Policy Digest 2023

Yayasan MENDAKI

KNOWLEDGE & SKILLS

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MENDAKI
Policy Digest 2023

Message from **Our CEO**

It is my pleasure to introduce the 2023 edition of the MENDAKI Policy Digest, themed "Knowledge and Skills". In a world marked by constant change, the pursuit of knowledge and development of skills will continue to be key for the community's growth and resilience. This year's articles explore the multi-faceted dimensions of education, employment, and the vital role of skills development. A Community of Success extends beyond academic achievements. It encompasses individuals gaining knowledge and skills to navigate challenges and seize opportunities. As we explore the landscape of knowledge and skills, we recognise the profound impact they have on increasing social mobility for individuals and future-proofing our community.

Our commitment to education is exemplified through educational support like the Tertiary Tuition Fee Subsidy (TTFS), a key initiative aimed at bridging gaps in access to tertiary education. The MENDAKI Tuition Scheme continues to evolve, emphasising a holistic approach and nurturing relationships crucial for educational growth. Additionally, initiatives like KelasMateMatika underscore our commitment to build a strong foundation from an early age by empowering parents to play an active role in their children's educational journey before they enter primary school. Regardless of whether you have benefitted from TTFS or other Yayasan MENDAKI programmes, the desire to progress should continue to permeate in the community. I hope to see more of those who had received help in different ways to join Yayasan MENDAKI in our journey to give back and uplift others.

The development of skills does not end in schools, and we extend our outreach to encourage youth and women who have been out of the workforce to remain employable with programmes such as #amPowered and Women@Work. Programmes like these were developed to instil a culture of lifelong learning and support employment. Yayasan MENDAKI will continue to conduct research and evaluate its initiatives to better understand community's needs.

I extend my heartfelt gratitude to the authors, contributors, and the dedicated Yayasan MENDAKI team whose commitment has shaped this year's Policy Digest. Your insights and dedication contribute to meaningful discourse within our community and allow us to inch forward towards being the knowledge broker in issues affecting our community.

As you read Policy Digest 2023, I hope you would reflect on the profound impact of knowledge and skills in shaping individual destinies and the fabric of our community. Together, let us continue to strive for a future where the acquisition and application of knowledge become catalysts for success and fulfilment.

Thank you for your continued support.

Zuraidah Abdullah

Chief Executive Officer
Yayasan MENDAKI

Editor's Note

As we navigate an era defined by rapid technological advancements and global connectivity, the pursuit of knowledge and skills is critical for individual and societal progress. The third edition of the Skills Demand for the Future Economy report published by SkillsFuture Singapore highlighted job skills that are anticipated to be in high demand for the future economy. These encompass core skills such as creative thinking, communication and problem solving, and technical skills such as sustainable manufacturing and application of artificial intelligence.

While we support the Malay/Muslim community to adapt and meet the demands of the future economy through upskilling and job training, it is pivotal that upstream interventions and structures are in place. These are instrumental in providing opportunities for students and youth to develop strong academic fundamentals and thrive in their chosen academic and non-academic pathways. Moreover, as we know, structures do influence changes in behaviours.

With the theme of "Knowledge and Skills," Section I of the MENDAKI Policy Digest invites readers to reflect on the crucial need for holistic support for students and the evolving significance of degrees and professional certifications. This section features an analysis of data from the 2022 Tertiary Tuition Fee Subsidy (TTFS) cohort, exploring how schemes like TTFS have enhanced access to tertiary education. Finally, this section delves into challenges faced by the Malay/Muslim workforce in training and upskilling and explores the role of the government, industry partners and community agencies in working together to support our workforce. Moving on to Section II of the MENDAKI Policy Digest, readers will find a concise

summary and analysis of key national policy initiatives in education, employability, housing, and healthcare.

We hope that these articles will provide insightful perspectives and spark meaningful discussions and reflections on the vital task of "future-proofing" the Malay/Muslim community. A special note of gratitude goes to our writers for their invaluable contributions. This publication also owes it success to the unwavering support of Yayasan MENDAKI's Chairman Minister Masagos Zulkifli Masagos Mohamad, Deputy Chairman Senior Minister of State Zaqy Mohamad, and CEO Mdm Zuraidah Abdullah for their continuous guidance in elevating good discourse for the community.

Sabrena Abdullah
and
Dr Ting Ming Hwa
Editors

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Abstract

This essay explores the profound concept of knowledge, as highlighted in the Quranic verse Iqra', which means to read, emphasising its significance in Islam and exemplifying its pursuit through historical and contemporary contexts. The evolution of the perception of knowledge is discussed, drawing on perspectives from figures such as Francis Bacon and John Naisbitt. The essay then delves into the 21st century skills identified by the United Nations, underscoring the changing definition of intelligence and the societal shift towards critical thinking and innovation. A case study involving the United Kingdom's decision to replace the A-levels with the Advance British Standard is presented, reflecting a global trend in reevaluating educational systems to foster diverse skills from academic to technical abilities. The essay also explores the evolving significance of degrees versus certifications, especially in the context of the Information Technology sector and the impact of the COVID-19 pandemic on digital learning. It concludes with a reflection on the role of education in the age of artificial intelligence (AI), asserting that individuals who can effectively use AI will be highly sought after. The essay essentially advocates for a holistic, experiential learning approach, echoing the Quranic principle of Iqra' as an enduring journey of seeking knowledge throughout life.

Fairoz D'Cruz

Fairoz D'Cruz is the Head of the Education Department at Yayasan MENDAKI overseeing the MENDAKI Tuition Programme. From humble beginnings as a Science and Math teacher in a local neighbourhood secondary school in Singapore, Fairoz has gone on to work in five cities overseas (Frankfurt, London, Seoul, Marrakesh and Doha) holding roles such as a school administrator, curriculum consultant and Head of Science Department with the Advanced Placement, International Baccalaureate, and A-level education programmes. A lifelong learner, Fairoz believes in the ability of education to encourage social mobility and essentially loves to inspire that 'eureka' moment among students.

Introduction

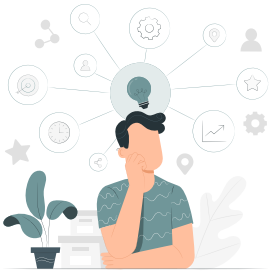
اقرأ (pronounced iqra') cited in the Quran surah Al-'Alaq (96:1) was one of the first words to be revealed as a revelation to Prophet Muhammad (Peace Be Upon Him (PBUH) from Allah. Its meaning, which was a message sent through the angel Gabriel, was to read. This phrase alone shows to mankind not only the importance of reading but also the reverence that knowledge or عِلْم (pronounced *ilm*) has in Islam. One of the reasons why *iqra'* was chosen as the logo of Yayasan MENDAKI when it was founded in 1982 was to act as a catalyst to re-orientate the community's attention on the importance of education (Abdul Rahim, 2016).

Knowledge

The discourse surrounding knowledge has been a profound and enduring topic over the years. In the 16th century, the English philosopher Francis Bacon famously declared, 'knowledge is power' (Rodrígez García, 2001), underscoring the notion that those who possess knowledge wield the ability to control. In alignment with this perspective, the Aristotelian tradition asserts that all men by nature desire to know (Aertsen, 2005), suggesting an innate human drive to seek and explore knowledge. However, John Naisbitt, an American author, contended that "we are drowning in information but starved for knowledge" (Mitsch, 1984, p. 60), highlighting a distinction between information and genuine knowledge and raising concerns about whether true knowledge is being acquired within society. Both Socratic and Confucian teachings underscore the significance of self-knowledge as a means to overcome ignorance (Kwak, 2016).

This exploration of knowledge extends to its pursuit within the human anatomy, where the instructional design of long-term memory nerve cell interactions is profoundly influenced by the type of knowledge (Versace et al., 2009). The questions surrounding knowledge, as framed by historical philosophies and contemporary perspectives, prompt ongoing considerations about the nature, acquisition, and application of knowledge in diverse contexts (Aertsen, 2005; Kwak, 2016; Mitsch, 1984; Rodrígez García, 2001; Versace et al., 2009).

21st Century Skills



In the contemporary landscape, the pursuit of knowledge is intricately interwoven with the dynamics of the capitalistic era, where billionaire tech moguls take centre stage, shaping the societal narrative and influencing the aspirations of the average individual (Walker et al., 2021). The influence of these inspiring and talented figures is particularly pronounced in a world where the media landscape is often shaped and owned by the affluent, and the ultra-rich find themselves drawn towards political arenas, prompting society to grapple with decisions regarding the paths it chooses to follow in the unfolding narrative of the 21st century (Grossman et al., 2022; Krcmaric et al., 2023; Toffler, 1991).

The conventional notion of being "smart" has undergone a transformative evolution over the years. No longer confined to a mere repository of facts, a smart individual in the 21st century is characterised by their capacity for critical thinking and innovative responses to the ever-changing landscape around them, utilising the knowledge they possess (Jucevičienė & Jucevicius, 2014). This shift in perspective aligns with the United Nations' identification of essential 21st century skills that learners must cultivate to foster knowledge and sustainable development. These skills include creativity, critical thinking, communication, and collaboration – all recognised as pivotal attributes for learners to thrive and succeed in their lifetimes (Joynes et al., 2019).

The 21st century, marked by rapid technological advancements and the omnipresence of information, demands a departure from traditional benchmarks of intelligence. In this era, adaptability, creativity, and the ability to navigate an interconnected world are heralded as indispensable skills, shaping the contours of success in an age defined by its challenges and opportunities. As society charts its course in this dynamic epoch, individuals are compelled to not only accumulate knowledge but also harness it through the prism of 21st century skills, ensuring not only personal success but also contributing to the collective progress of a rapidly evolving global community.

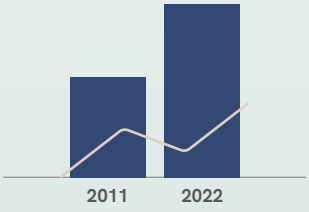
United Kingdom scraps the A-levels

Because of the new need for such skills in the 21st century, countries from around the world are beginning to look at and review their educational curriculum. One such country is the United Kingdom (UK), with their Prime Minister, Rishi Sunak, taking the controversial and bold move to scrap the A-levels (Clarence-Smith, 2023). Citing the need to overhaul the education system, Sunak aims to create a somewhat similar form of the International Baccalaureate called the Advanced British Standard providing parity for both academic and technical standards. It is a radical move with the A-levels first implemented in 1951 (Smithers, 2011). Critics are sceptical; however, such initiatives are growing as countries battle it out to nurture and groom talent. We must not forget that the UK has been plagued with poor work productivity and a stagnating economy (Siddiqui, 2020). Indeed, the news was a concern in Singapore with the A-levels being introduced in 1975 locally, but many are in agreement that there is a need to bring parity for both technical and academic learning (Lau, 2023). Although the majority of students in the autonomous universities are from junior colleges that sit for the A-levels (Tan, 2021), the Ministry of Education (MOE) has been highly encouraging students from other pathways to have, although longer but a direct opportunity to a university degree (Teng, 2019).

Degree or Certification

The clamour for a degree is still evident around the world including Singapore as 20-30-year old Singaporeans who have a degree received a median salary of $4,200 monthly, doubling those with an Institute of Technical Education or a secondary education qualification (Tan, 2022). However, the ability to land a job with a degree within six months dropped in 2022 by 0.6% to 93.8%, the first decline since 2017 (Lim, 2023). Not only due to fears of an economic slowdown, but there is also a shift on the ground as companies are beginning to favour specific industry-backed certification rather than a one-size fits all degree experience especially within the Information Technology sector (Hitchcock, 2007). The COVID-19 pandemic has sparked a bright future for digital learning (Guppy et al., 2022) allowing people to take up skills certifications through massive online open courses with sites such as edX and Coursera that are relatively cheaper and more accessible, enabling a user to complete their learning autonomously at the comfort of their own time and place (Goglio & Bertolini, 2021).

Degree holders received a median salary of **$4,200** monthly, doubling those with an Institute of Technical Education or a secondary education qualification



Conclusion

With the onset of AI, there is a growing fear that machines may take over human jobs. While it may replace job roles of repetitive tasks, essentially, it will be the worker who knows how to use AI in their roles that will be highly sought after and attain success in the future (Jarrahi, 2018).

Education will continue to evolve and change with the times. Many of the jobs of the future are not here yet; however, these jobs will require the skills gained during a student's educational journey to enable them to be successful in their careers and lives. Thus, it is important for us to not limit a child's learning and push boundaries to expose them to holistic experiential learning that may not be found in a subject's standards.

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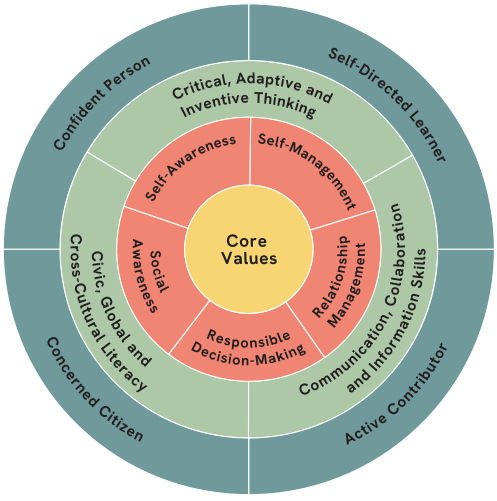
Did You Know?

MOE has articulated a fundamental set of skills essential for your child's future preparedness. Known as the Desired Outcomes of Education, these aim to furnish them with the appropriate mindsets, proficiencies, and knowledge to confront forthcoming opportunities and obstacles, with a primary focus on soft skills.



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Source: 21st Century Competencies. (n.d.). Ministry of Education. https://www.moe.gov.sg/education-in-sg/21st-century-competencies

As part of Singapore's National AI Strategy, as well as to support the implementation of the EdTech Masterplan 2030, MOE is enhancing the capabilities of the Singapore Student Learning Space with AI learning tools to support greater customisation of learning for our students and to augment our teachers' professional practice.

Source: Artificial intelligence in education. (n.d.). MOE. https://www.moe.gov.sg/education-in-sg/educational-technology-journey/edtech-masterplan/artificial-intelligence-in-education

Here are some intriguing insights about Artificial Intelligence (AI):

1. Ubiquitous AI Applications: AI is already integrated into various aspects of our daily routines, ranging from voice assistants like Siri and Alexa to recommendation systems on streaming platforms such as Netflix and YouTube.

2. According to a McKinsey survey conducted in 2021, 56% of companies have implemented AI in at least one function within their organisation, signifying an increase from 50% recorded the previous year.

Source: The state of AI in 2021. (2021, December 8). McKinsey & Company. https://www.mckinsey.com/capabilities/quantumblack/our-insights/global-survey-the-state-of-ai-in-2021

Empowering Futures: Yayasan MENDAKI's Holistic Approach to Educational Excellence in the Malay/Muslim Community

Abstract

Since 1982, the MENDAKI Tuition Scheme (MTS) has served as Yayasan MENDAKI's flagship programme to help Malay/Muslim students receive educational support and attain higher academic performance. Over the years, MTS continues to evolve. These include the introduction of Pedagogy of Care and Ethics of Care philosophy in the design and delivery of MTS to emphasise the importance of nurturing relationships among tutors, students, and families. Critical intervention points have also been identified, notably in Mathematics, at Primary 3 and Primary 5 to boost a child's numeracy skills. Yayasan MENDAKI's holistic approach also includes the recognition of potential of disruptive technologies, such as Artificial Intelligence (AI), in enhancing the teaching and learning experiences. This paper underlines Yayasan MENDAKI's paradigm shift from mere academic tutoring to a holistic approach, through a philosophy of care that nurtures relationships, addresses diverse needs, and strategically intervenes at crucial educational junctures.

Sabrena Abdullah

Sabrena Abdullah is the Head of the Research and Design Department at Yayasan MENDAKI. She was previously the Head of Education Department/Perform in School where she oversaw its flagship MENDAKI Tuition Scheme (MTS), which run over 100 centres for close to 10,000 students annually, and the Education Empowerment Unit that oversees enrichment and joint self-help group programmes for families and school-going children. She is a Board of Director of Spectra School Board and the Ministry of Education Compulsory Education Board, where together with the team, she participates in policy decisions towards uplifting the importance of education and learning especially for needy students and families. Her areas of interests lie in evidence-based research and implementation, education empowerment and learning, counselling and guidance, community upliftment and programmes evaluation. Sabrena holds a Master's degree from Nanyang Technological University majoring in Psychological Studies, Counselling and Guidance.

Siti Syafiqah Binte Abdul Rashid

Siti Syafiqah Abdul Rashid is a Research Officer at Yayasan MENDAKI. Syafiqah completed her Bachelor's degree in Economics at Singapore Management University. Her research interests primarily focus on understanding the different facets of children and youth socioeconomic well-being, especially through the interplay of their motivation and education outcomes.

Introduction

Uplifting the community through promoting education and lifelong learning is at the core of what Yayasan MENDAKI does, and the MENDAKI Tuition Scheme (MTS) is arguably the most representative of the work it does in this area. It comes as no surprise that among the members of the Malay/Muslim community, they commonly associate MTS with Yayasan MENDAKI, and conversely, Yayasan MENDAKI with MTS. Since the inception of MTS more than 40 years ago, this flagship programme has supported more than 250,000 students. Throughout this period, Yayasan MENDAKI has sought to continually refine and improve MTS, not only to keep pace with the times, but also to ensure that it also keeps pace with the evolving and emerging needs of students. Apart from making this programme as accessible as possible, Yayasan MENDAKI has also stepped up its efforts to providing targeted support to students who may benefit from added support. In addition, Yayasan MENDAKI recognises the importance of holistic development, which is why it introduced the Pedagogy of Care to MTS in 2015 by adapting the principles of Ethics of Care (EoC) by Nel Noddings and emphasising that the role of tutors should go beyond merely teaching, and to also include elements of care and an on-going interest in students' welfare. Likewise, Yayasan MENDAKI also recognises the potential of disruptive technologies such as Artificial Intelligence (AI) on education, which is why it has devoted increasing resources to explore how it can leverage on these developments to improve MTS. Through such concerted efforts to improve MTS, Yayasan MENDAKI is reaffirming its commitment to uplift the community through education and lifelong learning.

Widening the Community's Access to MTS

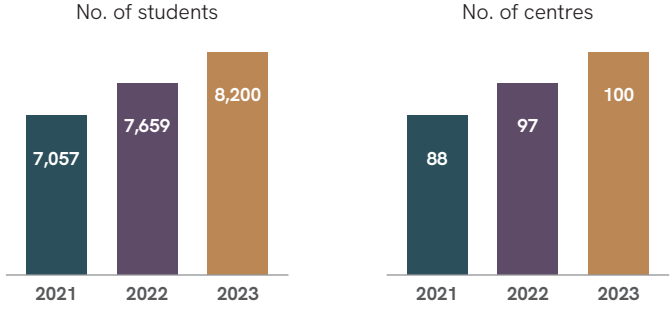
In broad strokes, MTS is about providing affordable access to academic support for the Malay/Muslim community. Up until 2020, the fees for MTS were means-tested. The fees ranged between $100 and $300, depending on a family's per capita income. However, in a bid to increase accessibility even more, Yayasan MENDAKI introduced a flat $10 fee in 2021. For families who are still unable to pay the fees for various reasons, they would be able to apply for fee waiver where they will be assessed by Yayasan MENDAKI for eligibility. Eligibility will also give access to more support from both Yayasan MENDAKI, the Education Trust Fund (ETF), governmental and private companies grants and initiatives.

Yayasan MENDAKI also seeks to increase accessibility for MTS through its ongoing engagement and collaboration with schools and other community partners to offer MTS at more venues. In 2023, a milestone was reached when MTS was offered at 100 venues across the island. More importantly, Yayasan MENDAKI adopts a methodical approach in identifying areas to offer MTS. Through the use of geospatial analysis that takes into account the distance students travelled to their respective MTS centres, Yayasan MENDAKI is able to identify areas in which students have to travel a greater distance. This helps Yayasan MENDAKI to prioritise which partners in specific geographical areas to engage. In addition, Yayasan MENDAKI also collaborates with other Self-Help Groups to allow cross-enrolment of students, further increasing the ease of accessing MTS within their neighbourhood. Currently, MTS serves more than 8,000 students across 100 centres nationwide, with 24% of students from the lower-income group[1].

[1]Lower-income group is defined as those with household per capita income of $750 and less.

Figure 1

Number of MTS students and centres from 2021 to 2023



Identifying Critical Intervention Points

Yayasan MENDAKI also recognises that different students have different academic needs, and they learn at different paces. Since 2020, MTS has taken an additional approach of identifying young learners[2] from needy families who may require additional support through the Math Booster programme. This intervention ensures that students who need more support in Mathematics are not left behind due to differences in learning styles or pace. The programme provides a one-on-one coaching support from a qualified and trained Yayasan MENDAKI tutor, for 90 minutes a week, for up to six months.

[2]Young learners are defined as students in Primary 1 and Primary 2.

Based on the analysis of MTS students' pre- and post-test results, there is also a tendency for students' academic performance to take a dip as they progress to Primary 3 and Primary 5. This is likely due to the increase in academic demands from Primary 2 to Primary 3 and from Primary 4 to Primary 5 respectively. Students may also face challenges in adapting to these transitions in primary schools, such as adapting to new subjects like Science in Primary 3. Thus, tutors will identify Primary 3 and Primary 5 students who may require additional support and offer them targeted coaching sessions in smaller class sizes. This facilitates focused and targeted support for students to reinforce their foundations before they transit to upper primary levels or sit for the Primary School Leaving Examination (PSLE) the following year.

Providing Care and Last Mile Service Delivery

To facilitate the identification of such critical intervention points, tutors are not only cognisant of students' academic performance, but are also sensitive to students' personal and holistic development. Thus, beyond the provision of tuition, Yayasan MENDAKI also aims to provide holistic support to students throughout their academic journey. In 2014, Yayasan MENDAKI's Education Review Committee recommended for the implementation of a Pedagogy of Care that goes beyond an academic-centred approach. This pedagogy hopes to facilitate a structure of reciprocal care among tutors, students, and families of MTS.

Since 2015, the principle of EoC was adopted as a key component that has been included in MTS curriculum (Bakar, 2017). Underpinning this pedagogy is the pivotal role of tutors in modelling care to and developing relational trust with their students. Therefore, MTS has moved away from the philosophy of "drilling more" to that of

"caring more", focusing on improving the overall experiences in teaching and learning for both tutors and students. Studies have shown that positive teacher-student relationships or bonds have a significant impact on student motivation (Yoshimoto, Murakami, & Osamu, 2023).

All MTS tutors are required to attend training on the EoC before the start of MTS academic year. The routine provision of care throughout the 32 weeks of MTS classes facilitates a bond to be formed between students and tutors. This bond expands the tutors' role from solely being a teacher to that of a coach or a trusted adult that students could turn to for advice beyond issues of classroom teaching and learning. As the majority of MTS students come from lower-income group, having access to such support from a tutor may encourage students to present higher levels of effort in their academic journey (Kaylor & Flores, 2007).

By taking on this pastoral role, MTS tutors were also able to address developmental needs of students. For example, in 2022, through a series of focus group discussions, tutors had strongly advocated for the provision of breakfast before the start of MTS classes to facilitate better learning experiences for students. With this strong advocacy and support from the schools, MTS had widened its offering to include free healthy breakfast for all students in its weekend MTS classes since 2023. It is hoped that such initiatives will boost morale among students, and in turn contribute to better attendance and performance outcomes in the long run.

MTS Tutor Incentive Awards

Another initiative to encourage an increase in students' regular attendance and grade performance while also recognising the efforts of talented and high-performing tutors is the MTS Tutor Incentive Awards. Yayasan MENDAKI recognises that tutors play a central role in the success of MTS. As shown, they do not just impart academic knowledge, they also play a part in encouraging the holistic development of students. Hence, tutors who meet the targets of attaining students' regular attendance and a grade increase are incentivised up to $2,500. For 2023, 300 tutors will be receiving these incentives in recognition of their efforts in supporting their students' holistic development.

With the changing landscape of education due to the advancements in digital technologies and AI on the horizon, Yayasan MENDAKI has devoted resources to capitalise on such disruptions. Yayasan MENDAKI is establishing the Curriculum Design and Learning Technologies Team that will be responsible for all curriculum development (including learning pedagogy) and evaluation of Yayasan MENDAKI's educational programmes conducted by the Growth Group. The new Team will be doing a curriculum review that delves into holistic learning while exploring different learning technologies such as a personalised learning management software and looking into the incorporation of AI to enhance learning process and experience.

Conclusion

In sum, these initiatives show the even though MTS has been around for more than 40 years, it has changed substantially over time. The central objective of providing assistance and support has always remained the focal point of MTS, but what is clear is that Yayasan MENDAKI has also shown itself to be a learning organisation, one that continually embraces innovation to maximise the effectiveness of MTS and ensuring that the experience is a positive one for both students and tutors.

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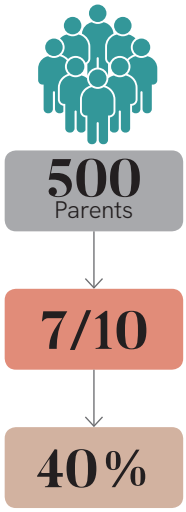
Did You Know?

Yayasan MENDAKI and Singapore University of Social Sciences (SUSS) embarked on a three-year study to identify the determinants of MTS students' academic performance. The study analysed data from more than 12,000 MTS students between 2019 and 2022.

There were five main findings. The finding showed that:

1. There is a significant association between socio-economic status and students' academic achievements.
2. Students who are intrinsically motivated perform better in their studies.
3. Students at primary and secondary levels who performed well in Mathematics, also do well overall.
4. Academically stronger students who also participated in CCAs displayed holistic development like better time management, better organisational skills and higher self-esteem.
5. It is important to have a strong academic foundation to support lifelong learning.

With these findings, Yayasan MENDAKI is able to make informed decisions when developing programmes and interventions for MTS students.



The survey of 500 parents, conducted by The Straits Times and research company Nexus Link found 7 in 10 parents send their children for tuition.

Nearly 40 per cent of parents with children in pre-schools have tuition for them. The top two reasons given were to improve their children's grades and to help them keep up with others.

But only a third of all parents agreed that the extra tuition actually pulled up academic performance by "a noticeable extent".

Amount a month spent on tuition for pre-school was $155, for primary school, $205, and for secondary school, $260.

On average, pre-school children went for two hours of tuition a week, while primary and secondary school students spent three hours a week on tuition after school.

Source: Davie, S. (2015). 7 in 10 parents send their children for tuition: ST poll. The Straits Times. https://www.straitstimes.com/singapore/education/7-in-10-parents-send-their-children-for-tuition-st-poll

Enabling Access to Tertiary Education: An Exploration of the 2022 Tertiary Tuition Fee Subsidy Cohort

Abstract

Education is a key factor in promoting social mobility. While the Malay community has made great strides in educational attainment over the years, more can be done to narrow the gap when compared with other community groups. One way of facilitating access to tertiary education for the Malay community is through the Tertiary Tuition Fee Subsidy (TTFS). TTFS is an education subsidy for eligible Malay students, which covers their tuition fees at tertiary institutions. Analysing administrative data from 2022, we found that there was lower participation in tertiary education amongst those of lower socio-economic status (SES). We also found that the link between housing types and SES may not be as durable as conventionally accepted since many of the recipients were staying in larger public housing types — determining financial need based on per capita income, which Yayasan MENDAKI has been doing, might be a better approach to take compared to housing type. Additionally, there was an equal distribution of males and females amongst the TTFS cohort, with recipients showing overall preference for subjects related to science, technology, engineering and mathematics (STEM) – such as Engineering Sciences, Health Sciences, and Information Technology (IT). However, we found gender imbalances within Engineering Sciences and IT

courses, with there being more males than females overall. To encourage more females to enrol in such courses, the community can consider how it can improve motivation and reduce gender stereotypes upstream through its existing range of educational initiatives targeting children and youth from different age groups.

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Introduction

Education is known to be a key factor in promoting upward social mobility in Singapore (Milieu Insight, 2023). Encouragingly, the Malay community has made great strides in education over the years, faring well in global education tests (Organisation for Economic Co-operation and Development [OECD], 2019). The proportion of the Malay community possessing below-secondary qualifications as their highest qualification have decreased from 41.4% to 28.9%, suggesting that more are attaining diploma and professional and university qualifications. Based on Singapore Census of Population 2020, the growth rates of Malay residents attaining diploma and professional qualifications, and university qualifications have also outperformed the Chinese and the Indian residents, growing from 15.3% in year 2010 to 56.3% in year 2020 (Singapore Department of Statistics, 2021). Overall, the community has seen an upward shift in educational attainment over the decade from 2010 to 2020. However, more can still be done in the attainment of tertiary education. From Singapore Census of Population 2020, only 27.7% of the Malay population had qualifications from tertiary education institutes compared to 56.3% of the Indian and 49.9% of Chinese populations respectively (Singapore Department of Statistics, 2021). One way of facilitating access to tertiary education for the Malay community is through the provision of the Tertiary Tuition Fee Subsidy (TTFS) by Yayasan MENDAKI.

TTFS was introduced by the government in 1991, with the objective of reducing financial obstacles to access tertiary education. TTFS is means-tested, where the amount of financial assistance given is based on per capita income (PCI), thus ensuring equitable assistance is provided. Although TTFS has been supporting students for more than 30 years, it turns out that very little is known about this group of individuals. To address this gap, Yayasan MENDAKI analysed the 2022 cohort of TTFS recipients with the aims of understanding who the recipients were, their demographics, and the course of study they pursued at tertiary level. It is hoped that with such information, Yayasan MENDAKI can evaluate its current strategies and increase the uptake of TTFS to boost the social mobility of the community.

TTFS Recipients

Subsidy Groups

In 2022, a total of 3,087 students were awarded TTFS for their tertiary education. Depending on the PCI of their households, TTFS recipients were assigned into one of three subsidy groups. These subsidy groups of 50%, 75%, and 100% determined the percentage of tuition fees that would be subsidised by TTFS. Table 1 illustrates the current PCI cut-offs used to determine subsidy group membership.

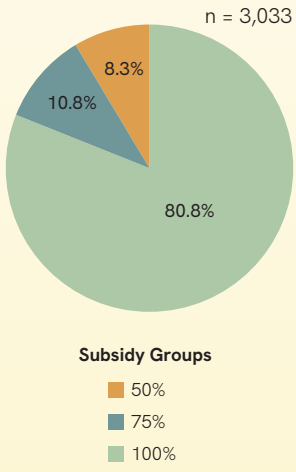
Table 1

PCI Cut-Offs and Subsidy Group Membership

Per Capita Income (PCI)	Subsidy Group
PCI < $1,400	100%
PCI $1,401 - $1,700	75%
PCI $1,701 - $2,000	50%

Figure 1

Distribution of TTFS Recipients by Subsidy Groups



*Percentages may not sum to 100% due to rounding.

80.8% of the TTFS recipients received 100% tuition fee subsidy, while the remaining 10.8% and 8.3% received 75% and 50% subsidy respectively (see Figure 1). Hence, majority of the 2022 TTFS recipients were individuals from households with a PCI below $1,400, the lowest socio-economic status (SES) amongst the three subsidy group tiers. Without TTFS, these individuals would have faced financial difficulties in attaining a tertiary education.

Housing Type

In Singapore's context, housing type is a common indicator that serves as a proxy for SES. As TTFS was designed to empower Malay students from the lower SES, we expected that majority of the recipients would reside in smaller housing types.

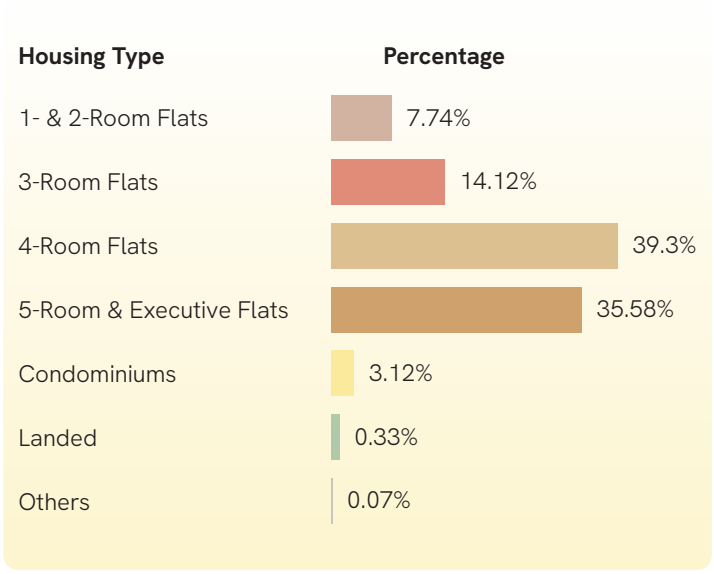


Figure 2

Distribution of TTFS Recipients by Housing Type

n = 2,726

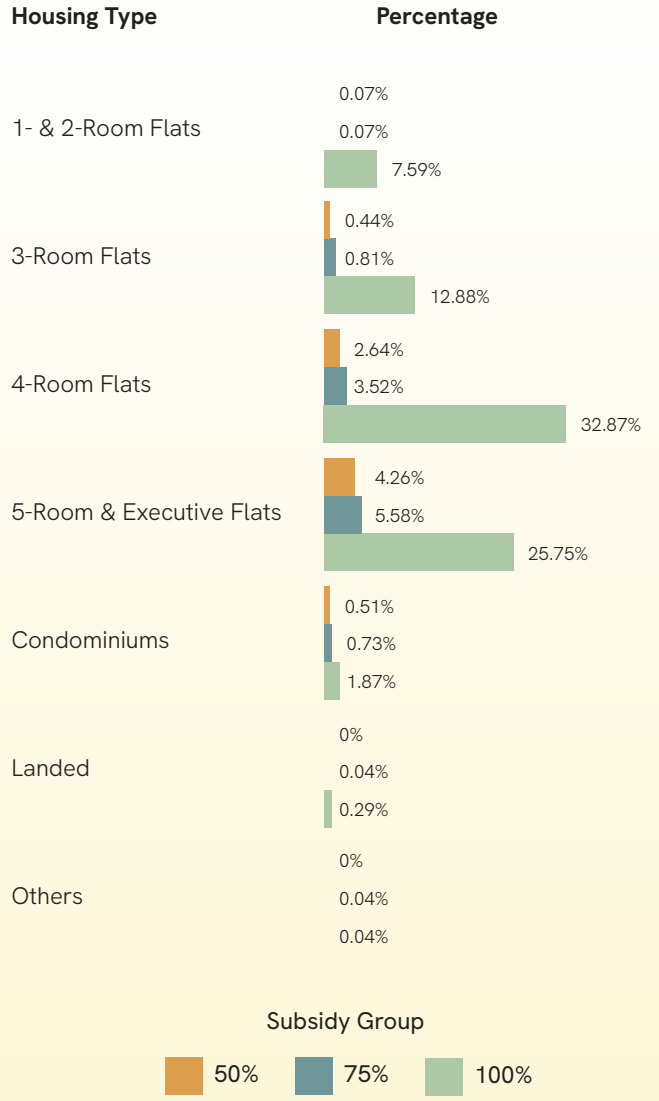
However, most of the 2022 TTFS recipients were found in 4-room flats (39.03%), with 5-room and executive flats (35.58%) being the second most common housing type (see Figure 2). The data also indicated that there were fewer TTFS recipients who reported staying in 1- and 2-room flats (7.74%) and 3-room flats (14.12%). When we compare our findings to the Singapore Census of Population 2020, the results were similar (Singapore Department of Statistics, 2021). At the national level, majority of the Malay population resided in 4-room flats (36.9%), followed by 5-room and executive flats (22.3%), mirroring our results (Singapore Department of Statistics, 2021; Yayasan MENDAKI, 2022).

When we juxtapose the housing type data against the subsidy group data, a more nuanced picture emerges. We expected that those residing in 1-, 2- and 3- room flats would belong to a higher subsidy group (i.e., 100% subsidy group) and 4-room to 5-room flats would belong to a lower subsidy group (i.e., 50% and 75% subsidy group).

Figure 3

Distribution of TTFS Recipients by Subsidy Group and Housing Type

n = 2,726



As expected, the majority of those in smaller housing types (1-, 2- and 3-room flats) received 100% subsidy, suggesting that individuals of lower SES tended to reside in smaller flats (see Figure 3). On the other hand, what was contrary to our expectations was the representation of the 100% subsidy group in the 4-room (32.87%) and 5-room and executive flats (25.75%). This suggests that the majority of those in 4-room, 5-room and executive room flats who received TTFS have PCI of $1,400 and below.

The majority of Singapore's financial assistance programmes utilises housing type as a proxy for SES. For example, the U-Save Special Payment from the Assurance package is not means-tested and uses housing type to determine financial need (Assurance Package, n.d.). That is, those in smaller housing receive more financial assistance compared to those in larger housing. However, based on what we have learnt from the TTFS data, determining financial need based on PCI might be a better approach to take — which is what Yayasan MENDAKI has done through TTFS. Individuals who resided in 4-room, 5-room and executive flats have benefitted from TTFS since having a large home does not suggest that one does not require financial assistance. This is because families residing in larger housing types might encounter financial stresses too. Therefore, at a policy level, it may be useful to consider the usefulness of various proxies of SES.

Besides proxies of SES muddying our understanding of financial need, another point that deserves equal attention is the monetary barriers to accessing tertiary education. According to research by Junor and Usher (2004), there are three main categories of monetary barriers to accessing tertiary education: the cost-benefit barrier, the liquidity (cash-constraint) barrier, and the debt aversion (internalised liquidity constraint) barrier. The cost-benefit barrier entails an individual deciding that the costs of attending university outweighs the return on their education, which includes factors such as tertiary tuition fees, living expenses as well as opportunity costs of not working during the duration of the course (Junor & Usher, 2004). How the individual analysed the cost-benefit also depended upon the accuracy of the information obtained. Research has shown that students from low-income backgrounds are less likely to have access to accurate information (Usher, 2005). A liquidity barrier refers to students lacking the ability to gather the necessary resources to pursue tertiary education after having decided that the benefits do outweigh the costs, meaning that they struggle with the costs of tertiary education and either do not have access to or are unaware of alternatives to finance their education. Finally, debt aversion constraints occur when a student values the benefits of tertiary education relative to its costs, can borrow sufficient

financial resources, but chooses not to matriculate because the financial resources available to him/her involve loans. Students with debt aversion simply do not wish to or are afraid to incur debt that must be repaid.

While TTFS does provide access to tertiary education by covering tuition expenses, it does not cover living expenses as well as opportunity costs of not working during the duration of the course. Hence, those of lower SES might face a cost-benefit barrier, whereby they opt not to pursue tertiary education as the costs of living expenses and limited employment opportunities during the course of study outweigh the benefits of fee subsidy through the TTFS. For example, in a qualitative study of 25 low-income Malay families, Brassard et al. (2015) found that the lower income families stated that the cost of education placed them under financial strain, which compounded the parents' difficulty in providing support to their children's education. Most of the respondents in Brassard et al.'s (2015) study valued education and mentioned that if there was one aspect of their life that they would change, it would be to further their education. Hence, to overcome these barriers, we recommend providing information on bursaries and grants that cover non-tuition fees-related expenses such as National University of Singapore Work-Study Assistance Scheme and Nanyang Technological University Bursary. While Yayasan MENDAKI has been providing such information at YOUth@M^3 Networking Sessions for Tertiary Students and "Future of … Series" Workshop, more will be done to help children from the low-income Malay families to overcome these barriers. In this way, the two-pronged approach of using TTFS and other cost of living assistance would greatly benefit individuals who are held back from tertiary education due to cost-benefit barriers.

Academic Standard

Much like housing type, some may argue that the type of academic standard determines the extent of upward social mobility students may achieve. In a study by Access Singapore social mobility survey (2023), the majority of respondents mentioned how having a university degree is essential for a successful career in Singapore (Milieu Insight, 2023). Therefore, having a tertiary education certification is perceived to be important in attaining upward social mobility. The type of academic standard (e.g., Polytechnic, University) and the educational sector that TTFS recipients are in may determine and channel them to the type of work that they might subsequently engage in when they enter the workforce.

Our findings indicated that the majority of TTFS recipients were in polytechnic (66.17%), followed by university (25.26%), and diploma and degree from the Arts, consisting of Arts schools such as LASELLE College of the Arts and Nanyang Academy of Fine Arts (NAFA) (7.42%), and to a lesser extent, diploma from Institute of Technical Education (ITE) (0.99%) and the school of Building and Construction Authority (BCA) (0.16%) (see Figure 4). Based on the latest national statistics, the Malay community had the highest percentage of its population having below secondary (28.9%), secondary (18.5%), and post-secondary (non-tertiary; 19.8%) as the highest qualification (Yayasan MENDAKI, 2022). A polytechnic education is the next step up from the current highest qualification amongst the Malay community, which we are observing in the TTFS dataset.

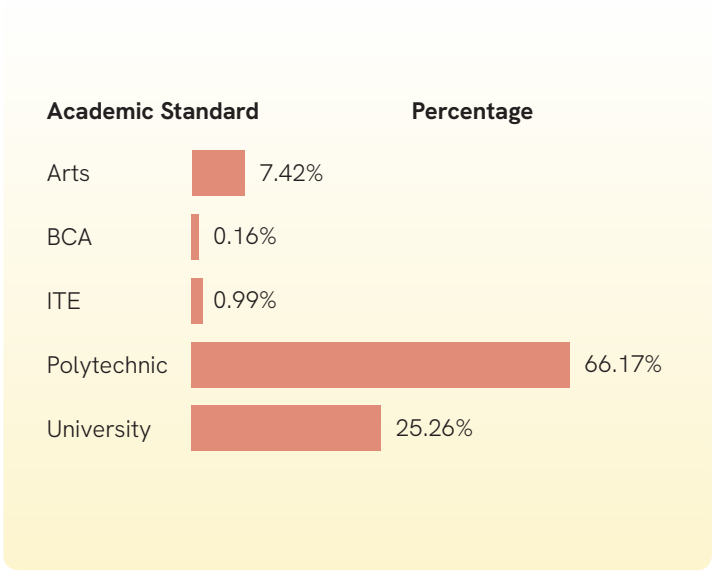


Figure 4

Distribution of TTFS Recipients by Academic Standard

n = 3,033

According to press reports, half of O-level holders are taking the polytechnic route (Davie, 2021). Furthermore, approximately 45% of the O-level students admitted to the polytechnics in 2018 had qualified for Junior College (Davie, 2021). This shows the shift in preference of academic standards amongst the general population with schools stepping up education and career counselling, indicating that students are leaning towards applied learning and work-oriented courses. The type of course that they are enrolled in may be the sector they find employment in post-graduation. Therefore, we decided to examine the types of courses that our TTFS recipients enrolled in within the two most popular academic standards – polytechnics and universities.

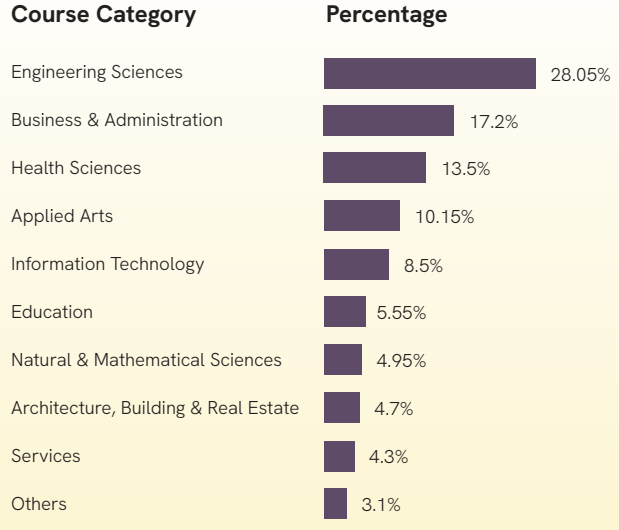
Course Categories

Our TTFS recipients were enrolled across a variety of courses. To help reduce the number of courses into a manageable load for analysis, we employed the course categorisation tables provided in the Ministry of Education (MOE) Education Statistics Digest 2022 to group together courses into 10 course categories (Ministry of Education, 2022). In the analysis that follows, we will only be looking at TTFS recipients from polytechnic and university as they constituted the majority of the TTFS recipients' data.

Figure 5

Distribution of Polytechnic TTFS Recipients by Course Category

n = 2,000



The course category breakdown showed that TTFS recipients from polytechnic were most represented in the Engineering Sciences (28.05%) course category, followed by the Business and Administration course category (17.2%) (see Figure 5). Health Sciences (13.5%), Applied Arts (10.15%), and Information Technology (IT) (8.5%), which hold the third to fifth positions, respectively, had similar numbers.

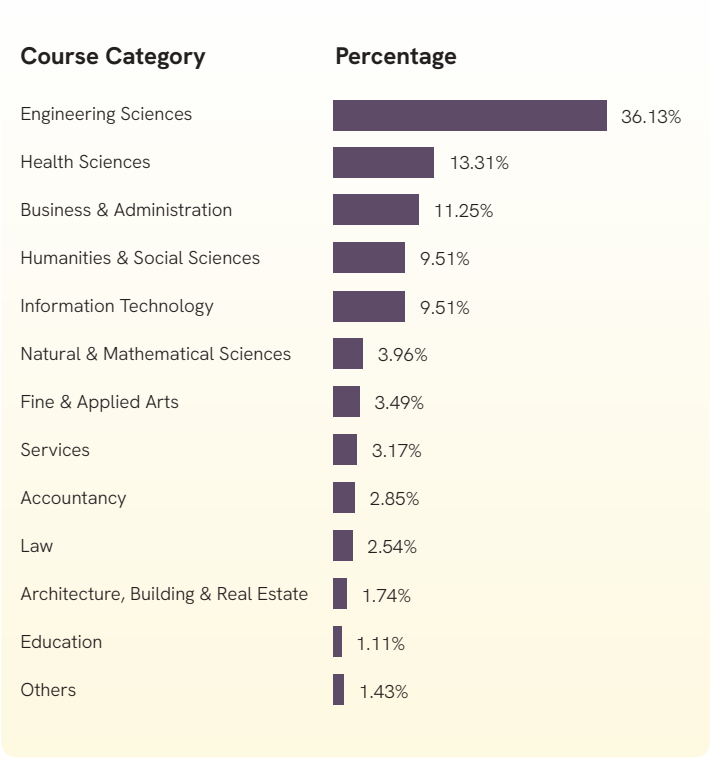


Figure 6

Distribution of University TTFS Recipients by Course Category

n = 631

Among TTFS recipients enrolled in university, they were most represented in the Engineering Sciences course category (36.13%) (see Figure 6). This representation is approximately 2.7 times higher than Health Sciences (13.31%), the second highest course category. In fifth position is IT (9.51%).

What could be gleaned from the polytechnic and university analysis was that TTFS recipients showed a preference for the Engineering Sciences, with Business and Administration, Health Sciences, and the IT course categories as other popular choices. The relatively high enrolment in STEM sector – particularly the engineering sciences and technology sectors are positive developments as engineering is vital to Singapore as it enters the next phase of development (Begum, 2019b), and engineers are needed to solve Singapore's future challenges (Lai, 2020). While we cannot ascertain whether the TTFS recipients would eventually work in the engineering sector, following their education-to-employment trajectory is a topic that Yayasan MENDAKI could investigate in the future.

Gender

Gender disparity in tertiary education (Dominus, 2023) and STEM-related courses (World Economic Forum, 2020) is well-known. When examining the gender data of the TTFS cohort, the distribution is approximately symmetrical (50.9% females and 49.1% males) (see Figure 7).

Figure 7

Distribution of TTFS Recipients by Gender

n = 3,027

At present, we observe that the gender breakdown of TTFS recipients is an almost even split. However, international data showed that there has been a declining rate of participation among males (Dominus, 2023). According to national data in 2020, there is a larger proportion of females (11.7%) than males (8.5%) with a university degree among the Malay community (Yayasan MENDAKI, 2022). Such findings of higher female participation in tertiary education are not new. Internationally, the gap in male participation in tertiary education as compared to females has been a concern for decades, with the pandemic exacerbating the problem further (Dominus, 2023). At present, the analysis of the 2022 TTFS data did not reflect the presence of this issue in the local context. However, it may be worthwhile to monitor developments in this area. This is because it may be necessary to adopt a gender-based approach to target males in a more intentional manner to increase their participation in tertiary education.

Gender (Course type)

Globally, female students and employees are under-represented in STEM-related fields (World Economic Forum, 2020). Hence, we expected that there would be more males than females in STEM-related courses (i.e., Engineering Sciences, Health Sciences, IT and Natural & Mathematical Sciences) in polytechnics and universities amongst TTFS recipients.

Figure 8a

Distribution of Polytechnic TTFS Recipients enrolled in STEM courses by Gender

n = 1,098

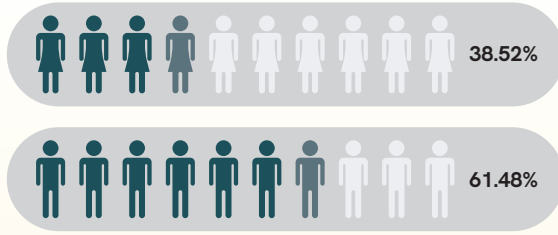
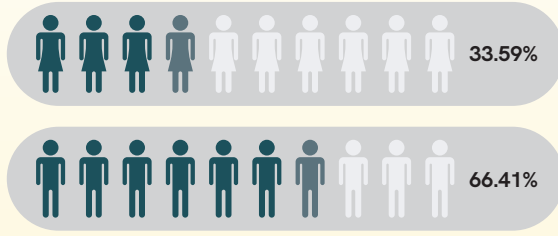


Figure 8b

Distribution of University TTFS Recipients enrolled in STEM courses by Gender

n = 396



Our findings indicated that there were more males than females in STEM-related courses in polytechnics (61.48% males, 38.52% females) and universities (66.41% males, 33.59% females) amongst TTFS recipients (see Figures 8a and 8b). This suggests that there is an under-representation of females in STEM-related courses in general. We then decided to investigate two of the courses that tend to have more males than females – engineering and IT.

According to the Malay population statistics, the representation of males and females in the engineering sciences in polytechnics are 51.7% and 15.1%, respectively (Yayasan MENDAKI, 2022). At the university level, male and female representation in the engineering sciences were 27.2% and 7.4%, respectively (Yayasan MENDAKI, 2022). Similar trends were also seen with IT at the university level (8.5% males and 2.3% females), though less so in polytechnics (8.8% males and 8.8% females). Using this as a reference point, in general, we expected that there will be more males than females in the engineering sciences and IT courses in our TTFS data.

Figure 9a

Distribution of Polytechnic TTFS Recipients in the Engineering Sciences by Gender

n = 560

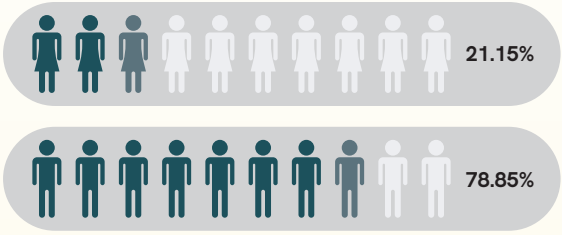


Figure 9b

Distribution of University TTFS Recipients in the Engineering Sciences by Gender

n = 227

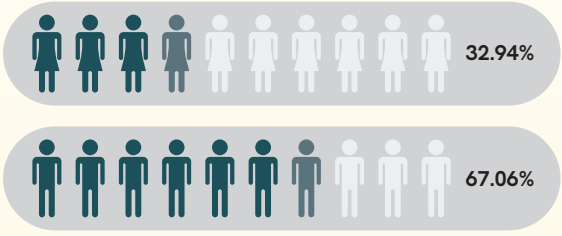


Figure 10a

Distribution of Polytechnic TTFS Recipients in IT by Gender

n = 170

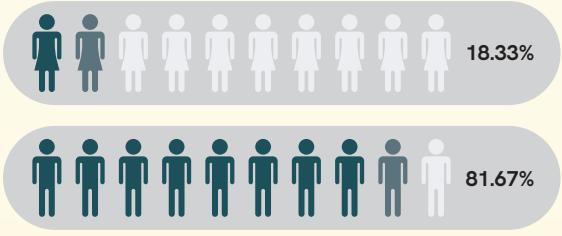


Figure 10b

Distribution of University TTFS Recipients in IT by Gender

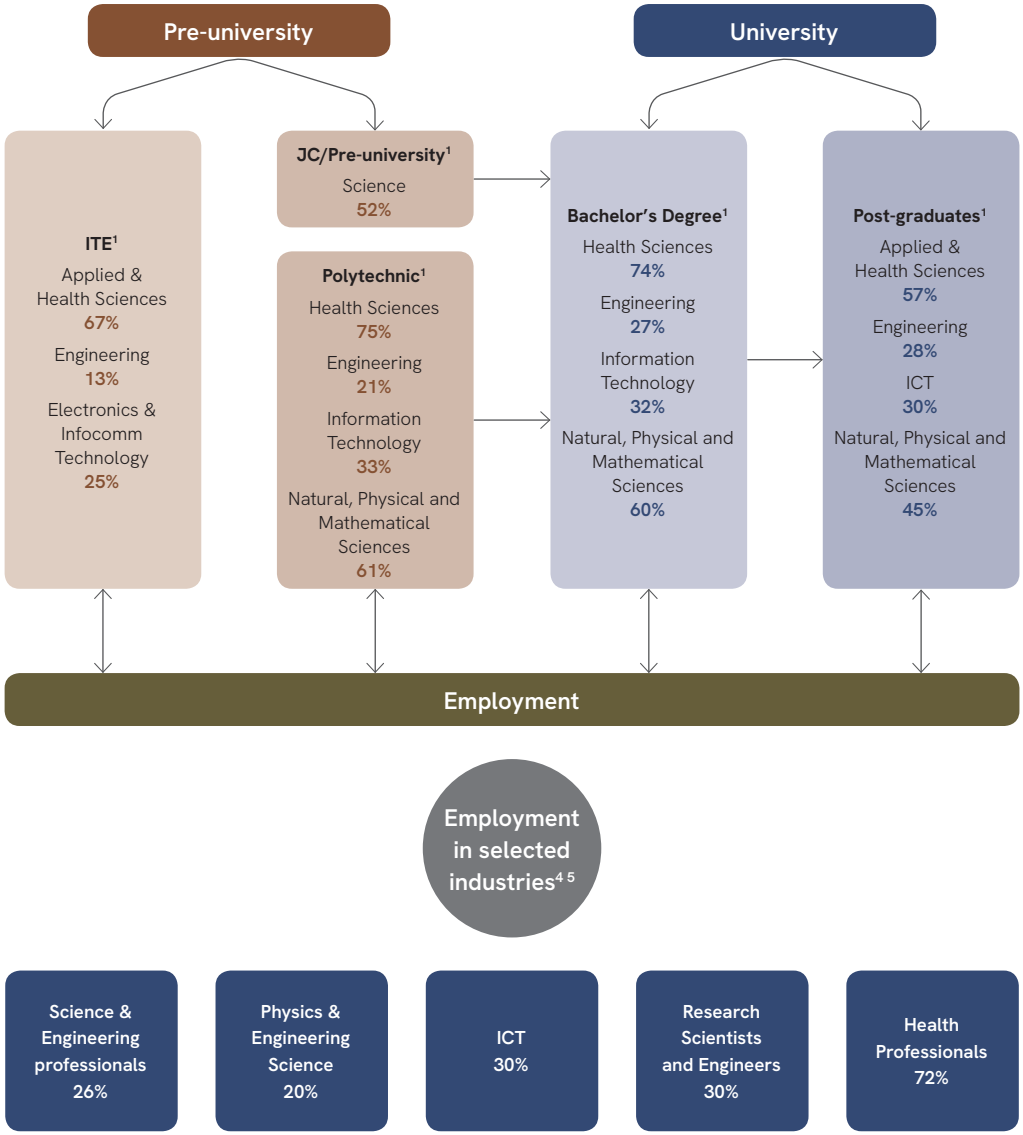
n = 60

Our findings indicated that majority of TTFS recipients in the Engineering Sciences and IT were males. The results for our polytechnic TTFS recipients are approximately reflective of the trend at the national level. Female representation in the Engineering Sciences and IT at the polytechnic level are 21% and 33%, respectively. At the university level, female representation in the Engineering Sciences and IT are 21% and 18%, respectively (see Figure 11). In contrast, the percentage of female TTFS recipients who were enrolled in IT courses in university was lower than its equivalent in the national statistics (32%), showing an under-representation amongst the female TTFS recipients in IT courses in university. Overall, there is a low representation of females in STEM-related courses in both polytechnics and universities. Tackling the STEM gender gap is important as Singapore is transitioning into a digital society. A gap would have meant a deficit in human capital in our workforce, as well as substantial effects on the nation's creative output. For example, despite ranking 8th in the 2019 Global Innovation Index (Cornell et al., 2020), Singapore only ranked 34th in creative output and 36th in the percentage of females employed in knowledge-intensive services.

Figure 11

Women in STEM from pre-university to employment in Singapore

Extracted from Chua, S.N., Kline, K., and Lim, S. (2022)



*Data taken from 2019 or the closest year.

1. Ministry of Education Digest 2020.
2. Statistics Singapore Newsletter March 2016.
3. A-star National survey of research and development in Singapore.
4. Annual survey on Infocomm Media Manpower 2019.
5. Labour market report release 2020.

In Chua, Kline, and Lim's (2022) analysis, they mentioned that there are two possible contributing factors to the gap in female participation in STEM courses – motivation and gender stereotypes. For motivation, two types were mentioned, intrinsic motivation and extrinsic motivation. Intrinsic motivation is derived from within the individual and is known to facilitate the uptake of STEM-related courses. Extrinsic motivation is facilitated by extrinsic factors such as external rewards or pressures, testing cultures and parental facilitation. While intrinsic motivation may help with the uptake of STEM courses, a number of studies found extrinsic motivation to be detrimental for students in high-stakes testing cultures like those of Japan and Singapore, where they are under high personal and parental pressure to succeed (Chua, Kline, & Lim, 2022). When extrinsically motivated students are under such academic pressure, they become more easily distracted, less effective with time management, and less positive about learning (Chua, Kline, & Lim, 2022). In the long run, intrinsic motivation is preferred over extrinsic motivation.

One of the ways to facilitate interest and intrinsic motivation to take up STEM-related courses is through sharing from industry practitioners. Yayasan MENDAKI organises YOUth@M^3 Towns networking sessions for tertiary students. During these sessions, the host and speakers will share perspectives on the future work landscape, list of growth industries and jobs as well as future ready skills and competencies that are valuable for tertiary students. One of the topics that could be emphasised and expanded on in future sessions is Women in STEM.

In the discussion of gender stereotypes regarding mathematics, research has shown that primary school boys and girls tend to associate the concept of mathematics with boys (Cvencek, Kapur, & Meltzoff, 2015). In addition, stronger math-gender stereotyping was associated with higher math self-concept for boys but lower math self-concept for girls, which in turn predicted math achievement. The study also found that older children are more likely than younger ones to endorse math-gender stereotypes. Therefore, to shift stereotypes and facilitate more female participation in STEM, we recommend increasing teacher awareness of gender stereotypes at a national level and deemphasise associating mathematics with boys.

At an organisational level, Yayasan MENDAKI's programmes cover the entire spectrum from preschool children to working adults. For parents of preschoolers, Yayasan MENDAKI runs the KelasMateMatika (KMM) programme. The programme empowers

parents with Mediated Learning Experience skills so that they become more confident in teaching their children basic numeracy concepts. The KMM programme also presents opportunities for parents to be acquainted to STEM concepts. For example, KMM facilitators can emphasise the importance of numeracy and mathematical concepts in STEM fields. Hands-on learning experience or excursions to STEM-related activities, for example at the Singapore Science Centre, may be organised as post-KMM engagement sessions to demonstrate the relationship between numeracy concepts and STEM fields. At the primary and secondary levels MENDAKI Tuition Scheme tutors could take such considerations into account when teaching Mathematics and Sciences to their students. In their interactions with parents, they could highlight the progress in mathematics and science subjects for their female students. This will hopefully increase the number of females taking up STEM courses at the tertiary level by intervening upstream – while students are still in primary and secondary schools. Other Yayasan MENDAKI initiatives such as #amPowered mentoring programme and Professional Networks have served as platforms to encourage collective participation in STEM. For example, industry leaders from Yayasan MENDAKI Professional Network in STEM have been invited as Human Libraries to share their educational journey and career pathways at YOUth@M^3 Town sessions and "Future of Engineering" Workshop.

Additionally, in a study conducted by 3M, they found that parents play a major role in influencing their children's career paths, with more than a third of them mentioning that they have said things to their children that could discourage them from pursuing STEM careers (Begum, 2019a). Hence, such findings highlight how parents could influence their children's future career decisions. Engaging families in interventions is pertinent, given that parents and extended family members play a key role in shaping the tertiary education aspirations, planning, and participation of young adults (Savitz-Romer et al., 2010). Therefore, upstream measures to tackle the low uptake of STEM subjects and careers are required. In this regard, Yayasan MENDAKI's educational framework encompasses programmes tailored for diverse age groups, from early childhood education to adult learning initiatives. These programmes are designed to address the specific needs and developmental stages of individuals at various points in their lives, ensuring a holistic educational experience that spans across all age brackets and learning levels.

Conclusion

This study sought to explore and describe the latest cohort (Year 2022) of TTFS recipients. We found that the majority of the TTFS recipients were made up of the 100% subsidy tier – with PCI of $1,400 and below. The majority resided in 4-room to 5-room flats and were mostly studying in polytechnics. They exhibited a preference for the Engineering Sciences, with male representation higher than female representation. In our exploration of housing type, we found that those who resided in 4-room to 5-room flats mostly consisted of those with PCI of $1,400 and below. There is some evidence suggesting that there may be a need to redefine our understanding on housing type as a proxy for SES. Having a large home does not suggest that one does not require financial assistance. From this perspective, Yayasan MENDAKI's approach to disburse financial assistance based on PCI is a good judgment call.

While the data from TTFS is encouraging as it showed an equal access to tertiary education for both genders at present, emerging evidence from international data point to the general declining rate of male participation in higher education. Hence, it might be necessary for Yayasan MENDAKI to adopt a gender-based approach in its outreach strategies in the future. The adoption of a gender-based approach also extends to strategising about female uptake of STEM courses and qualifications, which is something that we are already observing.

At an organisational level, Yayasan MENDAKI will continue to promote the use of TTFS in polytechnic and universities through close collaboration with school partners, enhance its outreach efforts to families across all types of housing, and encourage upstream efforts and collaboration with families for students to continue pursuing tertiary education. Such efforts, over time, will contribute towards improving the Malay community's rate of participation in tertiary education, thereby uplifting the community.

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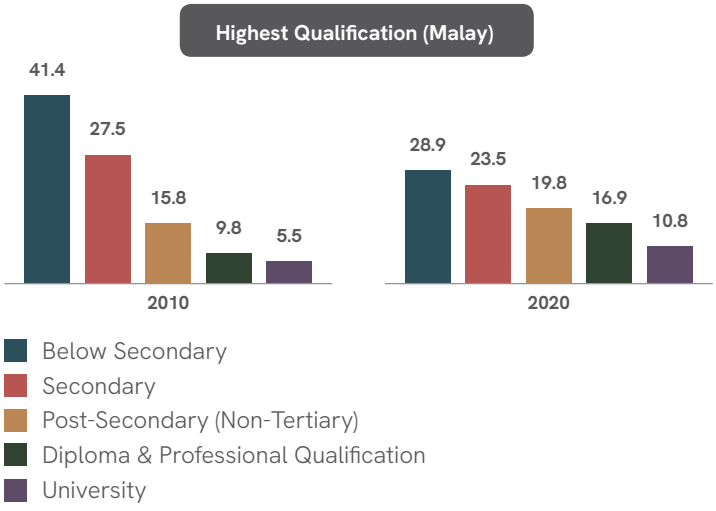
Did You Know?

TTFS and Study Loans

- More than $22 million* disbursed to close to 10,000 students in 2022

* Reported as of 31 Dec 2022, excluding certain polytechnic and university billings

Source: Yayasan MENDAKI 2022 at a Glance. (2023). Yayasan MENDAKI. (2023). https://www.mendaki.org.sg/wp-content/uploads/2023/01/Yayasan-MENDAKI-2022-Year-in-Review-Infographics-updated-16-Jan-2023.pdf



From 2010 to 2020, the percentage of Malay residents having below secondary **(from 41.4% to 28.9%)** and secondary **(from 27.5% to 23.5%)** as highest qualification decreased.

The percentage of residents going to post-secondary **(from 15.8% to 19.8%)**, diploma and professional qualification **(from 9.8% to 16.9%)**, and university **(from 5.5% to 10.8%)** increased.

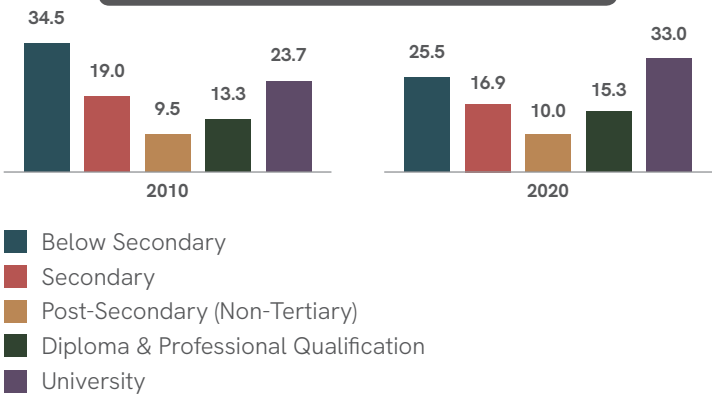
This showed that Malay residents with post-secondary or higher qualification **increased from 31.1% in 2010 to 46.7% in 2020.**

Malay university graduates also doubled from 2010 to 2020.

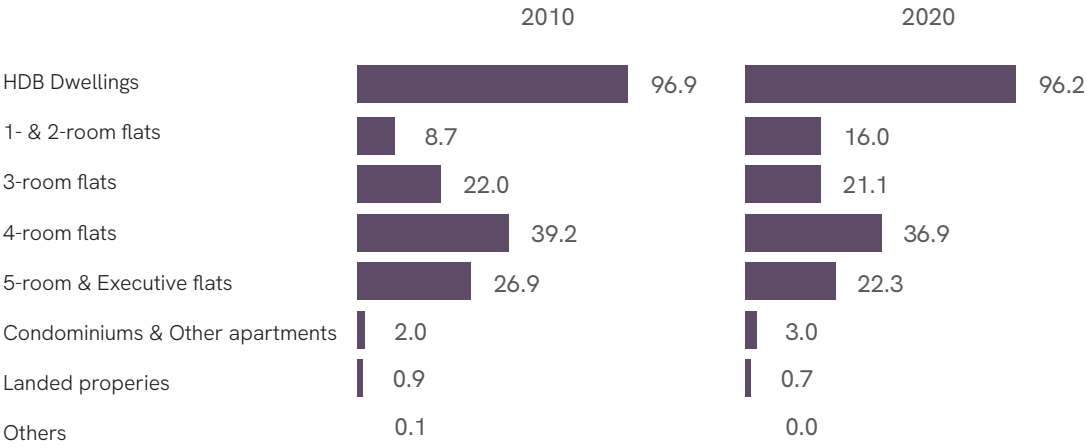
Source: Singapore Department of Statistics. (2021). Census of Population 2020, Statistical Release 1, Demographic Characteristics, Education, Language and Religion. Retrieved from https://www.parliament.gov.sg/docs/default-source/default-document-library/cop2020sr1.pdf

However, the Malay community still has some ground to cover in order to align with the resident population.

Highest Qualification (Resident Population)



Dwelling Type Among Malay Population (%)



Uplifting the Malay Community through Learning and Employment

Abstract

The Employment and Employability Study conducted by Yayasan MENDAKI in 2021 highlighted various employment, training, and upskilling trends in the Malay community. It discovered that a substantial number of Malay workers were employed in industries susceptible to automation and Artificial Intelligence disruptions. This underscores the importance of training and upskilling in the community to minimise the potential effect of this development. While the survey revealed enthusiasm among participants for upskilling and utilising their robust social networks to seek employment, the under-utilisation of Employment Assistance and Skills Upgrading Programmes may indicate a lack of follow-through. This suggests a potential deficit in training and essential skills necessary to adapt to industry transformations driven by technological advancements. To maximise the potential for professional progress, it is imperative to translate this enthusiasm for learning into actionable steps. Collaborating with government agencies becomes essential to address imminent challenges faced by Malay workers and foster a meaningful shift in both mindset and actions.

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This article was also written with Nur Nadiah Zailani and David Tan Yong Kwang.

Introduction

The Employment and Employability Study, conducted by Yayasan MENDAKI in 2021, aimed to understand the attitudes and perceptions the Malay community had towards lifelong learning and its importance in their careers. Specifically, the mixed-design study sought to uncover and comprehend the fundamental factors shaping professional development and career decisions within the Malay workforce, establishing a comprehensive understanding of their behaviour within the labour market.

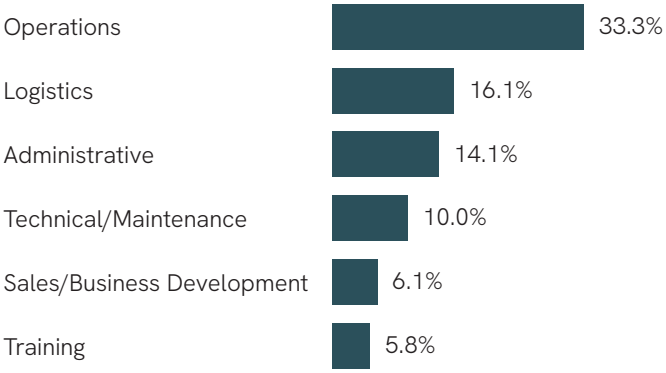
Nature of Study

The quantitative component of the study comprised a door-to-door survey conducted between December 2021 and January 2022, gathering data from 1,002 individuals. These participants were all Singapore citizens or permanent residents who identified as Malay. The survey group comprised a broad spectrum of age groups, academic qualifications, and income levels with a balanced representation of gender.

Complementing the quantitative approach, post-survey qualitative discussions were held to enrich the findings by delving into the reasons behind observed trends and behaviours. These focus group discussions, segmented into working and non-working groups, were conducted via Zoom sessions in March 2022, offering deeper insights into the underlying motivations and contextual nuances influencing decisions within these groups.

At Risk of being Disrupted by AI, Silently

Insights from the survey revealed that a large proportion of the Malay population was working in low and medium-skilled jobs. Specifically in terms of occupation, Service and Sales Workers comprised a substantial 31.3% of the surveyed workforce, with Operations (33.3%), Logistics (16.1%), and Administrative (14.1%) functions emerging as the top three job functions. This aligns closely with Census 2020 data that highlighted the prevalence of Malay workers in transportation and storage (16.7%), public administration and education (16.2%), and administrative and support (10.7%) sectors. According to Frey and Osborne (2017), these roles are more susceptible to technological disruption.



Users are allowed to select multiple options below

N = 639

Over the past few years, there has been big developments and implementations in robotics, big data, machine learning, and Artificial Intelligence (AI) (Manyika & Sneader, 2018). This transformation is apparent in the current automation of manual routine tasks, observable through the deployment of self-ordering kiosks in fast-food outlets, robots aiding in manufacturing processes, and electronic gantries facilitating parking fee collections. Additionally, initiatives to automate manual non-routine tasks are underway, as observed in the trial implementation of autonomous vehicles as early as 2016 at One-North (Siong, 2016). More recently, the Singapore Armed Forces has been trialling autonomous vehicles for logistics and personnel transport in 2021, a stride toward reducing the reliance on human drivers (Teo, 2021).

The near future will likely see a continued reduction in manpower needed for routine and manual tasks. Furthermore, it will likely extend beyond routine functions to include automation of complex, non-routine tasks facilitated by generative AI. For example, sifting through piles of documents for key information can be enhanced by AI (Nunn, 2021), reducing the need for administrative workers to scrutinise through documents, bringing about massive change to the law industry. This trajectory of technological adoption necessitates a workforce attuned to and proficient in handling advanced technology, posing a concern especially for older demographics re-entering the workforce, who are potentially not aligned with current technological advancements.

Frey and Osborne (2017) highlighted cost-effectiveness as a primary rationale behind substituting labour with computer capital. This reasoning gains added weight in the prevailing high inflationary climate, which emerged post-pandemic recovery (International Monetary Fund, 2023). Their argument extends to the inevitable displacement of middle-skilled workers by technology, pressuring them to either "upgrade" or "downgrade" their roles. This transition is anticipated to significantly impact their income, reflecting potential adjustments in their remuneration.

Arguably, one of the most disconcerting aspects is the general lack of awareness regarding the changes brought about by technology. According to Lavoipierre (2023), employers have not been forthcoming about replacing their employees with AI solutions. At

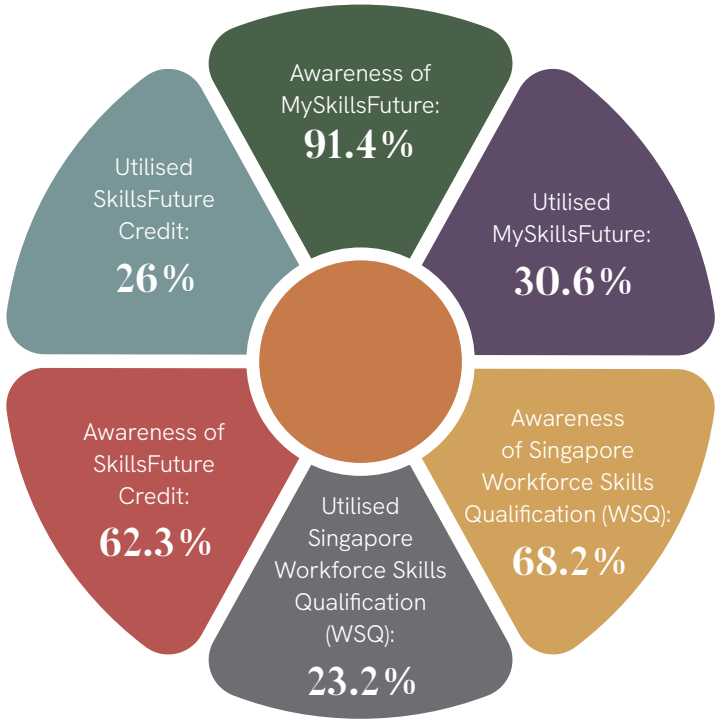
the aggregate level, this phenomenon is partly concealed because of employers attributing job cuts to various factors other than the use of AI (Lavoipierre, 2023). This could create a false sense of security with the status quo, while significant changes are silently unfolding in the background, posing a threat to livelihoods. Additionally, the impact of AI might be disguised through reductions in work hours instead of outright job losses. This means that even if one retains their job, their income diminishes. These indications underscore the pressing need for attention and change of one's mental model of the employment landscape.

Despite these challenges, a silver lining exists. Technology has catalysed several new job opportunities such as data analysts, systems engineers, and data privacy professionals (Tan, 2022), offering avenues for career diversification and growth. While the Malay community has a commendable 21.5% representation among graduates in Science, Technology, Engineering and Mathematics (STEM) disciplines (Theseira, 2023), concerted efforts are needed to direct the Malay community towards seizing these burgeoning opportunities in the tech sector. Yayasan MENDAKI plays a crucial role in fostering awareness among individuals about the significance of learning amidst the changing employment landscape. Their primary challenge lies in increasing participation rates across their various programmes, such as the Student Network and Professional Network. These initiatives aim to foster future competencies and establish connections with industry professionals to prepare individuals for the evolving economy.

Intention into Action

The pressing need for action is evident. Encouragingly, the results of our survey revealed a positive inclination among the Malay community towards learning, with approximately 80% expressing willingness to acquire either hard or soft skills. This aligns with the findings from Ng et al. (2022), providing further validation of our results.

However, despite this positive attitude, the utilisation of Employment Assistance and Skills Upgrading Programmes offered by various government agencies aimed at facilitating skill enhancement remains low. Then Speaker of Parliament, Halimah Yacob, highlighted that the Malay community was under-represented among the SkillsFuture Credit claimants in 2016 (Bachik, 2017). Similarly, the current usage of Skills Upgrading Programmes among the Malay community, as indicated by our survey data, remains low. For respondents who were aware of Skills Upgrading Programmes, less than one-third of them had previously utilised at least one of these programmes (MySkillsFuture: 30.6%, SkillsFuture Credit: 26.0%, Singapore Workforce Skills Qualifications: 23.2%).



Resolving challenges

This survey has highlighted two primary reasons for respondents' lack of interest in learning: (a) a scarcity of time, and (b) disinterest. For individuals constrained by time, several potential solutions exist.

Microlearning stands as a promising approach, involving the segmentation of courses into bite-sized modules or condensed sessions. This approach aims to alleviate the daunting nature of learning by breaking it down into more manageable segments (Chukwube, 2023).

Moreover, the availability of online and on-demand courses presents an additional and highly effective option. By offering flexible access to educational resources, individuals can learn at their own preferred pace and convenience. This approach eliminates the necessity to travel, saves time and accommodates individuals with irregular work schedules.

Another notable suggestion revolves around promoting on-the-job training. Encouraging and facilitating learning opportunities within the workplace emerges as a practical strategy to foster skill enhancement amid individuals' daily work routines (People Solution SA, 2023). This approach capitalises on the integration of learning seamlessly into the work environment, enabling individuals to acquire and hone skills relevant to their job roles.

Tackling the issue of disinterest in learning presents a significant challenge. As the proverb states, "you can lead a horse to water, but you can't make him drink," implying the complexities involved in stimulating actual action. One of the themes that emerged from our focus group discussions is disinterest in learning. Further probing by the facilitator on this theme revealed that individuals prioritised work-life balance, family, and recreational time over upskilling opportunities.

In the short term, upskilling demands a delicate balance between work obligations and academic pursuits, often requiring sacrifices in personal and family time. However, these sacrifices serve as an investment in a better future. By putting in dedicated effort now, individuals position themselves for higher roles within a company.

At this level, work-life balance is a corollary of the position they hold. Coupled with their courage to set boundaries, employees at the management level are better equipped to define and carve out time for work-life balance for themselves (Washington State University, 2023). In other words, it is important to adopt a long-term perspective. Pursing training in the short-term may take away family time now, but in the longer term, it may allow them to experience a greater degree of flexibility in shaping their work schedules and conditions.

While advocating for personal responsibility in learning, there is a critical need for employers and work structures to facilitate learning opportunities. In lower-wage jobs, individuals with lower educational backgrounds face challenges in balancing long working hours with limited workplace learning opportunities (Ng et al., 2022). Studies have also revealed disparities in funding sources for training among workers with varying education levels (Ng et al., 2022; Teng, 2023). Research indicated that approximately 64% of respondents with a diploma and about 69% with a degree had their training sponsored by employers. In contrast, a notably lower percentage—only around 46% of those with post-secondary education and approximately 41% with secondary education or below - had their training expenses covered by their employers (Teng, 2023). These segments of workers face uphill challenges in upskilling even if they are keen to learn. It is imperative for employers and government agencies to create a fair playing field, offering them opportunities for learning and development. Without this support, these individuals might remain at the bottom of the social mobility ladder.

Securing employment through Social Capital

Despite these prevailing challenges highlighted above, the Malay community does have some advantages too. The data shows that 1 in 2 participants relied on their social networks to secure their current position. This is significantly higher than the national average of 30.9% as reported by the Ministry of Manpower (2022). This suggests that bridging social capital plays an important role for the Malay community.

While relying on personal networks for employment is praiseworthy, it is important for them to contemplate their current success and acknowledge the constraints of their existing social networks (Matsuo, 2021). Over-reliance on them may inadvertently restrict access to diverse job opportunities beyond immediate circles. Expanding networks beyond close friends can enhance prospects (Rajkumar et al., 2022). Yayasan MENDAKI organises such professional networking sessions specifically designed to connect individuals with professionals outside their current social circles. These sessions offer valuable opportunities to network with industry experts and individuals within their preferred field, providing a platform to expand their connections beyond their existing social networks.

However, social networks have their vulnerabilities too. They are susceptible to disruption, whether through technological advancements or unforeseen events (Daly et al., 2021). The COVID-19 pandemic serves as a stark example of how industries can swiftly transform. Surviving such changes requires not only leveraging social capital but also complementing it with hard skills and continuous learning to stay competitive and adaptable in an ever-evolving professional landscape.

Conclusion

The rapid pace of technological advancement, notably driven by AI and automation, has already transformed various aspects of our daily lives, from QR ordering systems in restaurants to chatbots replacing traditional customer service roles. While the exact number of jobs displaced by AI remains unknown, the impact is evident. It is crucial to take preventive measures and prioritise upskilling initiatives to circumvent potential job displacement. Reports have indicated that individuals displaced by AI struggle to transition into newly created roles, underscoring the urgency to address this issue. Compounding this concern is the low utilisation of Skills Upgrading Programmes, making it imperative to emphasise the urgency of upskilling initiatives to combat this challenge effectively. If employers are unwilling to incorporate training for the lower educated to plug skill gaps, then perhaps some form of government support is needed to level the playing field for this disadvantaged segment.

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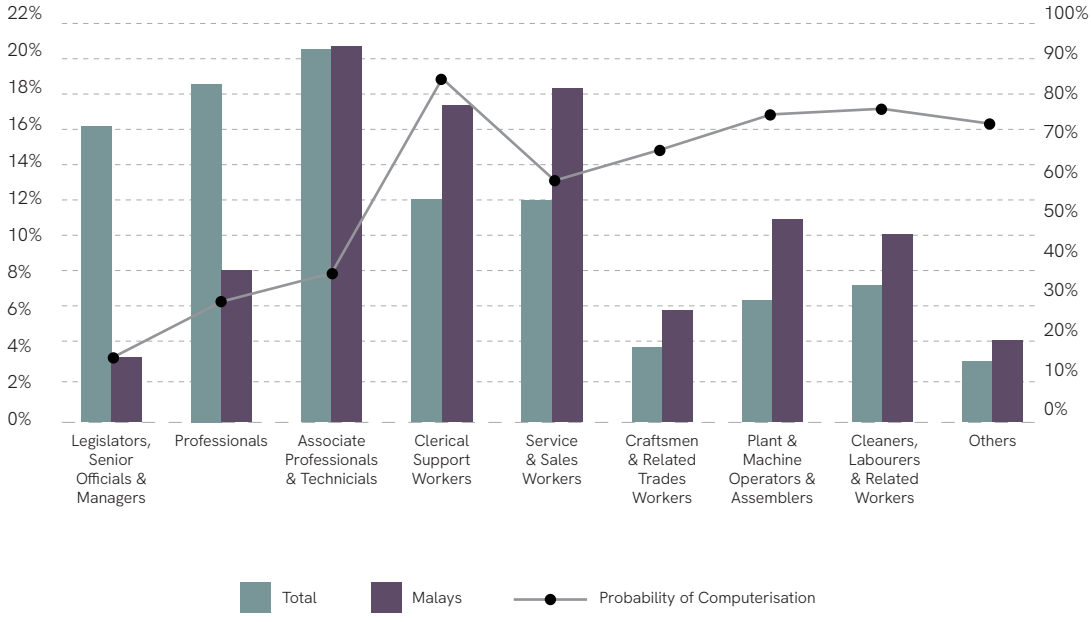
Did You Know?

Probability of Automation For Malay/Muslim Workers In Singapore



About 66% of Malay/Muslim employees in Singapore hold positions prone to automation and computerisation, surpassing the national average of 45%. They are over-represented in medium-skilled roles, especially in clerical support (17%), sales and services (18%), and skilled manual work (11%) entailing routine tasks. While historically pivotal in enabling middle-class access, these roles face heightened susceptibility to automation.

THE RISK OF AUTOMATION BY TYPE OF JOB TASK

	ROUTINE	NON-ROUTINE
COGNITIVE	Tasks that involve specific rule-based activities and require some knowledge work Examples: Record-keeping, customer service	Tasks that do not follow any systematic rules or patterns, and require some knowledge work Examples: Medical diagnosis, legal writing
	Automation Risk: Already highly automated	Automation Risk: Low but growing, limited by Machine Learning
MANUAL	Tasks that involve specific rule-based activities and physical labour Examples: Assembly, manufacturing	Tasks that do not follow any systematic rules or patterns, and require physical labour Examples: Driving, cleaning services
	Automation Risk: Already moderate to highly automated	Automation Risk: Moderate and growing, limited by Machine Learning and Robotics

The likelihood of jobs being automated relies on the balance between manual labour and cognitive skills, as well as routine versus non-routine tasks. Early automation, commencing in the 1960s, primarily impacted jobs that focused on systematic and repetitive activities, such as record-keeping or assembly. Computers, executing programmed instructions, initially automated routine tasks due to their ease of programming.

While early automation displaced workers engaged in routine tasks, it amplified the efficiency of higher-skilled professionals. Management and specialised roles saw productivity gains from automation as computers streamlined mundane job aspects. Consequently, while middle-skilled positions dwindled in developed economies, the demand for highly skilled professionals surged from the late 1990s to the 2010s.

Source: Theseira, W. & Isa, N. (2017). The Impact of Automation on the Malay/Muslim Community. The Karyawan. https://karyawan.sg/the-impact-of-automation-on-the-malay-muslim-community/

Upskilling for Non-PMETs: Challenges and Opportunities in the Policy Landscape

Abstract

Against the background of rapid technological change and globalisation, worker upskilling and reskilling is an important plank of Singapore's manpower policy. It serves not only Singapore's economic interests, but its social imperatives too, as the country strives to forge an inclusive society. However, Singapore's non-professionals, managers, executives and technicians (PMET) workers — who are at greatest risk of job redundancies — lag behind their PMET peers in training participation. This paper analyses existing policy measures to encourage skills upgrading among non-PMETs, before examining the case studies of Denmark and Norway. The paper then delves into five recommendations to make training accessible to as many non-PMETs as possible and encourage higher training participation among them. The recommendations underline the need for a holistic and customised approach to create a more conducive policy environment for non-PMET training.

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Continuing Education and Training (CET) is viewed by the government as a means to forge an inclusive society

Introduction

In recent years, the Singapore government has made worker upskilling and reskilling a centrepiece of its manpower policy. Against the background of rapid technological change and globalisation, workers can no longer simply rely on education and skills gained from their pre- employment school years to stay relevant in their careers (Brynjolfsson & McAfee, 2014). Instead, the current economic era — known as the Fourth Industrial Revolution — demands that workers pursue lifelong learning and continually adapt in a variety of work environments (Schwab, 2016). However, lifelong learning is not just an economic imperative for Singapore. It is also a social imperative. Continuing Education and Training (CET) is viewed by the government as a means to forge an inclusive society, where all Singaporeans, regardless of their formal education level, can maximise their potential and feel valued for their contributions (Ministry of Finance, 2014). Indeed, CET presents an opportunity for all workers — and non- professionals, managers, executives, and technicians (PMETs) in particular — to level up and move to more fulfilling jobs.

PMETs
resident unemployment

0.6 percentage points to **3.5%** from June 2019 to June 2020

Non-PMETs
resident unemployment

1.7 percentage points to **6.4%** in the same period (Tan, 2020)

Non-PMETs in the Workforce

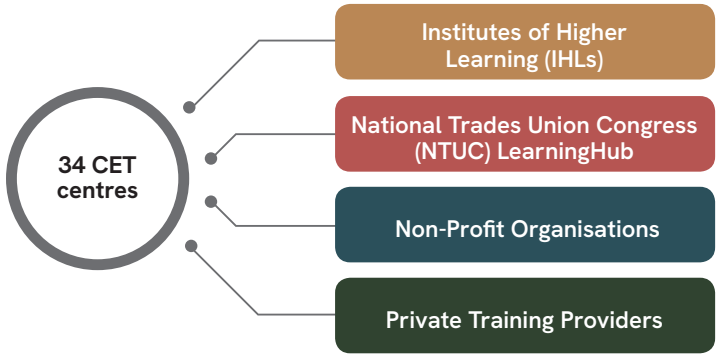
Non-PMETs comprised about 36% of the resident workforce in 2022 (Ministry of Manpower, 2023a), reflecting their decreasing share of the total workforce over the past few years as compared to PMETs. The COVID-19 pandemic revealed the precarity of non-PMETs vis-à-vis their PMET counterparts. During the pandemic, a higher proportion of non-PMETs lost their jobs as many of them were in industries heavily affected by the COVID-19 economic shutdown, such as accommodation, retail trade, and food and beverages services (Ministry of Manpower, 2020a). While the resident unemployment rate among PMETs rose by 0.6 percentage points to 3.5% from June 2019 to June 2020, the increment more than doubled among non-PMETs who saw their unemployment rate increased by 1.7 percentage points to 6.4% in the same period (Tan, 2020). However, despite their vulnerability, a lower proportion of non-PMETs in the private sector was provided structured training by their employers from 2010 to 2021, compared to PMETs (Ministry of Manpower, 2022b). A similar trend of lower non-PMET training involvement can be observed in many industrialised countries (Organisation for Economic Co-operation and Development, 2003). In addition, non-PMETs, who are disproportionately represented by

older workers and those with lower educational attainment, were less likely to reskill themselves in the face of workplace changes (Boo, 2023; Institute of Policy Studies, 2023). This has not escaped the Singapore government's attention. As noted by Senior Minister Tharman Shanmugaratnam, "blue-collar and ordinary white-collar workers" were more likely to stagnate in their career than PMETs, and therefore "equal opportunities for quality learning" should be afforded to them and other segments of the workforce (Teng & Ng, 2022). This effort is especially urgent, considering that non-PMETs are less likely to find meaning and purpose in work compared to other workers, with negative consequences on their career and personal outlook (Ang, 2023; Boo, 2023; Institute of Policy Studies, 2023). How can we then encourage greater training participation among non- PMETs? This paper aims to examine existing initiatives to encourage skills upgrading among non-PMETs, and recommend policy measures to make training accessible to as many non- PMETs as possible.

Analysis of Supply-Side Policies

Singapore's CET landscape has been enhanced under the SkillsFuture, a national movement to provide all Singaporeans the opportunities to develop their fullest potential and promote skills mastery throughout life, regardless of their starting point (SkillsFuture Singapore, 2022). The Singapore CET Masterplan was refreshed in 2014 to focus on "building deep expertise in the Singapore workforce", "enabling individuals to make informed learning and career choices", and "developing...a wide range of high-quality learning opportunities" (Ministry of Manpower, 2020b). 34 CET centres have been established — encompassing Institutes of Higher Learning (IHLs), National Trades Union Congress (NTUC) LearningHub, non-profit organisations, and private training providers — offering Singapore Workforce Skills Qualifications (WSQ) courses for a wide range of industries (SkillsFuture Singapore, 2020). However, to what extent are the training opportunities known and accessible to non-PMETs? Tripartite leaders agree that Singapore workers generally need more help to identify the skills they lack, and qualifications needed (Ng, 2022). Yang et al. found that workers with skills gaps were not seen by employers as the top priority for training, compared to workers with high potential (Yang et al., 2022). In another research, workers reported lack of financial resources and time as key barriers to attending self-initiated training (National

Trades Union Congress, 2023). All these represent a missed opportunity for skills upgrading for non-PMETs, who are more likely to benefit from training through a post-attendance pay rise or promotion (Hoskins & Facchinello, 2018; Ministry of Manpower, 2006). The evidence points to a need for a more concerted effort to promote training for non-PMETs — whether employer-supported or self- initiated.



This is not to say that the government has no specific programmes targeting the skills development of non-PMETs. The Progressive Wage Model (PWM), Workfare, and Rank-and- File (RnF) training schemes all aim to support the upgrading of non-PMETs' skills — but these programmes do not cover all non-PMETs. The PWM ties wage increases to skills and productivity growth for low-wage workers in selected sectors, mapping out a clear career and training pathway for them (Ministry of Manpower, 2023b). However, PWM is compulsory only in the cleaning, security, and landscape sectors where the government has regulatory levers over its implementation, through company licensing. While PWM would be expanded to other sectors and occupational groups such as food services, waste management, and administrators and drivers in 2023, it is unlikely that employers would adopt this requirement voluntarily, partly because companies fear that paying better wages would increase costs and lead to them being outbid for tender projects (Sapari & Pitchay, 2022). The Workfare Skills Support (WSS) provides financial incentives for low-wage workers to attend training, and funding for companies to finance the absentee payroll (Central Provident Fund Board, 2023). However, not all non-PMETs qualify for WSS, as eligibility is limited to low-wage workers

earning S$2,500 or below per month. The RnF training programmes allow non-PMETs the opportunity to attend training and be offered placement or attachment in a participating company (Workforce Singapore, 2021). Still, many non-PMETs are excluded because the programmes are only applicable to workers who wish to change careers and enter a substantially different job role.

Analysis of Demand-Side Measures

The government has been exhorting companies — especially home-grown small and medium enterprises (SMEs) that, together, employ 70% of the workforce (Ministry of Manpower, 2022c; Yahya, 2013) — to undergo transformation to improve productivity, expand their businesses, and create quality jobs (Choo, 2021). As a corollary, worker training — whether for non-PMETs or PMETs — is regarded by the government as a major enabler of transformation efforts. Training has been shown to be positively correlated with productivity (Black & Lynch, 1996; Tan, 2021) and is promoted as a prerequisite for sustainable wage growth (National Wages Council, 2022). In their 2022/2023 guidelines, the tripartite National Wages Council (NWC) called upon employers and employees to "take decisive steps" to "transform jobs and invest in upskilling" the workforce, including RnF workers (National Wages Council, 2022, p. 6). An important lever to company transformation and training efforts is the NTUC Company Training Committee (CTC) programme. This is where companies form CTCs comprising management, worker, and union representatives to identify and drive areas for business transformation, tapping on tools in NTUC's training and placement ecosystem and the S$70 million government-funded CTC Grant to implement transformation plans (Ong, 2022; Tan & Liw, 2022). Nevertheless, while CTCs are a forward-looking and innovative platform to drive training and business transformation, more focus is needed on non-PMETs who most urgently need help in the face of transformation efforts.

Besides tapping government subsidies to fund reskilling and upskilling opportunities for employees, companies have been encouraged to learn about emerging career trends and in- demand skills to prepare their workers — including non-PMETs — for changes in job functions (National Wages Council, 2022). Indeed, SkillsFuture Singapore (SSG) releases publications such as the Jobs-Skills Quarterly Insights and the annual Skills Demand for the Future Economy Report

for citizens and enterprises to keep abreast with jobs and skills changes in fast-moving sectors (SkillsFuture Singapore, 2023). This information sharing is buttressed by the SkillsFuture Queen Bee network, a group of industry-leading companies championing skills development in organisations like SMEs, by helping them identify and acquire the skills needed for transformation (GoBusiness Singapore, 2023). Nonetheless, companies still reported difficulties identifying relevant courses and matching employees to training (Yang et al., 2022). This finding suggests the need for more industry involvement in shaping CET courses and pathways. A KOF Swiss Economic Institute research article found that Singapore has one of the lowest education-employment linkage (EEL) indexes among the countries studied, pointing to a relatively low level of industry inputs in the CET system (Renold et al., 2016).

Case Studies: Denmark and Norway

The Nordic countries are known for their high levels of adult learning participation, and good economic conditions with gross domestic product (GDP) per capita being above the European Union (EU) average (Cedefop, 2015). This paper will now examine the adult learning landscape in Denmark and Norway and how their non-PMET workforce has benefitted from it. Both countries scored above the Organisation for Economic Co-operation and Development (OECD) average in the Programme for the International Assessment of Adult Competencies (PIAAC) Survey of Adult Skills for all their workers, performing better than Singapore (Organisation for Economic Co-operation and Development, 2016).

The primary objective of adult education in Denmark is to provide "adequate" and "relevant" CET to adults across the levels, from "the low-skilled to university graduates" (Organisation for Economic Co-operation and Development, 2003, p. 94). The tripartite social partners are the main actors in the policy design and implementation of adult learning, and training for employed persons, as well as training leave are funded by the government. The educational reform of 2001 saw Denmark introducing two new programmes targeting the upskilling of non-PMETs: Preparatory Adult Education and Basic Adult Education (Nørholm, 2006). Furthermore, there is strong industry linkage with the education system, ensuring that students are trained with workforce-relevant skills (Renold et al., 2016). The provision of CET to non-PMETs is also contextualised based on the

experience that they would rarely seek training themselves, trusting their employers to connect them to relevant courses (Nørholm, 2006). In this respect, the educational consultants in Danish trade unions play a leading role in sensing the training needs of workers based on industry demands and linking up workers with local educational establishments.

Norway's adult education system is predicated upon forging an inclusive society. The country's CET model aims to "raise the education level of the entire adult population" while meeting the labour market's needs for relevant competencies (Organisation for Economic Co- operation and Development, 2003, p. 96). Social partners have a strong role in designing adult learning policy, and there is free tuition for labour market training. In 2006, Norway introduced the Basic Competence in Working Life programme, aimed at upskilling workers most in need of training (European Commission, 2022). The programme involves organising training at workplaces, with customised curriculum and flexible schedules. By recognising the importance of quality career guidance for people at different stages of their education and work careers, the Norwegian Education Ministry established the National Unit for Lifelong Guidance, providing "free, public career guidance centres in all counties" (European Commission, 2022). In addition, the Norwegian adult education system recognises skills gained from non-formal and informal learning, with skill centres established to document those competencies using "national curricula as criteria for validation" (European Commission, 2022). The documentation process includes various modes of testing such as "dialogue-based methods" and "portfolio assessment", and the certification gained could be used in the labour market as evidence of "formal competence" (European Commission, 2022).

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There needs to be a mechanism in Singapore where industry demand for specific skills is efficiently relayed to the education system

Discussions and Recommendations

The Singapore government recognises the importance of upskilling and reskilling non- PMET workers, placing this on top of its manpower policy agenda. Nevertheless, more could be done to make training accessible to as many non-PMETs as possible, with the involvement of industry and Labour Movement partners. Only then could Singapore truly be a “meritocracy of skills” (Desker, 2016), as envisioned by Senior Minister Tharman Shanmugaratnam. This paper lists five recommendations to create a more conducive policy environment for non- PMET training.

First, as in the Danish example, there needs to be a mechanism in Singapore where industry demand for specific skills is efficiently relayed to the education system — including CET centres, IHLs, and private training providers — so that all workers would know which skills are in demand and could be trained for, in anticipation of filling a new role. This should also allow for industry involvement in shaping CET courses, and the education system to project future skill needs. Singapore is taking nascent steps towards this direction through the appointment of Jobs-Skills Integrators (JSITs) as announced by Deputy Prime Minister Lawrence Wong at the 2023 Annual Budget (Ministry of Finance, 2023). The JSIT pilot would be launched in three sectors: precision engineering, wholesale trade, and retail (Ministry of Education, 2023). To ensure that JSIT would benefit non-PMETs, the programme should be extended to other sectors with a high proportion of non-PMETs such as manufacturing, construction, accommodation and food services, and arts, entertainment, and recreation.

Second, PWM should be expanded to other sectors and occupational groups in Singapore, and be made compulsory beyond the cleaning, security and landscape industries, so that a larger number of non-PMETs could benefit from a structured career and training pathway. As a corollary, more should be done to promote “best sourcing” (Ministry of Manpower, 2022a), where companies grant service contracts based on performance and quality, rather than just on price. A study of Singapore’s private security services industry found that the “institutional logics” of awarding contracts to the lowest bidder perpetuate a “low-skills equilibrium” among companies who did not see the need to train their security officers beyond the stipulated bare minimum (Gog, 2015, p.110). At the root

of the issue is how much are Singaporeans willing to pay for the true cost of quality services and support fair wages. This would involve recognising that each and every worker and trade have their own unique contributions to society, and must be valued.

Third, training should be customised and targeted to our non-PMETs, considering their learning styles, need for schedule flexibility and the observation that they would rarely seek training themselves. As in the Norwegian case study, microlearning, where workers are provided with "daily, bite-sized chunks of content" (International Labour Organization, 2019), as well as the recognition of skills gained from non-formal and informal learning, should be especially promoted to encourage training among non-PMETs. Singapore is making progress on this front with the recent introduction of the Workplace Skills Recognition (WPSR) Programme, where workers can undergo on-the-job learning and have their skills certified by assessors (Ministry of Education, 2023). Moving forward, more companies should be encouraged to get on board the programme, and different modes of testing, for example, through informal conversations, should be introduced to make training and certification more appealing to non-PMETs.

Fourth, Singapore trade unions could play a stronger role in advocating the training needs of non-PMETs, like their Danish counterparts. For example, our trade unions could work with companies to obtain the skills and career profile of non-PMET workers, and relay the information to NTUC's training and placement ecosystem for a needs analysis. In addition, the terms in the CTC memorandum of understanding or the collective agreement should specifically highlight the upskilling of non-PMETs — who are most at risk of job redundancies — as a core priority. For example, the terms could call for training targets to be set, and for protected training time and training leave for non-PMETs. Importantly, for such committees to more effectively champion the skills advancement of non-PMETs, RnF workers need to be represented among the members, and formalised human resource (HR) policy should explicitly call for non-PMET upskilling (Wotschack, 2019).

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Singapore Labour Movement could work with employers and the government to set up a mentorship programme for non-PMETs

Fifth, the Singapore Labour Movement could work with employers and the government to set up a mentorship programme for non-PMETs where they would receive personalised guidance to articulate their career aspirations, and chart out skills and training needs. This initiative could be modelled on the existing LIT (Learning is Triggered) Mentorship Programme (Young NTUC, 2023) by Young NTUC — the youth wing of the Labour Movement — and be supported by the national Mentoring SG collective which was launched in December 2022 (Ministry of Culture, Community, and Youth, 2023).

A significant precondition for the successful implementation of these recommendations is a sound working relationship between the social partners in support of workers' wages, welfare, and work prospects. Indeed, Singapore, Denmark, and Norway have exemplary records of tripartite collaboration within each society. For example, in the wake of the COVID-19 pandemic, the respective union, employer, and government representatives of each country demonstrated their ability to work together to support workers moving into new industries with skills upgrading and job restructuring, preventing mass unemployment (Organisation for Economic Co-operation and Development, 2022). Consequently, countries aiming to create a conducive environment for non-PMET upskilling would do well to foster tripartite collaboration and social dialogue from the outset.

Conclusion

This paper has highlighted existing policy measures to encourage upskilling and reskilling among non-PMETs, acknowledging the Singapore government's objective of lifelong learning as a means to forge social inclusion and solidarity. Examining the case studies of Denmark and Norway, the paper then delves into five recommendations to encourage higher training participation among non-PMETs. The recommendations underline the need for a holistic and customised approach to create a more conducive policy environment for non-PMET training.

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Commentary on "Upskilling for Non-PMETs: Challenges and Opportunities in the Policy Landscape" by Muhammad Farouq Osman

Introduction

In his article published in the Singapore Labour Journal, Muhammad Farouq Osman highlighted that non-professionals, managers, executives, and technicians (PMETs) are more precarious to economic disruptions, as evident during the pandemic, and are more likely to be unemployed than PMETs. Despite these vulnerabilities, re-skilling and training participation among non-PMETs is low due to financial and time constraints and employers' preference to prioritise professional development for workers with high potential.

To address these issues, the author drew on case studies from Denmark and Norway and put forth recommendations on how best practices from the Nordic countries can be applied to strengthen existing initiatives such as the Jobs-Skills Integrators (JSITs), the Progressive Wage Model (PWM) and even to provide mentoring opportunities for non-PMETs to receive personalised guidance on their career aspirations and training needs.

Siti Khadijah Bte Setyo R S

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Malay PMETs

7.2%
1980

39%
2020

Characteristics of non-PMETs in the Malay/Muslim community

The call to re-examine career development challenges faced by non-PMETs and opportunities to be more engaged in training is important for the Malay/Muslim community. While the proportion of Malay PMETs has increased from 7.2% in 1980 to 39% in 2020 (M^3, 2022), findings from Yayasan MENDAKI's Employment and Employability Study showed that 66.5% of surveyed participants were employed as technicians and non-executives, with Operations, Logistics and Administrative being the top three job functions of Malay workers.

Through focus group discussions, research participants also echoed similar challenges, such as time constraint and lack of interest towards training. This lack of interest is not a reflection of the Malay community's aversion towards learning but is likely influenced by their lack of awareness on available training opportunities for non-PMETs.

Workplace mentoring for non-PMETs

Hence, the author's recommendation to provide work mentoring opportunities for non-PMETs is welcomed. In fact, since 2022, Yayasan MENDAKI has collaborated with National Trades Union Congress U Women and Family to provide career mentoring and networking opportunities to rank-and-file back-to-work women under Women@Work programme. Meta-analyses on the effects of workplace mentoring (Eby & Robertson, 2020) showed that, while effect sizes are between small and moderate, being a mentee is associated with positive work attitudes, higher performance, and subjective and objective career success.

However, there might be barriers to fostering effective and quality mentoring relationship in the workplace. For example, Kram (1985) discussed the norms of professional behaviours that exist in workplace settings such as the acceptable levels of relational closeness. This suggests that norms surrounding professionalism might discourage mentees and mentors to engage in reciprocal personal self-disclosure, thus limiting opportunities to build high quality relationships.

Therefore, for workplace mentorship to be effective, guideline on the boundaries of sharing need to be clearly outlined to assure mentors and mentees that they can share freely and without fear of any negative repercussions to their professional image. By nurturing an effective workplace mentoring relationship, it is hoped that mentors not only provide information on relevant training opportunities available to non-PMETs, but also to share firsthand experiences on the tangible (e.g. job promotion) and intangible (e.g. sense of personal accomplishment) benefits of upskilling and career progression.

For example, participants from Women@Work programme who have benefited from career mentoring shared that they are now more confident to navigate through the job seeking process, thus allowing them to attain new job roles and supplement their families' household incomes. Through the programme's framework of 3R's, namely Restart, Rebuild and Re-integrate, women who have been unemployed for more than six months and are seeking re-employment are able to return to the workforce through skills upgrading, capacity building and job coaching. These opportunities

“

Guideline on the boundaries of sharing need to be clearly outlined

provide a foundation for Women@Work programme participants to continue charting their career progression.

Cultivating knowledge and community assets to build a Community of Success

Drawing from the Danish experience, the author also highlighted the importance of alignment between the demand and supply of labour. Thus, an effective mechanism to relay specific skills demanded by employers to the education system needs to be in place. Building on the current pilot of the JSIT initiative, the author recommended for the expansion of the JSITs to sectors with a high proportion of non-PMETs such as manufacturing, and accommodation and food services. This would provide non-PMETs with sector-specific career advisory services and opportunities for career prospect enhancements through upskilling.

Recognising the power of networking and need to cultivate community assets, Yayasan MENDAKI has established the Professional Networks as a platform for professionals to learn from sharing sessions with industry experts, build their social capital and facilitate their efforts to contribute back to the community. These Professional Networks include professionals from various industries such as Tech, Life Sciences Banking and Finance, and Engineering. More Professional Networks, such as professionals from the Media and Creatives and Social Work sectors will be formed in the future. These professionals are our community assets, and they play a vital role in cultivating and expanding the community's social capital through engagements with youth and other aspiring professionals. Through these engagements, participants are offered a glimpse of the jobs and skills required to excel in the desired industry.

Building on the author's recommendation to expand the JSIT initiative to non-PMETs, Yayasan MENDAKI has expanded the Professional Networks sharing sessions to include non-PMETs through the "Future of..." Series workshops. In these sessions, professionals from various industries such as Banking and Finance, Healthcare and Legal are invited to highlight upskilling opportunities available for their non-PMET counterparts. The professionals are also invited as "human libraries" to share their stories and experiences of climbing the career ladder through continuous training. These stories may

inspire non-PMETs within similar industries to engage in upskilling to improve their career progression.

MENDAKI as a partner in education and employment

By hosting these engagement sessions and through its interactions with both PMETs and non-PMETs, Yayasan MENDAKI possesses a wealth of firsthand knowledge on trends and issues faced by employees, thus positioning Yayasan MENDAKI as one of many key partners in Singapore's employment and continuing education and training landscape.

Stationed at Yayasan MENDAKI's Youth Spaces in ITE Colleges and Satellite Centres across the island, our Care Advisors (CA) also play a pivotal role in the provision of career advisory to youth and jobseekers. For example, our CAs engage ITE students and advise them on their career planning by advising them on relevant courses and modules in school they could take to strengthen their career portfolio. CAs will also advocate for ITE students in Year 2 to consider pursuing the Work Study Diploma (WSDip) programme offered by the ITE Colleges in collaboration with industry partners. The WSDip programme would give ITE students a valuable opportunity to jumpstart their careers in growth industries while working towards a nationally recognised diploma as they acquire invaluable hands-on experience through on-the-job training with industry experts.

Adults seeking for jobs or exploring career switches may also approach Yayasan MENDAKI's CAs at the Satellite Centres. Through engagements with jobseekers and mid-career switchers, our CAs help them to formulate a career action plan, explore job opportunities in the growth sectors and link them to appropriate resources such as upskilling courses offered by Employment and Employability Institute (e2i) and NTUC Learning Hub. Beyond these interactions, Yayasan MENDAKI's CAs also regularly participate in career fairs organised by e2i and Workforce Singapore to reach out to more Malay/Muslim workers and render relevant career advisory and support.

Indeed, through these multiple touchpoints with youth and jobseekers, Yayasan MENDAKI, as a partner in Singapore's education and employment landscape, is able to relay information on emerging trends and concerns to JSIT intermediaries, or other relevant agencies and training providers, to inform Singapore's training and placement ecosystem.

Finally, while it is important to encourage upskilling and reskilling among non-PMETs, Yayasan MENDAKI is also cognisant of the need to cultivate the objective of lifelong learning from a young age. As aptly mentioned by the author, lifelong learning is a means to forge social inclusion and solidarity, as through continuing education and training, the Malay/Muslim community has the opportunity for upward social mobility through better education and career prospects. Thus, Yayasan MENDAKI has been actively engaging youth in mentoring and activities that expands youth worldview and social capital. For example, through the #amPowered mentoring programme, youth are engaged by volunteer mentors to achieve good academic achievements and to be aware of multiple education and career pathways so they can achieve their goals and aspirations. Through interactions with their mentors, the youth may also leverage on their mentors' networks and connections for their future career aspirations. By engaging these youth while they are still in school, it is hoped that they would benefit from a head start for the future career planning and progression.

Concluding remarks

The article by Muhammad Farouq Osman discussed insightful recommendations to encourage higher training participation among non-PMETs. As the Malay community continue to progress, these recommendations are useful to inform not only government and national agencies, but also community partners such as Yayasan MENDAKI, particularly in areas where Yayasan MENDAKI can value-add and collaborate with its national partners to inform Singapore's training and placement ecosystem.

Yayasan MENDAKI is committed to nurture and support the education and employment aspirations of the Malay/Muslim community through its various programmes such as #amPowered mentoring programme, the Professional Networks and the Women@Work programme. Through a life-course approach; from empowering parents as their child's first teacher, nurturer and partner, to preparing students and youth to be resilient and future-ready, and to empowering the Malay/Muslim workforce to be enterprising, connected, adaptable and lifelong learners, it is hoped that Yayasan MENDAKI can journey with the community towards realising the vision of a Community of Success.

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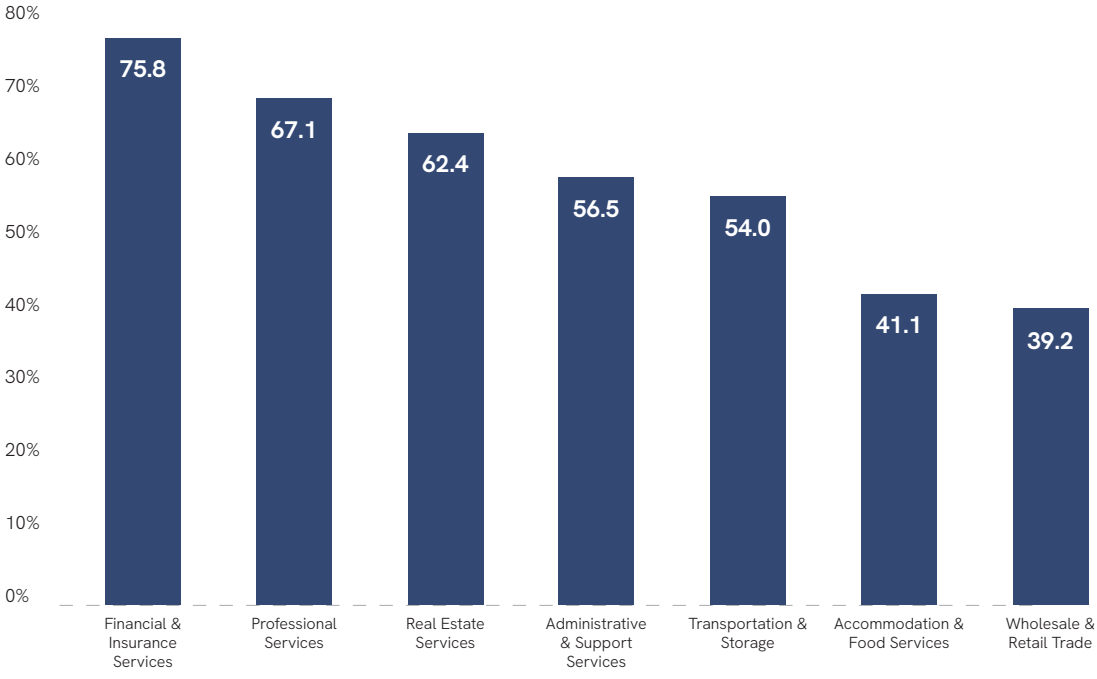
Did You Know?

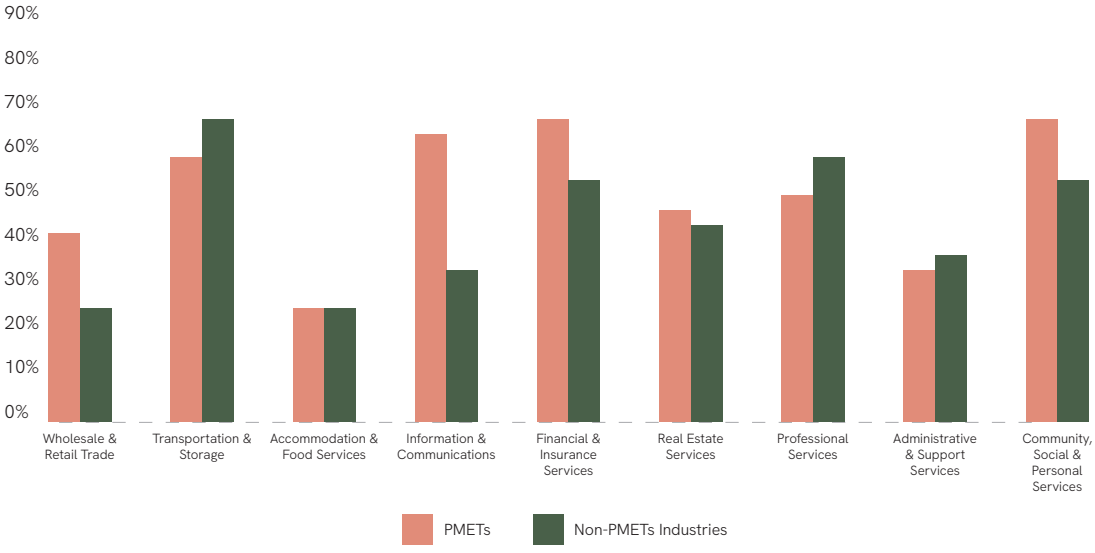
Proportion of Private Establishments That Provided Structured Training By Industry in 2021



Comparing private industries, "white collar" industries provide more structured training than "blue collar" industries.

Source: Training And Higher Education 2021. (n.d.). Ministry of Manpower. https://stats.mom.gov.sg/Pages/Training-and-Higher-Education-Tables2021.aspx

Proportion of Private Sector Employees Provided with Structured Training in Training-Providing Establishments



In 2021, non-PMETs in the private sector received less structured training from their employers compared to PMETs.

Source: Training And Higher Education 2021. (n.d.). Ministry of Manpower. https://stats.mom.gov.sg/Pages/Training-and-Higher-Education-Tables2021.aspx

Section 2
General Scan of Key National Policies and Initiatives in Singapore

Budget 2023, Committee of Supply 2023 and National Day Rally 2023

Early Childhood and Parents

Nurturing Early Learners (NEL) framework

(NEL) Framework Key Messages

- **To give every child a good start, preschool education nurtures the joy of learning and children's holistic development.**
- **Character-building and lifelong learning starts at preschool.**
- **Teachers play an important role together with parents to support children's learning and development.**

Key stage outcomes of preschool education

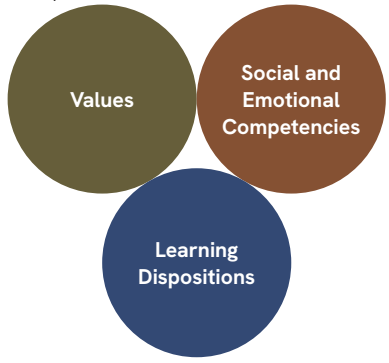
At the end of preschool education, children should:

√ Know what is right and what is wrong
√ Be able to share and play with others
√ Be able to show care and respect for others
√ Be curious and able to explore
√ Be able to communicate their thoughts and feelings
√ Be comfortable and happy with themselves
√ Have developed physical co-ordination, healthy habits, and enjoy a variety of arts experiences
√ Love their families, friends, teachers and people in their community

Supporting your children's learning and development

Parents play an important role in supporting your child's development in their preschool years and helping them to transit well into primary school. You can:

√ Pay equal attention to your child's cognitive and non-cognitive development
√ Collaborate with your children preschool and primary school teachers to develop your child's positive attitude towards learning
√ Encourage your child to explore and ask questions to enrich their learning experiences beyond school



The framework update emphasizes on values, social and emotional competencies, and learning dispositions

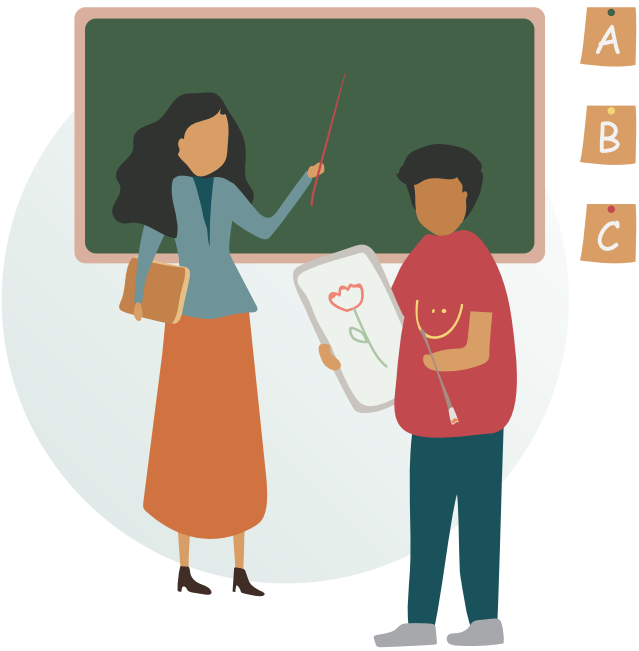
10 MOE kindergartens to be launched by 2027

More preschool choices available for parents

MOE kindergartens promote

- Purposeful play and quality interactions
- Distinctive Singapore flavour
- Early bilingualism

Raising the quality of teaching in the early childhood education sector



4%–15%

salary increase recommended for social service sector

Increased social service agency volunteer management capabilities to help deliver quality services

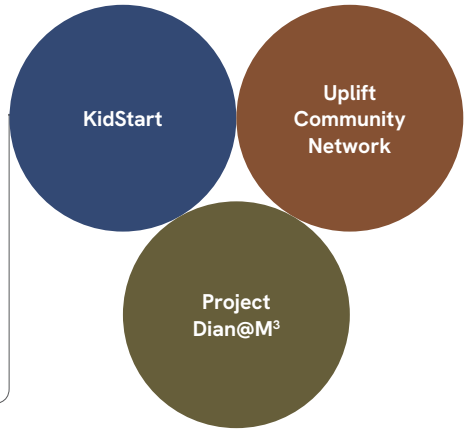
Enhancing support for children from low-income families

ComLink to integrate common functions to provide better coordinated support. This includes programmes such as KidStart, the UPLIFT Community Network and Project Dian@M³

KidStart to support

80% of eligible children

in lower-income families, starting from the children born in 2023.



Priority enrolment for children from lower-income families at anchor operator pre-schools

Children from families with a gross monthly household income of

≤ $3,000

are given priority for enrolment in childcare programmes.

Families with an income of

$3,001 – $6,000

are also given priority in pre-school enrolment.

1,400 more early intervention places for children with developmental needs

More subsidies for children with developmental needs

Education & Youth

Learn for life: Forging our collective future

Full Subject-Based Banding (SBB) to be implemented from 2024 Sec 1 cohort

Two new SPED teaching and learning syllabuses:

Nationwide roll-out of UPLIFT Community Network (UCN)

- The UCN helps to link students and their families to community resources and programmes that will help the student to get back to regular school attendance and support the parents in meeting childcare needs.
- The UCN aims to benefit around 1,300 students in 110 schools, up from 900 students in 89 schools last year.

UCN aims to benefit

1300 students in 110 schools

Increased access to polytechnic through the Polytechnic Foundation Programme (PFP)

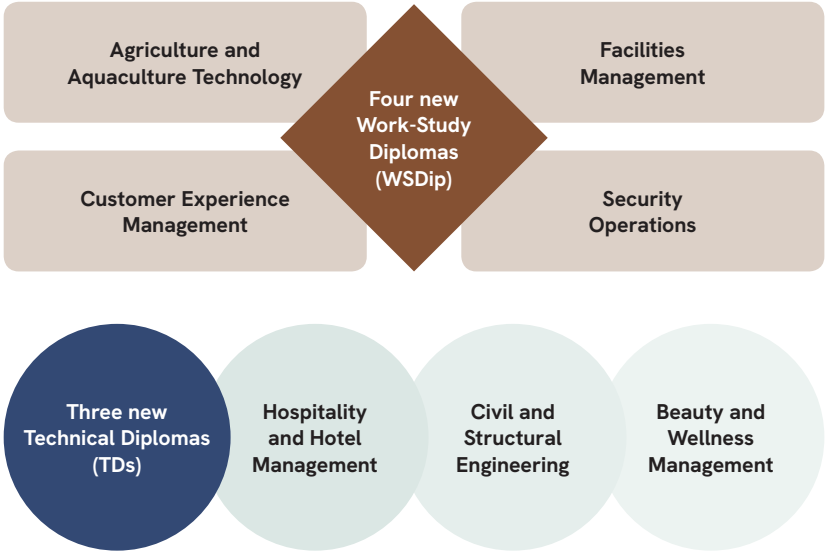
- PFP will no longer be limited to Normal (Academic) students.
- Students are able to choose a cluster of interests instead of a specific diploma from 2026.

Transition of ITE's 3-year higher NITEC structure to be completed by the 2026 ITE intake

- More students are now eligible for 3-year Higher NITEC programmes due to the revision in entry requirements.

Learn for life: Forging our collective future

ITE's Work-Study Diplomas (WSDip), Technical Diplomas (TDs) and technical engineer diplomas expanded



More subsidised places for adults to do Pre-Employment Training (PET) and Continuing Education and Training (CET)

Workplace Skills Recognition Programme (WPSR) piloted in food services and retail industries in Q2 2023

Pilot of Jobs-Skills Integrator (JSIT) in precision engineering, retail and wholesale trade

Raising the training commitment award for full qualifications from $500 to $800

Training Commitment Award for Full Qualifications increased to

$800

Empowering youth to play a bigger role in shaping Singapore's future

Singapore Leadership Programme (SLP) expanded to secondary 4 students from all secondary schools and madrasahs.

A new leadership programme for student from Institutes of Higher Learning (IHL) will be developed and launched in mid-2023.

Mentoring alliance for action

- Expansion of mentoring opportunities for youth through community partnerships.
- Youth connect to mentoring programmes and mentors on WeConnect.

Youth corps community internship

- Provision of IHL students with internship in community and social sectors, with priority given to ITE and polytechnic students.

Workforce

Seizing opportunities with you

- Launch of new CareersFinder feature to provide personalised jobs and skills insights to improve job matching for Singaporeans
- Launch of Citizens' panel on employment resilience with Institute of Policy Studies to engage Singaporeans on their career aspirations and empower them to take charge of their career health
- Lowering the age of the Workfare Skills Support scheme from 35 to 30

Securing better workplaces with you

- Stronger protections in law for common and familiar forms of workplace discrimination

To introduce Tripartite Guidelines on Flexible Work Arrangements by 2024

- To introduce the Uplifting Employment Credit, a new hiring incentive to support employers in hiring ex-offenders

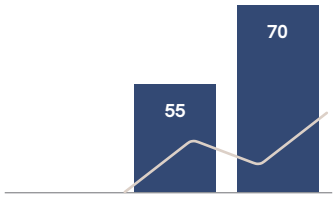
Retirement

Strengthening retirement adequacy and senior employability

Increase in CPF Contribution Rates for senior workers aged

55 to 70

from 1 Jan 2024



Extension of Part-Time Re-employment Grant from

2023 to 2025

to provide more flexible work options to attract and retain senior workers as well as support their career longevity

Retirement support for young seniors

$7 billion Majulah Package will help meet retirement needs of those born in 1973 or earlier

$7 billion Majulah Package

The package includes:

Earn and Save Bonus: Bonus of up to $1,000 in CPF per year, for lower and middle-income workers	**Retirement Savings Bonus:** Up to $1,500 bonus in CPF for older Singaporeans who have not reached the Basic Retirement Sum	**Medisave Bonus:** One-time bonus of up to $1,000 to help with healthcare expenses and insurance premiums

Active Ageing

Enhancing healthcare for seniors

This national initiative by the Ministry of Health (MOH) focusing on preventive health for Singaporeans to take proactive steps in managing their health, prevent the onset of chronic diseases and promotes healthy lifestyle.

Healthier SG offers the following:

Healthier SG offers

- Personalised health plan and trusted care from family doctors
- Develop an integrated health and social ecosystem to support better health
- Empowerment of Singaporeans to take charge of their own health through resources and digital tools like HealthHub and Healthy 365.

Making homes and precincts more senior-friendly

Expand network of Active Ageing Centres

Implementation of the Enhancement for Active Seniors (EASE) programme that makes old Housing & Development Board (HDB) flats more livable and safer through the installation of fittings like ramps, grab bars, slip-resistant flooring, etc.

Revamping identified streets and linkways to make them more senior-friendly.

Building more assisted-living facilities.

Housing

New Standard, Plus and Prime HDB framework

Housing Type	Location	Subsidies/Conditions
Standard flats	Majority of flats	Standard subsidies and sale conditions
Plus flats	• Choice locations • More sought-after HDB projects (ie: near MRT station, town centre)	• Subsidy recovery upon resale • Minimum Occupation Period of 10 years • No whole flat rental • Income ceiling of $14k for resale buyers
Prime flats	Located at the most sought-after locations in Singapore	Receive the most subsidies and have the tightest restrictions

Increase in maximum amount of CPF Housing Grant for First-Timers buying resale flats

Revised grant for eligible first-timer families

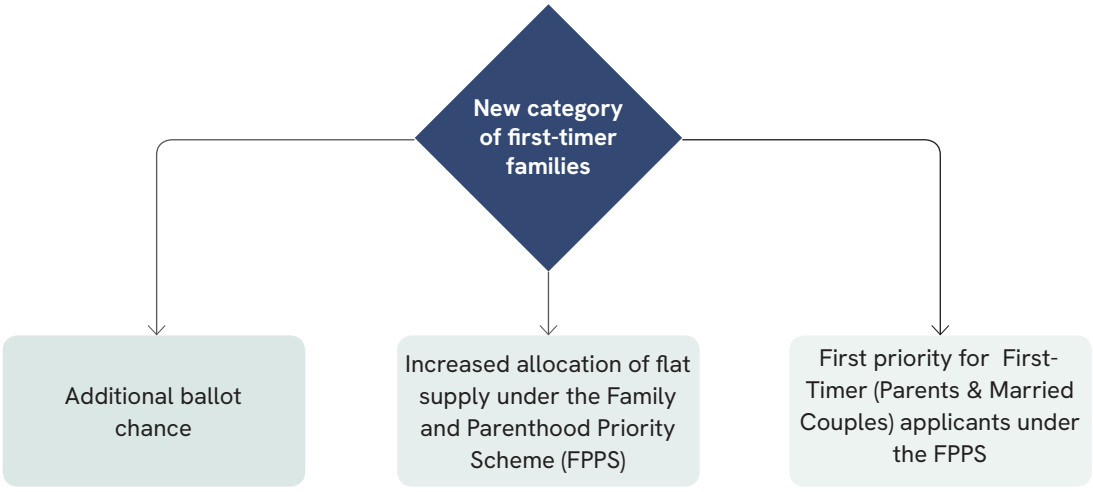
Grant	Flat Type	Revised
CPF Housing Grant	2- to 4-room flat	$80,000
	5-room or larger flat	$50,000
Enhanced CPF Housing Grant (EHG)		Up to $80,000
Proximity Housing Grant (PHG)		Up to $30,000

Revised grant for eligible first-timer singles (first-timer singles buying a 2- to 5-room resale flat are eligible for the grant.)

Grant	Flat Type	Revised
CPF Housing Grant	2- to 4-room flat	$40,000
	5-room or larger flat	$25,000
Enhanced CPF Housing Grant (EHG)		Up to $40,000
Proximity Housing Grant (PHG)		Up to $15,000

Keeping public housing accessible for singaporeans

Greater priority for new category of first-timer families



Tighter rules for non-selection of flat

First-timer families, including those under the FT(PMC) category, who accumulate 1 non-selection count (lowered from the current 2 counts) will be considered second-timer families for 1 year in the computer ballot

To ensure that flat applicants with more urgent needs can secure their flats more quickly, the rules for non-selection of flats will be tightened:

Second-timer families who accumulate 1 non-selection count (lowered from the current 2 counts) will have to wait 1 year before they can apply for a flat again

More housing options for lower-income singles in public rental housing

The 3 additional sites, which are located in Bukit Panjang, Bidadari, and Sengkang, can accommodate about 600 tenants in total.

Expanding housing-plus-care options for seniors

- Following the positive response to the first 2 Community Care Apartments (CCA) pilots, Harmony Village @ Bukit Batok (launched in February 2021) and Queensway Canopy (launched in November 2022), a third CCA project in Bedok will be launched.
- The development will comprise about 200 CCA units, alongside other flat types, as well as social and communal facilities. Residents of the CCA will enjoy convenient access to various amenities nearby, including Active Ageing Centres, community centres, markets, and hawker centres.

Enhancing the vibrancy of HDB heartlands

Revitalising neighbourhoods and supporting heartland shops

- **Enhanced Entrepreneur Scheme:** More support will be provided to budding entrepreneurs, where eligible start-ups will benefit from a 10% rental discount for their first 3-year tenancy. They will also be allocated HDB shop spaces beyond new generation neighbourhood centres (NCs), enabling them to operate from HDB shop spaces located in existing NCs and precinct clusters as well.
- **Enhanced Revitalisation of Shops (ROS) Scheme:** further enhance the ROS scheme to support retailers in upgrading their shopping environment, by reducing their co-payment portion from 20% to 5%. HDB will correspondingly increase its co-funding share to 85%, up from 70%, while the Town Council will continue to co-fund 10% of the upgrading costs. The total budget for upgrading works will remain unchanged at $35,000 per shop.

Building inclusiveness in the heartlands

Eligible social enterprises and businesses with inclusive hiring practices can apply to be allocated a shop space and benefit from rental discounts. To provide more support for these enterprises, HDB will increase the rental discount from 20% to 30% for the first 3-year tenancy, and upon renewal, extend the rental discount for a subsequent 3-year tenancy. HDB will also make available up to 30 shop spaces for direct allocation each year, double the 15 units that are allocated currently.

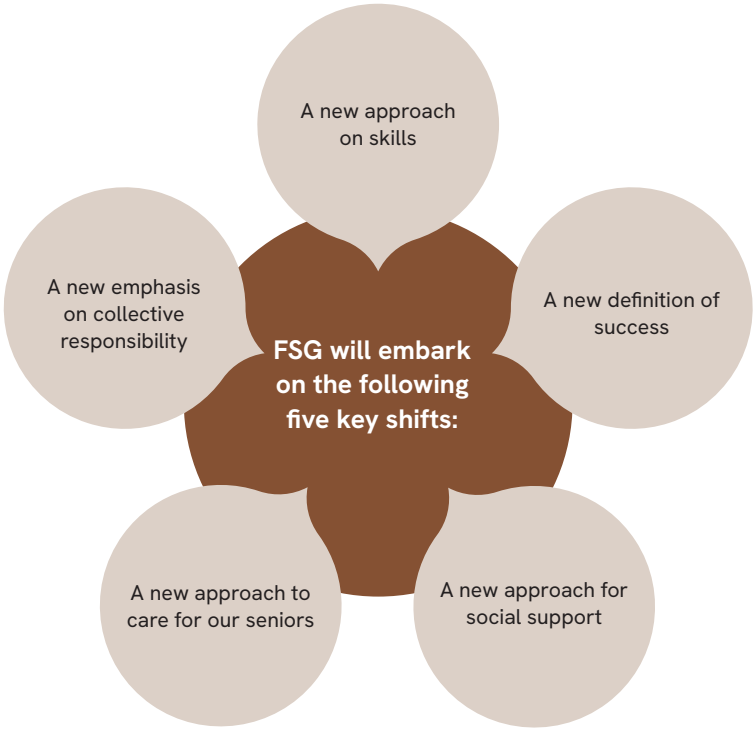
Providing more affordable meal options

HDB will be extending the budget meals requirement to all rental coffeeshops due for renewal. They will need to provide 4 budget meals and 2 budget drinks, as a condition for renewal of their tenancy. By 2026, all 374 coffeeshops will offer budget meal options for residents, up from the current 72, to ease the transition for coffeeshop operators and stall holders, HDB will be offering a rental discount of 5% off the renewal rents for a period of 1 year, from the time that the new budget meals/ drinks requirement is in place.

Economic Outlook

Forward SG

Through the various dialogues and conversations, FSG will embark on the following five key shifts:



There are still many opportunities available in growth sector such as the digital economy where there are demands for new skills and knowledge.

Government will be providing temporary financial support for retrenched workers to support them as they upskill to enter the workforce. More details will be announced in 2024.

Yayasan MENDAKI