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Routine or Adaptive Expert - Which one are you?

Ever wonder why some people do well with routine tasks, but fail to perform when something unexpected crops up? And those who continue to remain high performers despite encountering novel problems? The difference between these two groups of people is what researchers term as "adaptive expertise".

The ability to groom healthcare professionals to become adaptive experts is important in a healthcare landscape that is increasingly complex and ever-changing. How can we help our learners to develop into adaptive experts? Is adaptive expertise learnt or a natural talent?

Recognising the need to train adaptive experts for a rapidly ageing population, Dr Joanne Kua, Programme Director for the National Healthcare Group (NHG) Geriatric Medicine Residency Programme, together with Associate Professor Lim Wee Shiong, Director (Institute of Active Ageing), Tan Tock Seng Hospital (TTSH), and Dr Winnie Teo, Deputy Director (Education Research), NHG Education, embarked on a study to understand factors that help the development of adaptive expertise in geriatric medicine specialists. The three collaborators, whose study was published early this year in the journal Advances in Health Sciences Education, share about what motivated them to conduct the study, and why they believe adaptive expertise is important at the workplace.

WHAT IS ADAPTIVE EXPERTISE?

Dr Winnie Teo (WT): The two concepts of Routine Expertise and Adaptive Expertise first came to us through the work of two researchers, Drs Giyoo Hatano and Kayako Inagaki. Routine experts are people who know "how something works" and demonstrate great proficiency and efficiency when performing tasks within a certain domain. However, when circumstances change, or a novel problem arises, the routine expert finds that they cannot apply the same "formula" to solve the problem.

In contrast, the adaptive expert is someone who not only performs routine tasks efficiently (because they know "what makes it work"), but also possesses a deeper understanding about "why it works". Having a deeper understanding enables them to devise (or improvise) new and innovative solutions whenever something new or different crops up, even if it is something that they have not experienced before.

A simple analogy would be that of a cook who follows a recipe to a T and churns out great-tasting food efficiently, but would be stumped if one of the ingredients is different or unavailable; versus a chef who is able to continue cooking the dish well on the day even when the required ingredient is not available - by making appropriate substitutions. In this instance, the chef can be considered the adaptive expert because he has the conceptual understanding of the dish, and the roles of the ingredients that make the dish.

WHAT MOTIVATED YOU TO LEARN MORE ABOUT ADAPTIVE EXPERTISE?

A/Prof Lim Wee Shiong (LWS): Geriatric medicine is a challenging field of medicine, as clinicians have to balance the medical, functional and psychosocial aspects of care, and often have to deal with uncertainty and unexpected turns. To a clinician-educator like myself, unravelling the learning experiences which help a learner become an adaptive expert is the educational holy grail!

Dr Joanne Kua (JK): I have been intrigued by this term 'productive struggle.' In my mind, how can any struggle ever be productive? How can I make my own struggles productive and how can I help my learners struggle productively? It's through adaptive expertise that I found the answer: providing guidance to our learners when they struggle helps them to expand the boundaries of their expertise. When our learners are able to develop a deeper conceptual understanding through their struggle, it helps them move from being a routine expert to becoming an adaptive expert. That's why it's a 'productive struggle'! I was thus interested in knowing more about the learning experiences that help develop adaptive expertise, as it shows me how I can be training my juniors to become adaptive experts.

From left: Associate Professor Lim Wee Shiong, Dr Joanne Kua, and Dr Winnie Teo

IS ADAPTIVE EXPERTISE A TRAIT THAT ONE IS BORN WITH, OR CAN A PERSON NURTURE AND DEVELOP ADAPTIVE EXPERTISE?

WT: Our study shows that traits such as curiosity and humility are important in the development of adaptive experts, as such attitudes help a person to learn continuously through life. However, our interview participants also emphasised that while some learners are naturally curious, curiosity can also be nurtured and encouraged in the workplace. This suggests that adaptive expertise can be honed over time with deliberate practice and intentional mentoring.

WHAT HELPS ONE TO DEVELOP ADAPTIVE EXPERTISE?

WT: What struck us in this study was that the development of adaptive expertise was influenced not just by individual actions and attitudes such as a sense of curiosity, and openness to learning, but also by processes and practices of the department or organisation – something we often refer to as "our workplace culture".

JK: It is known from other healthcare studies that a sense of responsibility towards patients drives the learning process, and sets the foundation for the development of expertise. In our study, participants elaborated that a sense of empathy helped them prioritise competing needs in the management of patient care. And being able to recognise and control one's own emotions (both positive and negative) helped them strike a balance, and not let emotions cloud their clinical judgment. Practices such as constant reflection and soliciting other perspectives were also important in integrating various inputs to optimise their learning.

LWS: One other important factor was time. Being able to set aside time during the daily grind to gather information, process and think through uncertainties was crucial to individual learning, yet a real challenge. As one participant put it: "We need to finish (seeing) all the patients within three hours, after which we have other (administrative) things to do. So, if you really want to do this properly, you need to bring the senior residents through those complex cases, sit down and go through each case with them. Which we don't have time for."

A workplace culture that emphasised psychological safety, and encouraged inquiry and learning was a key factor that many participants highlighted. As one participant put it: "Having an environment of psychological safety really helps a lot. Openness to discuss, feeling safe to discuss cases that you're not sure of can build up confidence."

An environment that encouraged discussion and learning, instead of placing blame, was important: "A punitive culture will create a defensive culture. Understanding that discussion is for learning and not for criticising... sometimes we find it very difficult because it seems that we are criticising the person... (what) we really need (is) an environment that we feel safe to discuss a case."

WT: Another workplace-related factor that was mentioned was mentoring – participants related that when seniors shared their perspectives on a case, it helped them understand the reasons behind their decisions. Having a "pool" of seniors who were ready to give different perspectives and mentor the juniors would also enable them to learn from various sources of expertise.

WHAT ARE SOME OF YOUR MAIN TAKEAWAYS FROM THIS STUDY? WHAT CAN WE IMPLEMENT IN OUR WORKPLACE?

LWS: It takes a kampong to develop our learners into adaptive experts. Indeed, it takes a concerted effort at the intra-personal, inter-personal and organisational levels to nurture an adaptive expert. Yet, this is what our healthcare system needs and what our patients demand to meet the challenges of an ageing population.

JK: In our study, traits such as curiosity are important for training in adaptive expertise. How can I pique curiosity as a teacher and how can I provide a learning environment that gives time for wondering and curious questions to be addressed? This is related to the practice of reflection which was also shared in our study. And eventually to the importance of mentoring. How can the Residency Programme situated within the institutions provide mentorship that develops reflective practice and allows curiosity to flourish? Hopefully it's a culture that needs to be cultivated and nourished so that it can then spark off a system of change that can then train future-ready practitioners.

Interested in reading more about the study about adaptive expertise?
Click here for the full article!

Associate Professor Lim Wee Shiong is the Director at the Institute of Geriatrics and Active Ageing (IGA), and Senior Consultant at the Department of Geriatric Medicine, Tan Tock Seng Hospital. He is also a Fellow of the American Geriatrics Society, and Associate Fellow of the Association for Medical Education in Europe. A/Prof Lim was awarded the outstanding alumni award 2016 from the Massachusetts General Hospital Institute of Health Professions, Boston, USA, and has a comprehensive track record of scholarly work across over 200 peer-reviewed publications in the areas of geriatrics, gerontology and health professions education. His research interests include frailty and sarcopenia; cognition-related disorders; caregiving; and interprofessional education and collaborative practice.

Dr Joanne Kua is the Education & Learning Lead at IGA (Institute of Geriatrics and Active Ageing), and Senior Consultant at the Department of Geriatric Medicine, TTSH. Her clinical subspecialty interest is in falls and balance, and her other interests are in active ageing and medical education. She started the active ageing programme (GRACE) and was recently conferred her Masters in Health Professions Education by Massachusetts General Hospital. Dr Kua is the current Programme Director for the National Healthcare Group Geriatric Medicine Senior Residency Programme.

Dr Winnie Teo, a molecular biologist by training, has always had a keen interest in education, and is currently a Deputy Director of Health Professions Education Research at NHG Education.

Revamping Clinical Placements with 'Running man', Bubble Tea and More

Diagnostic Radiography (DR) students will now receive a 'Running man' (Korean variety show)-themed orienteering mission, a 'Bubble Tea (BBT)' stamp card, and set personal goals when they go through their clinical placements at Tan Tock Seng Hospital (TTSH). These new learning interventions are part of a series of core initiatives introduced by the TTSH Diagnostic Radiography clinical educator (DRCE) team to increase the interactivity of DR-related education content for DR students.

Thankfully with the support of her department head, Mr Surender Naini, Ms Oh was able to expand her team to three full-time clinical educators (CE), which allowed her team to identify learning gaps and relook at the clinical education programme.

With the new 'Running man' orienteering mission, DR students will embark on a self-exploration journey to familiarise themselves within the Novena Health City campus; instead of being specifically orientated to the clinical areas in the hospital. This creates an ice-breaking platform for the CEs and students, whilst also allowing the CEs to identify budding issues. The mission was also designed to have the students 'see' the hospital with a 'fresh pair of eyes', and allow them to better empathise with the patients, especially the elderly, who have to navigate the large hospital compound.

In order to redeem a cup of bubble tea, the students would have to earn 20 stamps – each tagged to a unique DR topic or concept - by initiating one discussion topic daily with a CE.

"The gamification approach injects an element of fun and interactivity into routine tasks and learning points... keeping the students engaged in their learning across the four-week placement," said Ms Oh. "It also makes effective use of time during lull periods when there are no patients, to facilitate meaningful and tailored discussions."

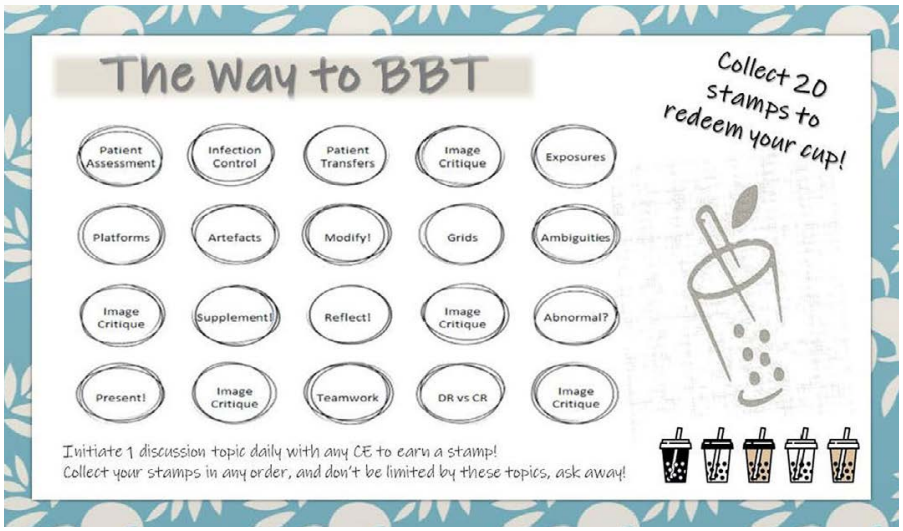
Aside from the BBT stamp cards and orienteering, students will also have the opportunity to plot their own personal educational goals using the SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) framework for the entire duration of their clinical placement. "The introduction of setting individual goals would make the students' learning experience more personalised, and concurrently help them develop a sense of ownership of their learning journey," explained Ms Oh.

These new initiatives were well-received by the students, with many commending on its tailored and engaging approach.

"(The) framework of the attachment period is wholesome, enjoyed every moment of the placement," shared one student.

"The CEs were helpful in passing on knowledge and thorough in explaining the BBT card topics and concepts... I had a fruitful experience", shared another.

"We are very happy that the new initiatives were very well received by our students... and very pleased that our overall feedback scores have increased by nearly 10 per cent after the introduction of these initiatives." Ms Oh said, and shared that her team will continue to create more initiatives and constantly re-evaluate the education framework, and progressively develop a culture of teaching in the department.



Students initiate one diagnostic radiography discussion topic a day to earn a bubble tea stamp

"We received feedback that the (previous) learning journey for the Diagnostic Radiography students was boring and generalised," shared Ms Felicia Oh, Clinical Educator Lead, Diagnostic Radiography and Radiation Therapy, TTSH, who spearheads the TTSH DRCE team.

"During their time with us, the students felt that there was a disconnect in their learning objectives across different educators when they rotated through various sections. And the delivery of learning content was also not well-calibrated across sections," she said, adding that this prompted her to re-evaluate the students' clinical placement experience.

"The gamification approach injects an element of fun and interactivity into routine tasks and learning points..."

- MS FELICIA OH

Diagnostic Radiography students embarking on their 'Running man' orienteering mission around the Novena campus

NHG REAL Series:

Lessons on Roster Planning from a 'Roster Monster'

The National Healthcare Group's (NHG) Resident Engagement And Leadership Development (REAL) series is back in a face-to-face format for the first time since the COVID-19 pandemic.

Dr Timothy Quek showcasing his four-monitor roster setup

On 1 February 2023, Dr Timothy Quek, Head of the Department of Endocrinology, Tan Tock Seng Hospital (TTSH) spoke to residents in a sharing session discussing the lessons he learnt from his experience planning rosters for many years, having been a 'roster planner' or 'roster monster' – a colloquial term referring to the assigned roster planner for clinical duties of doctors).

Dr Quek laid the context by introducing a 'roster' as "a list or plan showing turns of duty or leave for individuals or groups in an organisation". He mentioned that in planning rosters, the aim is to "meet a service need while producing the most happiness or least amount of unhappiness as is practical".

Whether they (the clinicians) feel happy at work, a lot of it is dependent on the roster — whether they are allowed to take leave on the day, whether they are given a call on that day... or they are not given a call on the day or weekend that they really needed to do something," said Dr Quek.

"Rosters are the link between work and life."

He noted that many clinicians plan their lives around the roster, and the experience of "loss aversion" can also become very "emotionally charged" when clinicians' personal plans are disrupted because they are called for duty (on call).

Dr Quek urged for roster planners to "understand that kind of emotion" and not be apathetic, because the "unhappiness that it creates can lead to many other consequences" such as job dissatisfaction and even resignations.

He shared 5 lessons he had learnt from roster planning.

1

TRUST IS THE MOST IMPORTANT COMMODITY – YOU CANNOT MAKE EVERYONE HAPPY

The first lesson he highlighted was that trust was the most important commodity in roster planning. "When you make a certain decision, not everybody may be happy, but people must at least trust that you have the best of intentions, and you did to the best of your abilities what could be done for the group," he said.

Roster planners inadvertently learn a lot about the lives and personal struggles of many clinicians, shared Dr Quek. Hence, being empathetic and having a listening ear are important in building trust between the roster planner and clinicians.

2

ABOUT FAIRNESS

The second lesson he highlighted was that "true fairness is a myth. However, the perception of fairness is crucial for morale."

"(The desire for fairness) is a biological trait. We intrinsically feel that things must be fair," he said. To illustrate the concept of perceived fairness, he asked the audience – if a clinician had taken medical leave on his call day, should he be required to pay it back when he returns? "Whether to make this person pay back depends on the group," he said, advising planners to act on what he/she believes the group, clinical department or team, would deem fair.

"My preference nowadays is to use the word 'sensible' (rather than 'fair')... (Rostering) must be sensible," said Dr Quek. "And it's sensible to not make people unhappy."

However, he also noted that in certain instances, the need for recognition can help to make up for our intrinsic need for fairness. Drawing upon his past experience, Dr Quek shared that he would send emails or WhatsApp messages to the entire department to acknowledge clinicians who had helped to cover colleagues when they were away. "It is important... because even though the individual is feeling unhappy for having to cover someone else's duties... the next day his/her colleagues may go, 'Thanks ah! For helping take the call!'", he said, adding that such gestures make them feel acknowledged and appreciated.

3

SEEING THE BIG PICTURE

The third lesson was to remember to balance the important needs, with a view of the big picture. When planning the roster, it is important to put oneself in the shoes of the doctors they are planning for, whilst also taking into consideration other factors such as patient safety, service needs, efficiency, and welfare. When making important decisions, Dr Quek stressed the importance of collating data to make more informed decisions, rather than making changes based on hearsay. "You will realise that the numbers tell you a different story," he said.

4

ADAPTIVE SOLUTIONS, NOT PLUGGING HOLES

His fourth lesson was "the more parts, the more inefficiency". He illustrated this with an example where breaking the work up into many smaller parts created inefficiency in the Division of Medicine call roster and the perception of insufficient manpower, although the total amount of work was reasonable. Hence, in that situation, understanding this and allowing for flexibility to reallocate manpower depending on need would be important, rather than increasing the number of people placed on call.

5

PRECEDENT IS CRUCIAL IN MANPOWER PLANNING

For his final lesson, Dr Quek emphasised how important precedent was in manpower planning. He illustrated how having more manpower or too little manpower than required for the amount of work often results in the way that work is done. Speaking from experience, he shared that, with time, the amount of work tends to expand to fill manpower; or contract when manpower is insufficient. As a result, sudden changes to manpower supply and rosters are often quite destabilising for clinicians.

Therefore, he cautioned against changing workflows when there is a short term influx of manpower, which was not sustainable, as this often results in problems in the medium and long termwhen the manpower is subsequently reduced. Alternative solutions to address manpower shortages such as reallocating manpower depending on need, and having larger teams cover larger areas to improve efficiency would be important alternatives to consider.

"Rosters are the link between work and life."

- DR TIMOTHY QUEK

NHG Welcomes 111 Post-Graduate Year 1s!

Dr Vishualkumar G. Shelat, PGY1 Programme Director (Tan Tock Seng Hospital), addressing the new PGY1s

National Healthcare Group (NHG) welcomed 43 Post-graduate Year 1s (PGY1) and 68 PGY1s at Khoo Teck Puat Hospital and Tan Tock Seng Hospital (TTSH), respectively, on 24 April 2023, as they begin their 12-month training as registered medical professionals.

The 111 PGY1s started their journey with a week-long orientation, attending talks by clinicians from various specialties, role-playing doctor-patient communications, patient safety trainings, and job shadowing to prepare them for real-world clinical work and training.

"One year will pass in a blink of an eye," said Dr Vishalkumar G. Shelat, PGY1 Programme Director, TTSH.

"A lot of things will happen to you (this year), you will grow professionally during this time... all the (medical) knowledge that you have gained for the past five years will then show how it translates to clinical practice."

He urged the PGY1s to take this time to think about what they want to do in their careers – if they want to embark on the management route, specialist route, etc., and to explore areas which they are interested in.

"Our intention is to teach you well, test you well, as well as treat you well," said Associate Professor Faith Chia, Designated Institutional Official, NHG Residency, in her address.

"We want to ensure that you have adequate training so that you will be able to progress on to the next stage of your career, at the same time we want to ensure that you serve the needs of our population, and keep our patients safe."

"And we hope that during this period of time with us, even though it's a short four months, you do feel that you are part of this family... that you receive enough clinical exposure, and the support from faculty," she concluded.

PGY1s at Khoo Teck Puat Hospital doing their mask fitting and fit test

Follow the link or visit https://www.facebook.com/NHGEducation to view photos from the orientation

Congratulations Dr Anabelle Seah

on being awarded the National Outstanding Post-Graduate Year 1 Award 2022!

National Healthcare Group (NHG) Education would like to congratulate Dr Anabelle Seah, NHG Internal Medicine Resident, on being awarded the National Outstanding Post-Graduate Year 1 Award in 2022!

The National Outstanding Post-Graduate Year One (PGY1) award is presented by the Ministry of Health to recognise medical graduates who have demonstrated consistency and excellence in the PGY1 training programme across their clinical skills, medical knowledge, personal attribute and work performance.

Education Overseas Education Expert -

Reconceptualising Simulation Beyond Individual Competencies

Participants attempting the "defuse the bomb" game as Prof Victoria Brazil and Dr Eve Purdy look on

"Simulation can be the space in between what's good in theory, and what we actually do in the real world," said Professor Victoria Brazil, Medical Director of the Simulation Service at the Gold Coast Health Service (GCHS), at this year's Education Overseas Expert Programme, held from 27 February to 3 March 2023.

Together with Dr Eve Purdy, an emergency medicine physician and applied anthropologist at GCHS, they were invited by Woodlands Health and the National Healthcare Group (NHG) College to share their expertise on Translational Simulation and how to build high performing teams to drive team performance and quality improvement.

Over the five-day programme, 280 colleagues from across the NHG cluster were introduced to the concept of translational simulation, practical methods on simulation design, execution, frameworks, data collection and debriefing methods, as well as to facilitate learning conversations.

Participants from Woodlands Health going through a simulation exercise

SHAPING TEAMS AND CULTURE THROUGH SIMULATION

Dr Purdy sees simulation through learning conversations as opportunities for teams to explore ways to develop and strengthen relationships, and co-create the team's culture.

"What underlies good teamwork is a team culture of shared set of values, some familiarity, and perhaps some shared beliefs about what our teamwork should look like", she said, and added that it is behaviours such as "(proper) role allocation, leadership, closed-loop communications" that will "lead to good outcomes for patients".

In order for teams to perform better, Dr Purdy suggested for team leads to focus on finding ways to "build a culture or an environment" that would allow for these positive behaviours to emerge organically, rather than focus on developing specific individual or team behaviours.

Prof Brazil pointed out that simulation creates "protected time" for team members to reflect on their performance, which is otherwise difficult to come together after clinical work.

"We realised that we were discovering more about our systems and processes while we were doing simulations, as well as building relationships between teams," she said.

Dr Purdy hopes that teams will bring what they have learnt and experienced in the simulation space, back to their working environment.

"And eventually, this starts to become a regular part of our process, and how we develop individual, team and organisational-level skills in culture," she said.

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