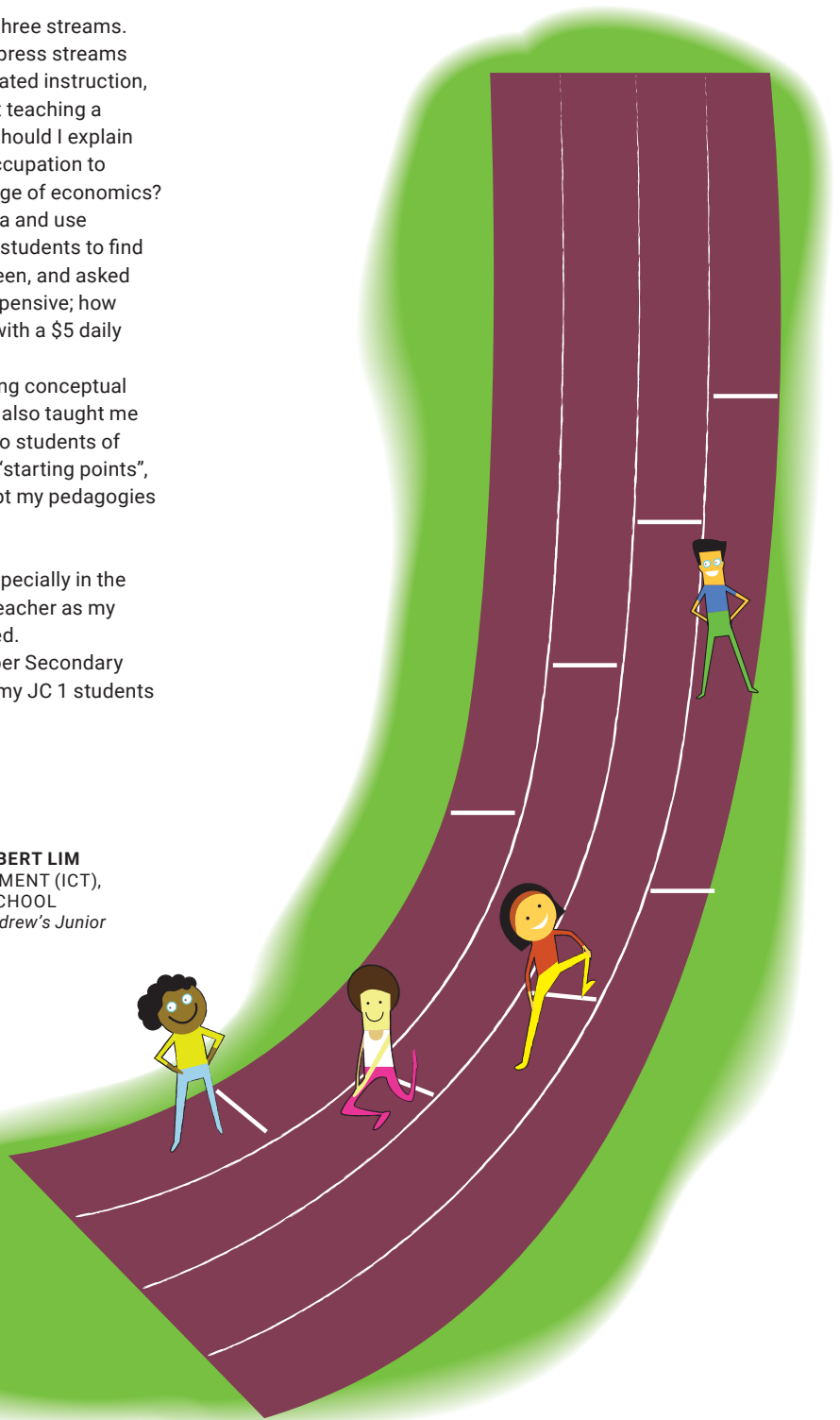
This experience taught me that having a strong conceptual grounding is paramount for effective teaching. It also taught me to draw appropriate analogies that are relatable to students of different ages. Different students have different "starting points", and I learnt to manage my expectations and adapt my pedagogies accordingly.

What helped: The transition was quite difficult especially in the first few weeks, but having a more experienced teacher as my buddy for my Secondary One classes really helped.

Within a few months, I could see that the Upper Secondary students are simply slightly younger versions of my JC 1 students and I was able to settle in comfortably.



MR BRANDON ALBERT LIM
HEAD OF DEPARTMENT (ICT),
GAN ENG SENG SCHOOL
(Previously at St Andrew's Junior
College for 3 years)





[SECONDARY → PRIMARY]

AN OPEN MIND

What's different: Compared to secondary school students, primary school pupils need more frequent reminders, especially when it comes to safety. Setting routines and guiding their behaviour with specific strategies are crucial.

A challenge I faced was learning how to manage my pupils' emotions and behaviour. This was something that my new colleagues helped with immensely. With this in mind, I have found that no matter what subjects you teach, the teaching of social and emotional skills to primary students is very important, and this needs to be more explicit in my lessons.

I think primary school pupils are also at an age when adults, including teachers and parents, have a bigger impact on their development. Parents are usually more involved and monitor their children's progress closely. It's important for teachers to have open and regular communication with parents in order to engage them about their children's lives in school.

What helped: The Cross-Level Deployment Course (CLDC) really helped. Courses such as Teacher Student Relationship and Supporting Students with Special Educational Needs also enabled me to understand this new demographic, which is very

different from my experience in secondary schools. The two-week attachment in my primary school prior to CLDC was valuable too, as it allowed me to interact with the pupils and meet my colleagues.

Taking these courses also gave me a few months to prepare myself mentally. Having a positive mindset will help a great deal during your transition, regardless of where you're posted to. My advice would be to always stay optimistic, learn from other teachers, and always try and try.



MR SU WEILUN
SCIENCE AND MATHS TEACHER,
NAN CHIAU PRIMARY
(Previously at Evergreen Secondary and
Compassvale Secondary for 9 years)

THREE TIPS TO ACE CROSS-LEVEL DEPLOYMENT

#1 – Be prepared

Courses like the Cross-Level Deployment Course (CLDC) offered by the Academy of Singapore Teachers (AST) can help teachers familiarise themselves with the standard syllabus and pedagogy used at their new schools before being transferred. This includes an attachment at the school, which allows teachers to observe their new students and how other teachers engage them in the classroom.

#2 – Don't be afraid to ask for help

Having a strong support network during the early stages of your new post is key to a successful transition. Work with your "buddies" and mentors and don't be afraid to reach out to other colleagues if you need a better understanding of your school's policies and procedures, which may differ from school to school. Talk to other cross-deployed teachers who have undergone the same experience.

#3 – Keep an open mind

Adjusting to a new teaching environment is never easy, but you can make your transition smoother if you have a positive mindset and welcome these changes. Teaching students of different ages will challenge your own assumptions about your work. And if you keep an open mind, you may learn a lot about yourself as well, as these teachers have.



Getting Ahead by Getting Started

Mr Suresh Balakrishnan, Principal of Dunman Secondary, talks about helping teachers look into the future and making them brave enough to try to shape it.

When Mr Suresh Balakrishnan took the lead at Dunman Secondary in 2014, he encouraged teachers to put video recordings of their lessons on the school's online portal.

"I wanted the school to be a smart school, in line with the Smart Nation initiative," says Mr Suresh. "Putting up lessons digitally can benefit students who missed lessons for reasons such as, going for competitions or being on medical leave."

This, of course, was easier said than done. "As principal, it was easy to conceptualise the idea," Mr Suresh says with a laugh. "But teachers were either too shy to record themselves on video, or it was a lot of work to edit and upload the recordings."

Fast forward: Today, teachers at Dunman Secondary are used to the idea of classroom recordings. For Mr Suresh, it was about making time and technology a part of the same equation.

Contact: How did you get everyone on the same page?

Mr Suresh: It started with my school's speech day and my HOD of ICT. We couldn't fit everyone in the courtyard for the parade segment, so he figured out how to set up a live telecast in the school hall with smartphones.

Then, we realised we could apply a similar solution to another recurring issue: Whenever a student was injured and unable to climb the stairs, all lessons for that class had to move to the ground floor, since we don't have a lift. This caused a lot of inconvenience for students and teachers.

The next time this happened, we took the chance to pilot a project with the teachers. We set up one iPad in the classroom, and linked it to an iPad in one of the library's discussion rooms. The teachers continued their lessons as usual, while the injured student watched from the library. The teacher could communicate with the student through the devices.

Now, this is standard procedure. These teachers hit the record button as well, and upload the video clips for other students who might have missed those lessons. Teachers have gotten used to the idea. They tell me it's not so difficult or harrowing an experience.

Contact: How do you warm people up to new ideas?

Mr Suresh: One of the skills we want every student to acquire is global awareness. To do that, you either bring them out into the world, or bring the world to them. I started the Global Scholars

Programme this year. It is an initiative by Bloomberg Philanthropies, which offers a free e-learning platform for students around the world to communicate and work on projects. This worked nicely for students who do not wish to travel. Think of it like a more advanced version of a pen pal programme.

Their projects will tackle global issues such as water conservation and sustainability. I started this with just three interested teachers. The first cycle ended in June. Since then, my Science department has offered to champion this project, and make it a programme that all their teachers will run for students.

Contact: If it is not in the syllabus, where do teachers find the time?


Mr Suresh: That is why I've allowed three periods out of the average 28 a week to be used for initiatives like these. Teachers see these reflected in their timetables. This assures them that the school recognises their efforts, and they feel encouraged.

Other initiatives can be keeping the department's resources updated. Teachers who have strength in relevant areas will take this up, for instance, designing and curating

content for online platforms. When teachers are intrinsically motivated, and given the time, they strive to do a good job.

Contact: What about grounds-up initiatives?

Mr Suresh: A good example is the Makerspace in the school library. A common worry is that this might become a white elephant. However, my teachers took inspiration from a Learning Journey to Mahota Kitchen in Kitchener Complex. There, they saw a variety of spaces and activities all under one roof, from the supermarket and restaurant to event spaces for Zumba and craftwork.

My school library is now a hive of activities. Every month, departments take turns to run workshops for students. These workshops range from creating a portable arcade machine to customising a LEGO sculpture. Students, teachers, even parents, can sign up. The idea is for people to want to come to the library and explore. Seeing this heartens me greatly as a school leader. 

**"WHEN TEACHERS
ARE INTRINSICALLY
MOTIVATED, AND GIVEN
THE TIME, THEY STRIVE
TO DO A GOOD JOB."**



The Benefits of Optimism

Having a positive outlook in school can help students overcome setbacks and achieve their goals. Teachers play a crucial role in nurturing such resilience and mental well-being.

Happy and resilient students are more likely to enjoy learning, be motivated to succeed and bounce back from setbacks and failures. That is why more teachers are embracing positive education, which aims to impart both academic and well-being skills, such as ways to cope with stress and other negative emotions.

In Singapore, studies have shown that even a few simple exercises can boost students' positivity, inner strength and engagement in the classroom, according to researchers from the National Institute of Education's (NIE) Lifelong Learning, Cognition and Well-being Research Programme.

GRATITUDE AND HOPE PACKAGES

Dr Caleon, the Programme's Co-Director, has developed several positive education packages currently used by more than 2,000 students in Singapore and a college in the Philippines. As

part of her gratitude-related package, students write down what they are grateful for and the reasons for their choices.

"We found that these and other exercises improved the relationships between the students and their teachers and peers, or prevented their deterioration. The activities also increased the students' well-being, in terms of their life satisfaction, and prevented an increase in their depressive symptoms, such as feelings of loneliness and worthlessness," she said.

Her hope-related package, on the other hand, helps students to define and achieve their goals. Students are taught how to set realistic, valued and measurable goals, and to identify strategies and steps towards those goals. They are also asked to think about potential obstacles, how these can be overcome, and how they would feel upon success.

"When we look at the future, we need to believe that we can achieve what we desire. We need hope. By visualising their journey towards their goals, the students become more aware of

the resources that they have, feel more capable of achieving their goals, and are more motivated to do so," said Dr Caleon.

TURNAROUND TEACHERS

Teachers can also encourage a positive attitude towards learning and better engage academically at-risk students through a few practices in the classroom, according to the findings of a large-scale study of secondary school students in Singapore conducted by the Lifelong Learning, Cognition and Well-being Research Programme.

"Turnaround teachers", so-called because of their ability to help poor students improve their grades, invest more time and effort in getting to know their students, provide more detailed and personalised feedback on assignments, and offer more opportunities for students to be more deeply involved in classroom activities, said Dr Caleon.

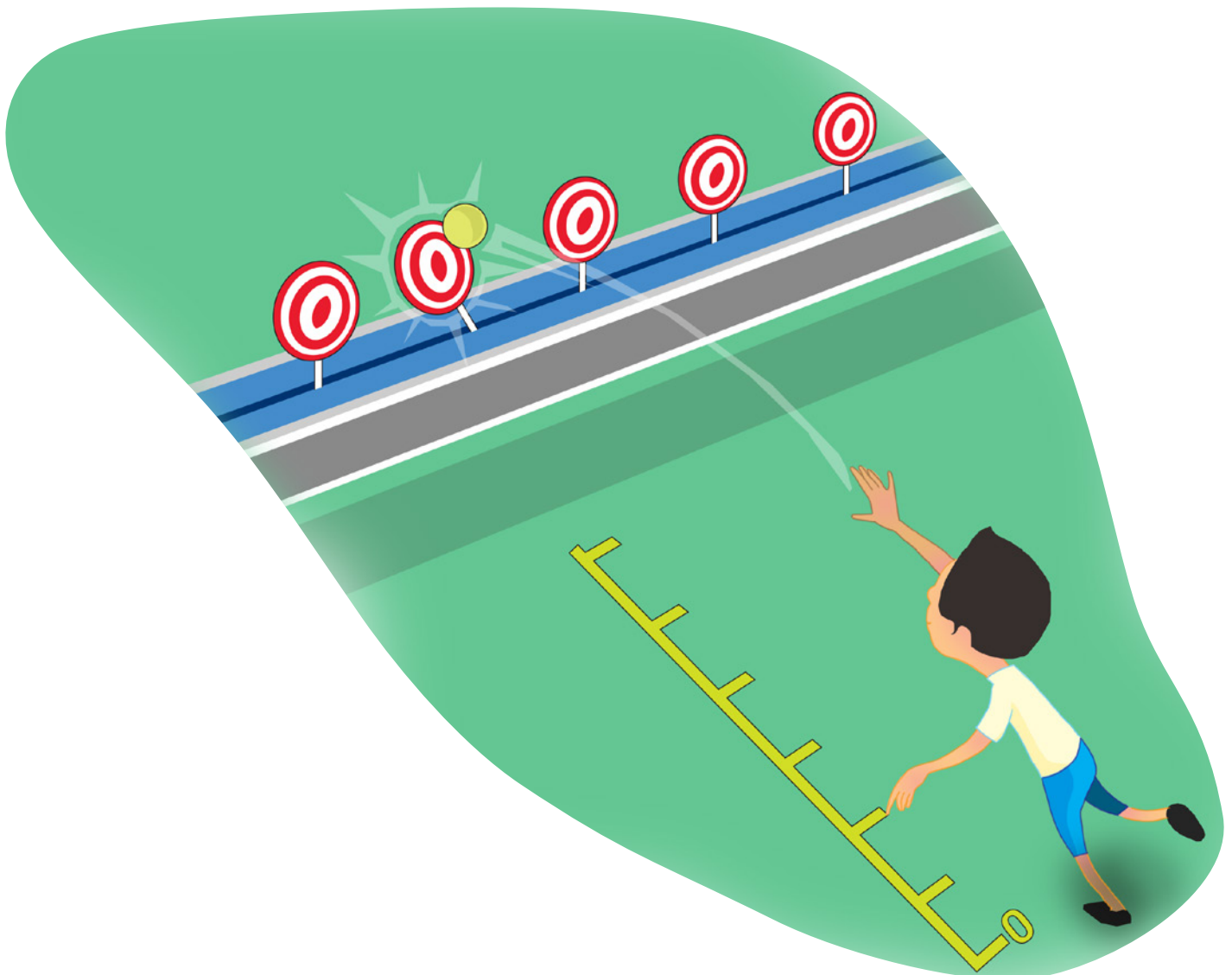
In one instance, when a student mentioned to her teacher that

the week was very tiring, the teacher asked the student to explain her feelings and what made her feel that way. She then advised the student that others sometimes felt the same way and that her reaction was normal.

In another example, a teacher not only gave a student regular, specific advice on how to improve her writing, but also acknowledged her improvement in subsequent assignments. "Students remember such sustained interactions positively, and it has a big impact on their learning and interest in class," said Dr Caleon.

Students also pay more attention when they are given options. Turnaround teachers allow students to choose their seats and group work partners, prepare multiple modes of instruction, such as videos, texts and hands-on activities, so that students can decide how they want to learn, and ask for volunteers to answer questions.

**"STUDENTS REMEMBER
SUCH SUSTAINED
INTERACTIONS POSITIVELY,
AND IT HAS A BIG IMPACT
ON THEIR LEARNING AND
INTEREST IN CLASS."**





OPTIMISM FOR TEACHERS

Such openness can benefit the teachers too, said researchers in NIE's Psychological Studies Academic Group (PSAG). In one of its studies, some teachers were given pre-lesson activities such as e-worksheets and videos before class, and brought their learning to class for discussion, while others taught using conventional PowerPoint slides, lectures and activities.


"The teachers in the first, experimental group had a statistically significant gain in their growth mindset. People with a growth mindset believe that they can make positive changes in their lives and are more willing to change for the better. They also reported significant increases in creative thinking and critical thinking," said Dr Teo Chua Tee, a PSAG Lecturer.

A positive attitude and understanding of psychology will help teachers to become more effective in connecting with their students, said Associate Professor Caroline Koh, Head of PSAG.

"We have teachers who are baby boomers teaching students who are millennials and post-millennials."

"Our students are growing up in conditions very different from those of their teachers. An understanding of psychology would help teachers understand the differences rather than finger-point, to query and explore possibilities rather than lament and moan, and to see new possibilities and hope rather than dwell in cynicism and indifference," she continued.

She concluded: "To help students learn and achieve, we need to understand the mental processes involved in their learning and behaviour, and how their thoughts and emotions affect their behaviour."

The power of positive education can then enable the students to better handle the difficulties in their lives, develop good mental health habits, and reach their full potential. 

PREPARING FOR LIFE AFTER SCHOOL

Most students could use a helping hand while contemplating post-graduation life. Like schools in Singapore, overseas institutions have developed practical, innovative ways to help their students explore higher education and career options.

Choose Your Own Adventure

[Germany]

At the Mohnesee-Schule Secondary School, education and career guidance is framed as a treasure hunt. Students receive portfolios containing a story and a letter inviting them on a quest to discover their skills and strengths. The idea is to get them thinking about their passions. Along the way, they give class presentations on the outcomes of their treasure hunt, and seek feedback on areas in which they have done well. Twice a year, students showcase their talents to an audience of school mates, teachers and parents in the 'Arena of Strengths'.

Source: GIZ, bit.ly/GIZCareerGuidance



AYE, AI

35 The number of universities in China rolling out undergraduate programmes in Artificial Intelligence (AI) this year, in a bid to cultivate a new generation of talents in AI research and application.

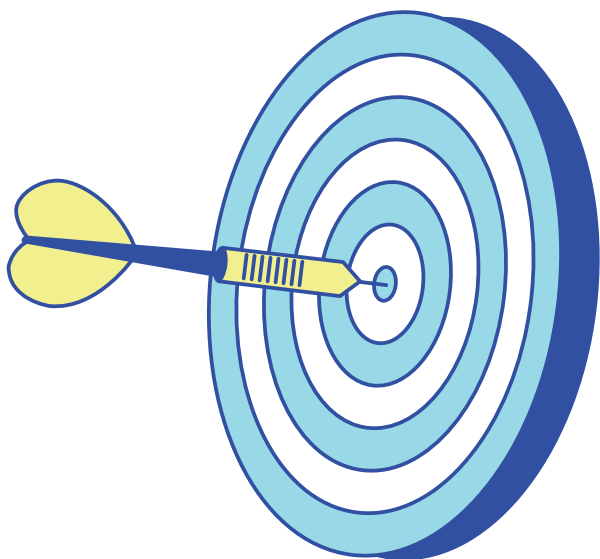
Source: Xinhua News Agency, bit.ly/ChinaAIColleges

Get Tinkering and Thinking

[United States]

Students considering a career in science, technology, engineering and maths? Let them get hands on! The Chula Vista Elementary School District partnered with the city's government to set up makerspaces in the library, where primary level students can experiment with building energy-efficient homes, testing wind turbines, or designing electrical circuits – among other activities. They also learn about nearly 50 different careers available in the region, and take home "career cards" with in-depth information about specific jobs.

Source: San Diego Workforce Partnership,
bit.ly/ChulaVistaElementarySch



Hitting the Career Bullseye

[Australia]

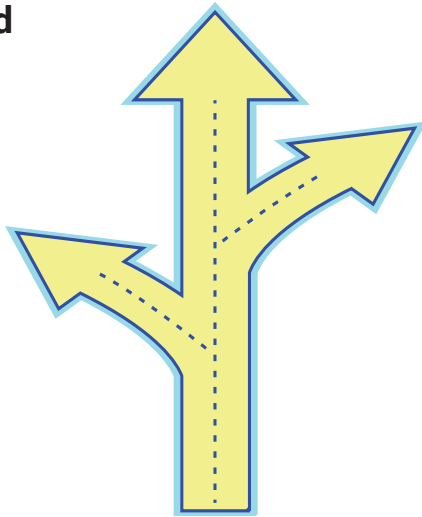
The Australian government created a series of posters to show students the myriad career options that could flow from 33 subjects. The posters show concentric circles around a subject – like a bullseye – each circle representing a level of mastery. For instance, students who have a fervour for art can see the ideal level of mastery required for occupations like cartoonists, make-up artists, art therapists or museum curators. The posters also include the usual skill requirements for each job, and links to national career planning websites. Some of these resources feature interviews with young adults, who have studied the subject and their subsequent professional careers.

Source: Australian Government Department of Education,
bit.ly/EducationAUGov

Planning the Road Ahead

[Canada]

At the Halton District School Board, students from grades seven to 12 maintain an online Individual Pathways Plan. The students review and revise it at least twice a year. They consult parents and teachers, document what they have learnt about themselves, consider the opportunities available to them in their school, and discuss how they plan to achieve their goals. Then, they upload their plans to a career-planning website, which aids them in choosing the school courses that lead to their preferred careers.

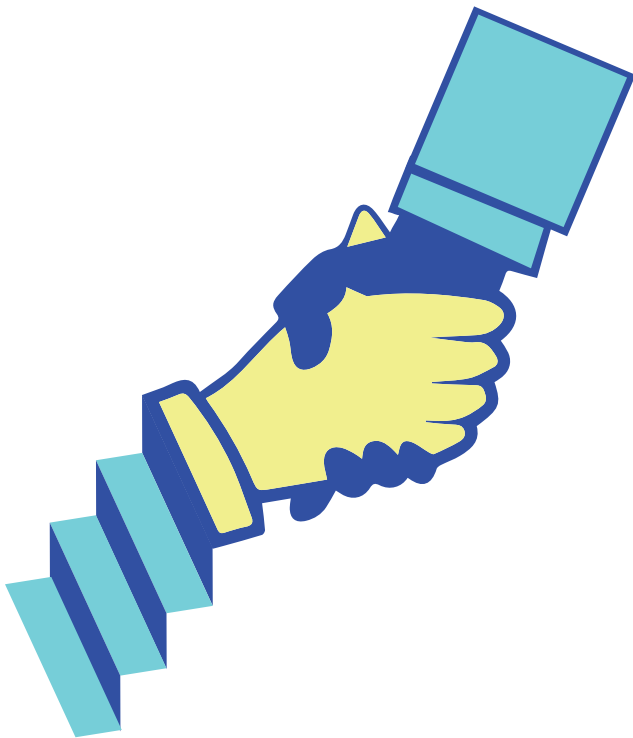


Source: Halton District School Board, bit.ly/HaltonPathways

YOUNG AND TALENTED

56
The number of skills areas in which youths from around the world competed at WorldSkills, also known as the “Youth Olympics of Skills”, hosted in Kazan this year.

Source: WorldSkills Singapore, bit.ly/WorldSkillsSGKazan



Planned Progression

[Britain]

It takes a community to forge a career. At Penketh High School, students start to plan for their future in a five-year programme that includes: introductory lessons to Britain's National Careers Service website in Year 7, interviews with the school's careers advisor and workshops on employability and transferable skills in Year 8, visits to post-secondary schools and meetings with local employers and businesses in Year 9, a one-week work experience and sessions with alumni in different professions in Year 10, and practice interviews for university and job applications as well as guidance on apprenticeship opportunities in Year 11.

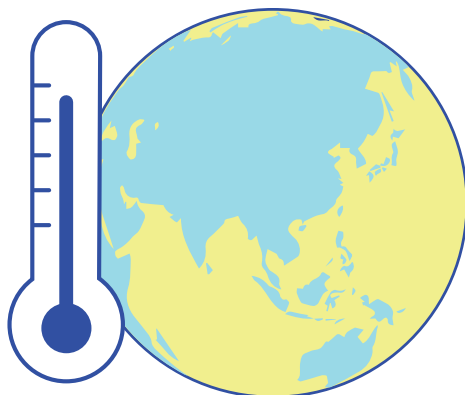
Source: Penketh High School
<https://www.penkethhigh.org/caig-2/>

Open Universities

[Japan]

Japanese high schools are collaborating with universities, so their students can attend short lectures and courses on various subjects. This is to pique the younger students' interests and expose them to different disciplines. For instance, at Ochanomizu Senior High School, students can take classes at Ochanomizu University and participate in a career guidance day to learn more about the university's courses.

Source: Ochanomizu University
Senior High School,
bit.ly/OchanomizuSchools



TECH TALK

4I
A bucket list of knowledge, skills and abilities in digital technology that businesses in Washington, US, look for in fresh graduates.

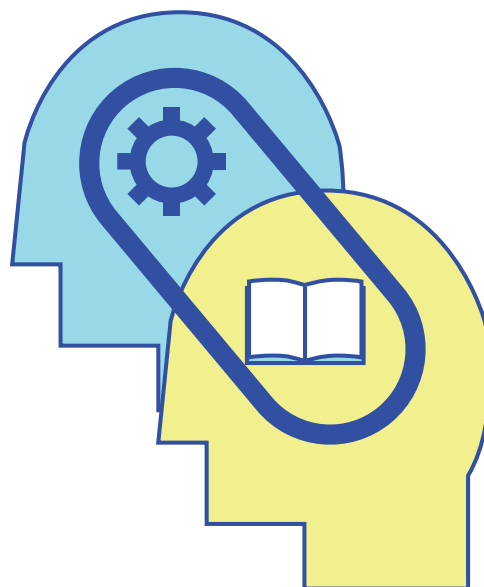
Source: The Washington Post,
bit.ly/GreaterWashingtonPartnership

Exploring the World of Work

[New Zealand]

Lincoln High School has multiple ways for its senior students to dip their toes into the job market. Under the Work Exploration programme, students can work for one day in a local business. A Gateway programme combines school study with longer work stints for those who are more certain of their professional aspirations. In their penultimate year, students can also apply for concurrent studies between their school and a tertiary trade academy. This allows them to get a head start in vocational training.

Source: Lincoln High School,
bit.ly/LincolnSchool



sparking joy in the classroom

Every teacher has a set of favourite teaching strategies. We asked the finalists of the President's Award for Teachers to reveal some of their key strategies to keep their students motivated and keen to learn.

Apps for mathematics

**MR JOEL LIM,
FAIRFIELD METHODIST SCHOOL (PRIMARY)**

"I love using technology for teaching Math! 'Google Earth' helps students relate to area and perimeter concepts using locations they are familiar with. 'Tayasui Blocks' can be used to teach volume and surface area. Cube structures created using this app can be painted, rotated or taken apart, which strengthens visual-spatial skills. Finally, I like 'Seesaw' and 'Nearpod' which provide students a chance to record, present and discuss their work online, or engage in Math tasks specially designed for them."



Inquiry through movies

**MISS HING MUI HONG,
KEMING PRIMARY SCHOOL**

"My favourite teaching strategy for English writing is inquiry through meaningful videos and movies. This helps students stretch their story ideas. I used this approach when teaching a P6 class last year, and showed them snippets of the movie Children of Heaven. I paused at pivotal moments of the movie, and asked my students, what should happen next if they were the movie director. This questioning led them to come up with story plots, which make their writing more interesting."

Time is key

**MR DAVID KELVIN VAITHILINGAM,
MERIDIAN SECONDARY SCHOOL**

"Spending quality time with my students is key, whether it's conducting a good PE lesson or training the school's student leaders. Knowing them by name is just scratching the surface. I have conversations with them to understand what makes them tick and what hinders their progress. I do my best to find out where they come from, and help them plan their life trajectories so they can fulfil their potential."

*Connect the dots*

**MDM SARAH KOH HUI KHOON,
HOLY INNOCENTS' PRIMARY SCHOOL**

"I teach my students musical concepts by linking them to their understanding of Mathematics and Science. For example, using Mathematics Fraction Discs to represent note values in music. Cross-disciplinary knowledge shows students that what they learn in school does not exist in silos. This is what triggers the spark in my students' eyes, and helps them find joy and meaning in what they are learning."

See the links

**MR TEO YEE MING,
HAI SING CATHOLIC SCHOOL**

"I bring in my experiences and professional knowledge, and relate Mathematics or Design & Technology to something that the students can appreciate. I want the kids to go "Oh! I see! So this is what it's for!" The secret ingredients in teaching are the strengths and professional experiences of each educator, which we use to make each lesson come alive."



Flipped Classroom & Inquiry-based learning

**MDM LEE TECK MIANG,
EVERGREEN SECONDARY SCHOOL**

"My favourite teaching strategies include using Flipped Classroom and inquiry-based learning. I use the time in the classroom to help students draw links between what they are learning in Food and Nutrition, and what they experience in their daily lives. These strategies also give students more time in class to ask questions and clear their doubts, and help them revise for their exams."

*Word flood strategy*

**MR MOHAMED AZHAR BIN MOHAMED NOOR,
INNOVA PRIMARY SCHOOL**

"In some kindergartens, the objects in the classroom are labelled: there's a 'WINDOW' sign next to the window; a 'TABLE' tag tied to a table. This 'word flood strategy' in early childhood education is proven to help students overcome what is referred to as 'word poverty' experienced by disadvantaged pupils. I decided to use this method to help build my students' Science vocabulary. Together, we created laminated cards with essential words and phrases used during lessons. These are not only learning aids, but also used for word games as well."

*Exploratory activities*

**MR LIU KAH YANG,
BARTLEY SECONDARY SCHOOL**

"As a Mathematics teacher, I find that exploratory activities help trigger students' desire to learn more. For example, if I am teaching basic trigonometric ratios, students can work to calculate the height of a tall object with just a metre rule and a handmade clinometer (an instrument to measure an angle at eye level). Students are given the time and space during lessons to deliberate on their approach, while the teacher guides the process so students are encouraged to learn more."

*Game show***MR VICTOR CHEW,
ROSYTH SCHOOL**

"Wheel of Fortune" is a game that I like to play with my students at the end of each topic I teach. For Chinese lessons, I use it as a Formative Assessment tool to check if my students understand the meaning of the words and phrases taught in class. They get to spin a wheel, which decides how many points they will earn for each question, which adds to the thrill and excitement of the game. It is also important to act like the host Pat Sajak, from the TV show!"

*Differentiated worksheets***MR SYAM LAL S/O SADANANDAN,
BUKIT BATOK SECONDARY SCHOOL**

"My favourite teaching strategy is using Differentiated Instruction to teach a Science topic. It requires us to plan a lesson and carry out a pre-test to determine the entry level of our students for a topic. Then, we create differentiated worksheets catering to students of different ability levels. Knowing the starting point for each student allows me to provide relevant scaffolding, so that the students reach the same end goal at the end of a lesson."

These are the finalists of the President's Award for Teachers 2019 under general education. For the full list including post-secondary education institutions, visit bit.ly/presidentsaward2019

CODING CONFIDENCE

Polytechnic students in Dr Koh Noi Sian's programming classes can count on an invisible teaching assistant: an AI-powered "affective tutoring programme". Essentially, the system uses artificial intelligence to recognise if a student is stuck and about to give up, before providing a 'pop-up' hint.

This AI assistant is the brainchild of Dr Koh, a senior lecturer in data analytics at Nanyang Polytechnic. She is the principal co-investigator of the affective tutoring system. It relies on the web cam to capture students' facial expressions to identify signs of frustration, while students' typing speed and pauses provide insight into the student's mental state.

Data collected from the system is also helpful to tutors, who can see trends in the topics that students are weak in. Tutors can then adjust their teaching techniques as necessary.

"Emotions can affect how students understand and apply their knowledge," says Dr Koh. "We don't want our students to give up because they feel frustrated with a problem."

Read the full story here: bit.ly/CodingConfidence

Dr Koh Noi Sian is a recipient of the President's Award for Teachers 2019 for Post-secondary Education Institutions.

THE FUTURE AND AI

Some may have misconceptions about what Artificial Intelligence (AI) can or cannot do. Mr Suraj Nair of MOE's Educational Technology Division addresses some possible myths about AI in education.



Myth 1

IT WILL REPLACE TEACHERS

As educators, we interact with our students at a deep and relational level. AI cannot replace teachers. AI can instead help us to do our work better. For example, it can help to free up our time by taking over more routine tasks. This will then allow us to direct our attention to more complex and innovative tasks such as building quality relationships with students, or exploring new teaching approaches.



Myth 2

IT ONLY SUPPORTS MASTERY OF A SUBJECT

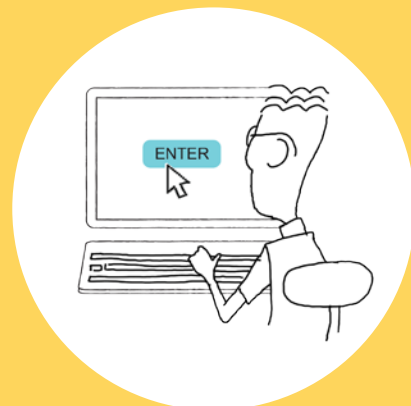
AI can support students in developing some 21st century competencies. For instance, AI can help to track and analyse students' progress in critical thinking and problem solving. It can then make recommendations for further development. Some companies have developed AI systems that encourage students to become better at learning by nurturing a growth mindset. Others have explored systems to support learning by taking into account students' emotional state and engagement levels.



Myth 3

IT WILL REDUCE INTERACTIONS BETWEEN STUDENTS AND TEACHERS

AI systems can actually promote higher quality interactions between students and teachers. For example, AI-enabled adaptive learning systems can provide us with real-time feedback on a student's progress. Empowered with such information, we can be more efficient and timely in addressing our students' needs.



Myth 4

IT WILL RESULT IN THE LABELLING OF STUDENTS

AI systems can indeed track a student's progress and provide detailed comparative data. However, this need not lead to the labelling of our students. We can programme the system on what learning data to track and display, which includes focusing on broader measures of success beyond the academic score. We could also exercise care in the selection and preparation of materials used to 'train' the AI system to reduce the possibility of bias.

You Never Forget a Good Teacher

Filmmaker Alvin Lee found his path to success because two teachers did not give up on him.



From left to right:
Mr Yip Wan Piu
(who is currently
teaching on a
part-time basis),
Alvin Lee, and
Mrs Ng May Fung
(who has retired from
the teaching service).



When a teacher believes, a child can achieve – that is the message in a short film, *The Speech*, produced and released in August by MOE. It shows the difference teachers can make when they believe in their students.

It is a message that resonated deeply with Mr Alvin Lee, who directed the film.

At 28, Alvin may be one of the youngest and most successful filmmakers in Singapore – but his story could have turned out very differently. As a student at Chung Cheng High School (Yishun), he not only skipped classes and fought with schoolmates, but also failed Mathematics for his Secondary 3 prelims – with grades that even shocked him.

“I got 9/100, and I knew it was the end for me if I didn’t pass my Maths next year for my O-levels,” Alvin recalls. “I was a rebellious student.”

A NEW BEGINNING

All that changed when a new Mathematics teacher walked into Alvin’s Secondary 4 class.

“Mrs Ng was very patient. She never really scolded us, and even when she did, it was more an expression of disappointment than of anger,” says the filmmaker.

“She didn’t make me feel demoralised; she didn’t make me feel like a loser, or a failure. I think on some level, because she didn’t give up on me, that’s why I didn’t give up as well.” Alvin says that because Mrs Ng believed in him so much, it guilt-tripped him into putting in his best effort. “She was so nice to all of us that I felt guilty for not paying enough attention in class. Thinking back, it was really effective to get me to care.”

Mrs Ng, whose full name is Ng May Fung, stood out for going the extra mile: To persuade her students to stay back for remedial lessons, she even treated them to pizza once.

“When she did that, it left a deep impression on me and the rest of my classmates.”

With Mrs Ng’s help, Alvin worked hard on the subject, even to the point of buying several assessment books to practise Mathematics problems on his own.

At the O-level examinations, he scored a B3 for Mathematics, which enabled him to pursue digital media at Singapore Polytechnic. He eventually specialised in visual effects and motion graphics. From there, he received a government scholarship to study at the prestigious Beijing Film Academy, beating over 1,000

applicants. Since then, he has won a string of awards – both in Singapore and China, including Best New Director at the 2016 China Short Film Golden Hummingbird Awards. The awards are the country’s first national-level event for short films.

In Singapore, he directed film segments showed at the National Day Parade 2019. These featured four people and how their stories are linked to the progress of the country.

As a filmmaker, Alvin says the patient and soft-spoken Mrs Ng has had an influence on his method of directing.

“When I’m working with talents on set, I try to correct them and tell them what I want in a gentle way, instead of scolding them.”

AN UNFORGETTABLE REUNION

Mrs Ng retired soon after Alvin graduated from secondary school. “I went back a few times to school,” he says, “but Mrs Ng was no longer teaching.”

But there was another teacher, who kept in contact with Alvin throughout the years: his former Chinese teacher, Mr Yip Wan Piu.

“Mr Yip was also my form teacher for four years in secondary school,” Alvin says. “Even when I was studying in China, I would receive text messages from him congratulating me on milestones, like winning an award or appearing on TV. I was very touched.”

Last year, Mr Yip invited him to his daughter’s wedding. It was at the wedding that he saw Mrs Ng again.

It had been more than 10 years since he had graduated from secondary school.

Spotting her at the buffet line, he walked up to her and asked in Mandarin, “Teacher, do you still remember me?” In his hands was his phone, which showed a snapshot of his class photo in the school yearbook, in

case she did not remember him.

Mrs Ng, now in her late 60s, replied, “Of course I do,” as she pinched Alvin’s cheeks, like he was still her teen-aged student.

She said she had heard about his success as a filmmaker, and told him how proud she was of his achievements. He thanked her for not giving up on him in school.

“Aiyah, there’s no need to thank me,” she said to him.

The retired teacher and her former student then took a photo together, exchanged contact information, and promised to catch up another time.

Alvin had never forgotten Mrs Ng and Mr Yip, and their reunion was one he would not forget, either. He says, “Thanks to Mrs Ng, I passed my O-level maths, made it to polytechnic, and started on my path to filmmaking.”

“I wanted to thank her in person. It was a thank you that I’ve owed her for more than 10 years.” **4**

**“THANKS TO
MRS NG, I STARTED
ON MY PATH TO
FILMMAKING. IT’S
A THANK YOU
THAT I’VE OWED HER
FOR MORE THAN
10 YEARS.”**

DIFFERENT TRACKS, SAME MISSION

Retired Principal Master Teacher Mdm Varalackshmi Hariharan on how each of the twists and turns in her career enriched her journey as a teacher.

For someone who has retired, Mdm Varalackshmi Hariharan is a busy lady. Prior to our interview, she had just finished taking a class at Eunoia JC, where she is a part-time teacher. And after our interview, she would be marking General Paper essays at a nearby cafe. Retirement had been a brief affair – a short break in 2018 following which she returned to part-time teaching.

After four decades in the education service, it's hard to stay away from the classroom.

At 62, Mdm Vara (as she's known) describes her teaching career as "a series of serendipitous discovery" which saw her journey across all three career tracks in the Ministry of Education (MOE).

THE START OF A LONG JOURNEY

It is 1977. A 20-year-old Varalackshmi needed a job, and Singapore needed more English teachers.

"I joined the Institute of Education to train as a teacher," Mdm Vara says. "Ours was a three-year training scheme. We would have lectures from eight in the morning, rush through lunch at 12, and then report to school by 12.30 to teach until six."

The first indication that teaching could be the career for her was her when she realised she intuitively knew how to explain ideas and handle students in the classroom.

"It was practical before theory," she says. "I would instinctively solve a problem, and then later attend a lecture that would give a name to the classroom management technique I had used."

After four years teaching at Peck Seah

Primary and Pei Dao Secondary, Mdm Vara applied for an MOE Teaching Bursary. She got it, and graduated from the National University of Singapore in 1984 with Direct Honours in English Literature.

She was posted to Anglo-Chinese Junior College (ACJC), and has worked in the pre-university level since then.

THE FORK IN THE ROAD

Mdm Vara spent two full decades teaching the General Paper, first at ACJC, then at Jurong Institute (JI), which offered a three-year pre-university course. "My 12 years in JI were among my best years," she says. "Many of my students have become friends, with whom I still keep in touch."

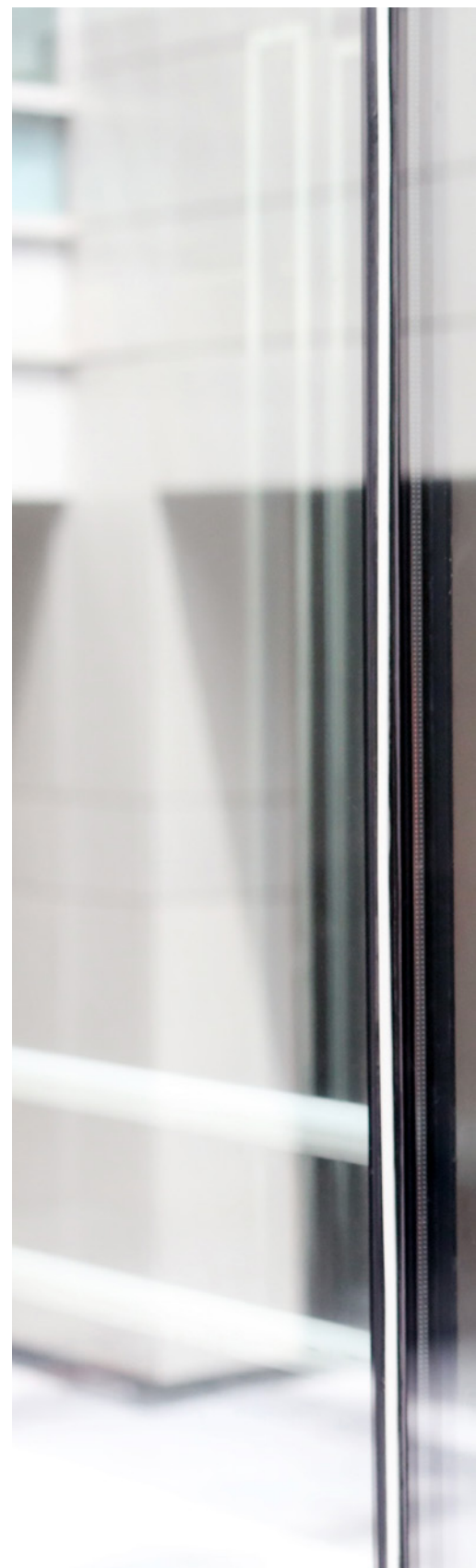
At JI, Mdm Vara was appointed as Head of Department (HOD). "That was the only career track open to us then. At that time, we 'punished' good teachers by making them HOD," she jokes.


She performed well enough to be invited to interview for a Vice Principal (VP) position, the next rung in the leadership ladder. This proved to be a pivotal moment in her career.

"I didn't clear the first VP interview I went to," Mdm Vara says. "My principal later told me that I had been too narrow in my vision, too focused on what my department was doing, instead of what the school was doing."

This experience pushed Mdm Vara to reflect on what she wanted out of her career as an educator.

"I was hurt by the rejection," she admits. "But the interview made me think. I needed to know what was important for me. I asked



A woman with short dark hair, wearing a bright red sleeveless top and a grey watch, stands on a balcony. She is leaning her hands on a white metal railing and looking out towards a modern building with large glass windows. The scene is brightly lit, suggesting daytime.

**"I NEEDED TO KNOW
WHAT WAS IMPORTANT
FOR ME. I ASKED
MYSELF, 'WHAT VALUES
ARE DEAR TO ME?
WHAT IS MY PURPOSE?
WHY AM I DOING WHAT
I'M DOING?'"**

myself, 'What values are dear to me? What is my purpose? Why am I doing what I'm doing?' I read a lot, and talked to mentors."

By the second VP interview, Mdm Vara was clear about where she stood as an educator. She told her interviewers that she was not keen on becoming a school leader.

"I had always thought I was just a good teacher, but after becoming a Head of Department, I realised I enjoyed coaching my teachers, as well as analysing and planning," she muses. "I realised as a Vice Principal I would do more coaching and analysis, but I would leave the classroom behind. I wasn't ready to do that."

While all this was going on, Mdm Vara had also been involved in piloting subjects that were going to be offered at pre-u level, such as Project Work, and Knowledge and Inquiry (KI). She was also a member of the KI Syllabus Committee. These gave her

exposure to the work of the Curriculum Planning and Development Division (CPDD) in MOE – something that would lead to the next step in her career

Around this time, a few things happened. In 2001, MOE formalised a new career structure for the Education Service: a teaching track, a leadership track and a senior specialist track.

After 12 years as HOD, Mdm Vara did not want to stay on the leadership track. So, in 2002, she applied to become a Master Teacher so that she could stay on the teaching track. But her interviewers felt that she would need wider experience, for example in a secondary school to contribute at the national level.

In 2004, JI (the school she had been teaching at) merged with Outram Institute to form Millennia Institute. Mdm Vara was not ready to transition to another school as HOD. So, she knocked on the door that caught her interest: CPDD's.

DOWN NEW PATHS

Mdm Vara's career can be divided into two parts: life before CPDD and life after CPDD.

She says, "After I went to CPDD, my world view opened up. Up to that point, my focus had been, 'How can I help my students pass GP?' and 'How can I help my teachers do their best?' At CPDD, we needed to think beyond the exams, about how education opens up options, and how we can enable students to access those options."

After entering CPDD in 2004, Mdm Vara met a curriculum specialist for the first time, and learnt about his work

"I developed a huge respect for the work they did. I liked their perspective, about making GP relevant to every student in Singapore,

from the junior colleges to the centralised institutes. About ensuring that the curriculum is robust, rigorous, meaningful, and forward-looking."

"I read articles from thought leaders that sounded like science fiction at that time. That's when I started hearing about 21st century skills, and it caught my imagination: The idea of doing deep work that will benefit students in the long run."


In her first two years at CPDD, she led the GP Syllabus Committee. She was invited in her third year to apply for the senior specialist track. She came to MOE HQ for two years, but stayed for seven, until a new opportunity came knocking.

In 2011, the English Language Institute of Singapore (ELIS) was established, and needed Master Teachers. "That drew my attention back to the teaching track," says Mdm Vara. "Now, I had a national perspective. My interviewers had been right: Back then, when I first applied to be Master Teacher, I was not ready to be on this trajectory. My contributions would have been limited."

In 2012, she received the Fulbright Distinguished Teacher Award, and spent a semester at the University of Maryland in the United States. There, she researched the US' National Writing Project, a professional development network for teachers. Its signature programme is a series of writing workshops collectively called the Invitational Summer Writing Institute.

"I wrote a feasibility study exploring whether this could be brought to Singapore and we started an invitational writing institute in 2014," says Mdm Vara. "Teachers who attended it loved it. In 2016, the Singapore Writing Institute was accredited by the National Writing Project, the second Asian city after Hong Kong."

In 2016, Mdm Vara was promoted to Principal Master Teacher, the pinnacle of the teaching track. This was the final step in her journey as an Education Officer. Retirement was around the corner.

"One of the saddest part of retirement was handing over SWI," she says. "But if there's one thing I learnt in public service, it is to do good work wherever you're planted, because we serve a cause larger than ourselves, and we must be ready to pass the baton." 



OUR SCHOOLS, OUR STORIES

PHOTO EXHIBITION 2019



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01 Nov – 30 Nov
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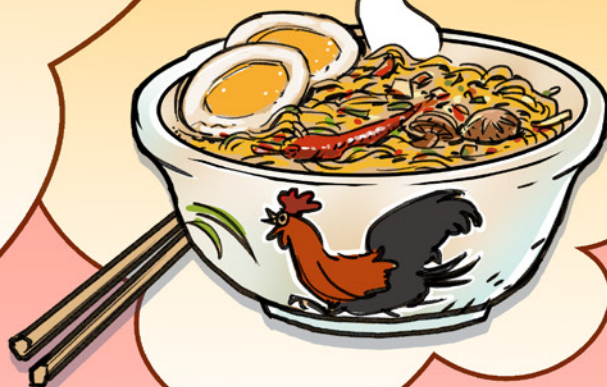
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1. Cook dreams in boiling passion.



2. Add enthusiasm and creativity, and let dreams simmer for 3 minutes.



3. Enjoy!

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