APPLIED STUDY IN POLYTECHNICS AND ITE REVIEW (ASPIRE)

Report

August 2014
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August 2014
22 August 2014

Mr Heng Swee Keat
Minister for Education

Dear Minister,

In November 2013, Prime Minister Lee Hsien Loong announced that an Applied Study in Polytechnics and ITE Review (ASPIRE) Committee would be set up to examine how to strengthen the applied education pathway in our polytechnics and ITE, and to propose feasible strategies to achieve this. This was to ensure that our polytechnic and ITE graduates have good career and academic progression prospects.

2. The ASPIRE Committee began its work in January this year. In drawing up our recommendations, the committee was mindful of the good work already being done by our polytechnics and ITE, in developing and training students who possess job-relevant skills and expertise. Our approach was to build upon the foundation already in place to bring polytechnic and ITE education to a new level. In so doing, we were guided by the conviction that knowledge coupled with deep skills are the key to success in the years ahead.

3. We also believe that opportunities for academic and career progression should be accessible to all, regardless of their starting point, and must be accompanied by the provision of adequate support to cater to diverse backgrounds and abilities. A further guiding principle was that there should be a strong alignment between education in our polytechnics and ITE and what industry and businesses need, and that industry and employers must be a part of this process.
4. The recommendations in this report have incorporated the views of a wide range of stakeholders, gathered through our engagement sessions and industry visits, and have also been informed by our insights from overseas study trips.

5. Our recommendations focus on four key areas:

- First, we must enable our young Singaporeans to make well-informed choices about their education and career pathways. This is critical for every Singaporean to maximise his or her potential, based on his or her strengths, interests and opportunities. To do so, we must strengthen our education and career guidance significantly.

- Second, we must equip our young Singaporeans with a good skills foundation so that they are equipped to face changes and to seize the opportunities that come with them. We will need to build upon the successful education and training system in our polytechnics and ITE, particularly by working more closely with industry in the development of applied programmes.

- Third, we must enable individuals to better acquire the right skills that help them do well in their careers. To do this, various learning options can be introduced to help polytechnic and ITE students deepen their skills after graduation.

- Fourth, we must develop multiple pathways for capable individuals to progress based on their skills, contributions, and experience. To achieve this, we recommend developing skills frameworks, and offering more modular Continuing Education and Training (CET) opportunities.
6. We believe that our recommendations will further strengthen Singapore’s applied education landscape, provide more opportunities for Singaporeans to realise their full potential and to progress, as well as better align the supply of and demand for skills so that Singapore will continue to prosper and be a land of hope and opportunity for everyone in the years ahead.

7. We are honoured to have had the opportunity to be part of this endeavour and submit herewith the Committee’s report to the Government for its consideration.

Yours sincerely,

INDRANEE RAJAH (MS)
CHAIRMAN, STEERING COMMITTEE
APPLIED STUDY IN POLYTECHNICS AND ITE REVIEW

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Singapore Economic Development Board
25 August 2014

Ms Indranee Rajah
Senior Minister of State (Education and Law)
Chairman, Applied Study in Polytechnics and ITE Review Committee

Dear Indranee,

On behalf of the Government, I thank you for the ASPIRE Committee’s report, which sets out its recommendations. I am pleased to accept the Committee’s recommendations in full.

2. I would like to thank you and your committee for the time and energy that all of you have put into this review, and for the thoughtful set of recommendations that have resulted from the many months of meetings, industry visits, study trips, and engagement sessions.

3. These recommendations are timely. Rapid technological advancement and new business models will drive increasing demand for high-level skills in the years ahead, and we must ensure that Singaporeans are well equipped not just to cope with these changes but to thrive and ride on the opportunities that present themselves.

4. This is why the ASPIRE recommendations are important. They build on the strengths of our applied education pathways in the polytechnics and ITE to give young Singaporeans the strong skills foundation they need to start their careers and progress. We must empower them to make well-informed education and career choices, to deepen their skills and expertise even after graduation, and help them progress in their careers.
5. Many parties will need to work together to implement these recommendations successfully. The Government will expand the role of the Singapore Workforce Development Agency to coordinate various industry engagement efforts, which will be crucial to the implementation of the key ASPIRE recommendations. The Government will also set up a tripartite committee headed by Deputy Prime Minister Tharman Shanmugaratnam to look into the integration of education, training and career pathways, so as to enable our people to achieve their potential.

6. These changes will take time, but are necessary. The government is fully committed to working with all stakeholders to implement them, so that we maintain the high quality of applied education offered by our polytechnics and ITE, and in so doing ensure that Singaporeans and Singapore continue to have a bright future in the years to come. The critical shifts that we envision will shape not just our economy but our society as well, and will position Singapore well for many years ahead even as we celebrate our first 50 years as a nation.

Yours sincerely,

HENG SWEE KEAT
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Annex A: Composition of the ASPIRE Committee

Annex B: Summary of Feedback from Engagement Sessions
The ASPIRE Journey

1. At the official opening ceremony of the Institute of Technical Education (ITE) Headquarters and ITE College Central in November 2013, Prime Minister Lee Hsien Loong highlighted the need to strengthen the applied education pathways in the polytechnics and ITE to ensure that their graduates have good career and academic progression prospects.

2. The Applied Study in Polytechnics and ITE Review (ASPIRE) Committee, chaired by Senior Minister of State for Law and Education, Ms Indranee Rajah, began its work in January 2014. The Committee was tasked to study how applied education in the polytechnics and ITE could be enhanced by:

   - Better matching students’ strengths and interests to applied education pathways to enable them to maximise their potential;

   - Exploring deeper school-industry collaborations so that polytechnic and ITE students can learn deep skills and enjoy better career progression; and

   - Enhancing industry partnerships to raise the quality of teaching and learning for polytechnic and ITE students.

3. The overall objective of the review was to secure better outcomes and opportunities for our polytechnic and ITE graduates.
4. The ASPIRE Committee comprises:

- A Steering Committee which provided overall direction and guidance;
- Three Review Committees which studied various aspects in depth; and
- An Engagement Committee which reached out to all the stakeholders.

A diverse group of stakeholders including industry players, education leaders and government officials with a range of expertise and educational backgrounds was invited to participate in the review. The composition of the ASPIRE Committee is in Annex A.

5. From the start, the Committee recognised that education was very important to Singaporeans, who see it as key to unlocking the opportunities in life and securing a good future. We canvassed views widely, reaching out to about 20,000 stakeholders, including about 12,000 polytechnic students, 5,000 ITE students, 3,000 parents and alumni, and close to 400 polytechnic and ITE staff, through dialogue sessions, focus group discussions, a Townhall and surveys. The main themes that emerged can be found in Annex B.

6. In addition, the Committee visited Germany, Switzerland, Australia and New Zealand to study their applied education models.

7. The engagement feedback and study trip findings helped shape the Committee’s thinking and final recommendations.
Acknowledgements

We would like to thank the following parties who have helped shape our recommendations with their thoughts, insights, feedback, and active support:

- Students, parents, alumni, educators and employers who actively participated in the dialogue sessions, focus group discussions and Townhall, and inspired us with their commitment to education and training.

- Members of the public, who gave us valuable comments, feedback and food for thought through the various online and offline platforms, affirming how important education is to all Singaporeans.

- Community and Parents in Support of Schools (COMPASS), Reaching Everyone for Active Citizenry at Home (REACH), and the Association for Small and Medium Enterprises (ASME) who helped organised panel sessions with various stakeholders.

- Employers who took the time to host us at their workplaces and shared with us their best practices and the challenges they face today in skills development.

- The National Trades Union Congress (NTUC) and the Singapore National Employers Federation (SNEF), who gave us their invaluable input from both the employees’ and employers’ perspectives.


- Our hosts at the various ministries, education institutions and private sector organisations that we visited during our study trips to Germany, Switzerland, Australia and New Zealand, for helping us identify the key elements and success factors of their respective education systems, and for generously sharing with us how they do things and the fruits and challenges of their efforts.

- Students from the polytechnics and ITE who worked on the ASPIRE logo design and helped us reach out to their peers to publicise ASPIRE through publicity, marketing and media projects.

This report would not have been possible without your valuable contributions.
Executive Summary

Our polytechnic and ITE system has been successful in enabling students to develop themselves and fulfil their potential. Its main strength is the emphasis on applied learning and its relevance to work and the careers pursued by its students. However, to meet the demands of the future and the aspirations of our students, the system must continue to evolve in an innovative and dynamic fashion.

All Singaporeans should have opportunities to realise their potential and progress in life, no matter what their starting point. Such opportunities can only come about with a strong economy. The recommendations focus on equipping our polytechnic and ITE graduates for the future so that they can seize opportunities and realise their aspirations.

We must support young Singaporeans to acquire the skills that they need to do well in their careers. In order to do so, we must create a strong skills system and industry linkages that support the alignment of the skills individuals have with what the job market needs. The education system must also evolve to keep pace with global developments.

We must create good skills-based progression pathways, help students and working adults make well-informed education and career choices, support learning on the job, and promote Continuing Education and Training (CET). We should build on our strong polytechnic and ITE system and our unique tripartite system to achieve these outcomes.

We need the right mind-sets so that everyone and every job is valued, employers take ownership of skills development, and lifelong learning is embraced.
These changes will require time and a concerted national effort, with many stakeholders involved.

**Recommendations**

**Helping students make well-informed education and career choices**

We must empower our youths to make well-informed decisions for their future. Our students should have accurate and up-to-date information to enable them to make good choices about their education and careers. Working adults should be similarly empowered and equipped. Thus, we recommend the following:

- **Recommendation 1**: Strengthen education and career guidance (ECG) efforts in schools, polytechnics and ITE.

**Strengthening education and training in polytechnics and ITE**

Our polytechnics and ITE must continue to provide a strong applied education, and equip their graduates with a strong skills foundation to join the workforce. We must also provide adequate support to help every student succeed in their studies. We therefore recommend the following:

- **Recommendation 2**: Enhance internships at the polytechnics and ITE.

- **Recommendation 3**: Increase Nitec to Higher Nitec progression opportunities so ITE students can deepen their skills.
• Recommendation 4: Establish polytechnic and ITE leads for each key industry sector to strengthen linkages with industry and help enhance programme offerings.

• Recommendation 5: Expand online learning opportunities to make it easier for individuals to learn anywhere and anytime.

• Recommendation 6: Provide more development and support programmes for polytechnic and ITE students to help every enrolled student succeed.

Helping polytechnic and ITE students deepen skills post-graduation

We need to provide more avenues for our polytechnic and ITE graduates to deepen existing skills or acquire new skills. We also need to better bridge the transition from school to work and enable our youths to apply the skills they have acquired, and build upon them further in their jobs. Hence, we recommend the following:

• Recommendation 7: Launch new programmes that integrate work and study, such as place-and-train programmes, to provide an additional skills-upgrading option for polytechnic and ITE graduates.

• Recommendation 8: Increase post-diploma Continuing Education and Training (CET) opportunities at our polytechnics to refresh and deepen the skills of polytechnic graduates.

• Recommendation 9: Support vocation-based deployments during National Service (NS) to help polytechnic and ITE graduates maintain their skills.
Helping polytechnic and ITE graduates progress in their careers

The changes to our applied education system will need to be well-supported by clearly articulated pathways of progression. These progression pathways and skills frameworks can also serve as benchmarks for hiring and progression practices within the industry. Thus, we recommend the following:

- **Recommendation 10**: Develop sector-specific skills frameworks and career progression pathways in collaboration with industry to support progression based on industry-relevant skills.

**Conclusion**

The ASPIRE Committee believes that these recommendations will help create more opportunities for our polytechnic and ITE students to progress and to achieve their aspirations. At the same time, they will help businesses with their manpower needs, and grow and develop talent pipelines. In so doing, we hope to secure a brighter future for each individual, and for our nation.
Chapter 1: Introduction

The Impetus for the Review

1.1 Our polytechnic and ITE system has been successful in enabling students to develop themselves and realise their potential. Its main strength is the emphasis on applied learning and its relevance to work and the careers pursued by its students. Our polytechnic and ITE graduates are in high demand, with nearly nine in ten finding employment within six months of graduation.

1.2 The success of our polytechnic and ITE education system has encouraged many young Singaporeans to strive for greater heights. Many of them hope to further their education, either immediately or at a later point in their careers, to improve their prospects for advancement – polytechnic and ITE students and alumni whom the ASPIRE Committee engaged shared their hopes of doing so to improve their career prospects. Our youth are ambitious, and are eager to learn and to do more with the skills they acquire.

1.3 These aspirations must, however, be seen against the demands of the future, which will feature the following:

- The demand for deep and relevant skills will rise;
- The nature of jobs will continue to evolve;
- Technology will continue to drive disruptions; and
- There will be growing recognition that education and learning does not end with graduation from an education institution, but continues throughout life.
1.4 The question therefore, is how our system can innovate to meet these aspirations and achieve the outcomes we want for our young people given today’s evolving environment, and the volatile, uncertain, complex, and ambiguous future that is to come.

1.5 It was with this in mind that the Committee embarked on its work. This report sets out key strategies and recommendations to secure a better future for our young people. In arriving at these recommendations, the Committee took into account the considerations below.

**Opportunities for All**

1.6 A fundamental tenet underlying the Committee’s approach was that all Singaporeans should have opportunities to realise their full potential, and progress in life, no matter what their starting point. This has been the core essence of our Singapore story, and must continue to be so. This report is thus about finding ways to provide more opportunities for polytechnic and ITE students and graduates to progress and realise their aspirations.

1.7 At the same time, the Committee recognised that such opportunities are closely tied to Singapore having a strong economy. Only if there is economic growth can there be good jobs and abundant prospects for young Singaporeans, and it is only if young Singaporeans have the right skills that they can meaningfully seize current and future opportunities. We therefore also need to ensure a good alignment between industry needs, economic opportunities, and the skills of our workforce in order for Singaporeans to progress and prosper.
Creating a Strong Skills System

1.8 We must help our young Singaporeans acquire the right skills that count towards their careers. These include both technical skills and soft skills, such as communications, teamwork and leadership skills.

1.9 Our young Singaporeans must also possess a strong work ethic – initiative, a strong resilient spirit, a willingness to innovate, and an attitude of “can do, can change, and will learn”. This is not only key to their adaptability to change, but is also reflective of the strong character and values we would like our Singapore society to embody.

1.10 To achieve this, we must create a strong skills system that supports the alignment of skills with what the job market needs. Industry has to work closely with our polytechnics and ITE to keep our applied education curriculum and approach relevant. We will also need to introduce new learning options that can help individuals better acquire the skills they need. These different options should cater to the diverse learning preferences and circumstances of individual students.

Creating Good Progression Pathways

1.11 We must also create good skills-based progression pathways. Most students and parents whom we engaged felt that success or advancement can only be achieved with a degree. Whilst the degree pathway is one possible route to success, there must be other ways to advance. We must create multiple pathways for individuals to progress according to their skills, contributions and experience, and a variety of ways to attain deeper skills and knowledge.
1.12 We must also value every individual, and help them to develop to the best of their ability. Individuals should be recognised for their hard work and contributions. Every job matters, and deserves respect.

1.13 This will require progressive human resource practices by employers, as well as industry-developed frameworks against which upgrading and advancement can be referenced. If done well, this will support employees’ growth and development. At the same time, this will benefit employers as it will facilitate recruitment and retention, and ensure a pipeline of skilled talent for the future. This in turn will benefit the country as a whole.

Building on Our Strengths

1.14 To achieve these outcomes, the Committee’s starting point was that we should build on our strengths. The success of our polytechnic and ITE system thus far has been the result of a strong industry-focused and practice-oriented curriculum that blends theory with application. This has provided our students with a strong skills foundation.

1.15 This blend of content and application (or applied learning), adopted since the early days of Singapore’s development, has served us well. Our view was reinforced by what we saw of the Swiss, Dutch and German education systems. These adopt a strong applied learning approach and have highly skilled labour and low youth unemployment.

1.16 The value of applied learning lies in its relevance to the real world, which benefits students, employers, and employees. A
successful applied education system requires close collaboration between education and industry, particularly in developing valuable work and life skills in students and meeting employer needs. This nexus will also serve to alert us to imminent industry changes, and enable our education system to adapt and respond in a timely manner. This will be critical in the future, as the world and our economy, continues to evolve rapidly, driven by technological progress and innovation.

1.17 Given the importance of a close nexus between industry and applied education, Singapore’s tripartite system is a key strength that we should leverage.

**Making Well-Informed Choices**

1.18 The Committee also recognised that navigating the plethora of education options and the increasingly diverse career landscape can be difficult for students and even working adults, and they may lack the relevant information to choose the right career paths.

1.19 We must help them make well-informed choices – based on their strengths, interests and opportunities – so that they can choose the pathways that will help them realise their aspirations.
Learning on the Job

1.20 The way in which skills can be acquired will need to be reconsidered. Some skills are better acquired through work experience or actual industry projects, rather than in the classroom. We have seen this work well in other countries, where on-the-job learning in the workplace has produced highly-skilled workers with great expertise and best-in-class craftsmanship. Learning through work can also help in the development of soft skills.

Continuing Education and Training (CET)

1.21 It is no longer the case that individuals can expect to learn all they need in school. Learning and education must continue even after they have started work.

1.22 Continuing Education and Training (CET), whether in the form of formal education or through on-the-job training, will become increasingly important, both for upgrading and advancement, as well as to cope with disruptive changes.

Having the Right Mind-sets

1.23 Achieving these objectives will require the right mind-sets:

- First, we should value every individual and every job. Every Singaporean matters, and every job is worthy of our respect. Recognition and progression should not be based on qualifications alone, but should also take into account skills, contributions and experience.
• Second, employers need to see themselves as an integral part of the education and training system. They need to take strong ownership of helping to develop skilled individuals. In addition, employers will need to work with other key stakeholders to promote the effective utilisation of skills, and to provide greater clarity to individuals on the skills they need to progress.

• Third, we should view education and learning as a continuing endeavour. Learning should not stop after graduation. Our economy requires a wide range of skills that will need to evolve to keep pace with global developments. Individuals must stay current and deepen their skills so that they can continue to progress and can achieve their aspirations and lead fulfilling lives.

A Concerted Effort is Needed

1.24 The changes contemplated in this report, if accepted, will take time and effort to implement. It will require a concerted effort on the part of Government, industry players, educational institutions, workers, unions, students, parents and educators, working together to achieve better outcomes for all.
Chapter 2: Helping Students Make Well-Informed Education and Career Choices

2.1 Our ASPIRE survey showed that students rely mostly on parents and the media when they make key decisions about their education and careers, and they want better access to information and good guidance. Almost 8 in 10 polytechnic and ITE students thought that a one-stop education and career guidance portal or centre, would be useful.

2.2 We must enable everyone to make well-informed education and career choices based on their strengths, interests, aspirations, and the opportunities available in the changing economy. This way, students can maximise their potential, learn well, and develop the skills needed to access these new opportunities.

Recommendation 1: Strengthen Education and Career Guidance (ECG) in Schools, Polytechnics and ITE

2.3 Today, the various avenues that students turn to for career guidance often do not give them a complete picture about the job market, or the education and career pathways available.

2.4 Education and career decisions are not trivial. When our youths make these decisions, we want them to do so based on a good understanding of themselves and the opportunities available for them. This should also be the case when they become working adults seeking further career opportunities or changes. To empower individuals to make well-informed education and career choices, they must have access to tools or trained ECG officers to help them assess their strengths and
interests, as well as accurate and up-to-date labour market information.

2.5 Currently, ECG tends to be segmented within each stage of an individual’s education and working life, and is designed and delivered by different agencies.

2.6 The ASPIRE Committee recommends strengthening and coordinating ECG efforts as part of an integrated national ECG framework spanning the schools, the polytechnics and ITE, and the network of career centres run by WDA, so that ECG is seamless across an individual’s entire life and takes into account his or her strengths, interests, skills, and the available education and career options.

2.7 We envision this brand of “end-to-end” ECG starting in school and continuing throughout the student’s post-secondary education. This way, individuals can discover their strengths and interests early and subsequently develop the expertise to pursue the opportunities they have identified. The ECG should continue beyond graduation, so that individuals will have access to personalised advice regarding skills deepening as working adults or even “re-skilling” as new options become available.

2.8 Thus, the ASPIRE Committee proposes that more trained ECG officers be made available to students in schools, polytechnics and ITE to provide face-to-face professional advice to students and other forms of ECG support and activities. ECG officers can undertake one-to-one or group ECG counselling sessions as well as design the ECG curriculum and organise related activities.
2.9 A working adult will need different ECG from a student. Some may need guidance on progressing within their chosen fields, whilst others may require assistance to enter new sectors. Since the ECG required at varying stages of an individual’s life will differ, working adults can continue to be served primarily by career coaches based at WDA’s career centres.

2.10 The delivery of ECG can be supported by a **one-stop online portal** that offers tailored profiling and assessment tools and resources, information on labour market conditions and opportunities, and the education, training and career options available for individuals across the various life stages. Through the portal, ECG resources can be accessed at an individuals’ own time and convenience. Access should also be open to parents and educators to empower them to provide the best possible advice for students.
Chapter 3: Strengthen Education and Training in Polytechnics and ITE

3.1 Polytechnic and ITE education has always played a key role in preparing our Singaporean youth for work and life. Thus, to meet the evolving demands of a changing economy, we have to take our polytechnic and ITE education to the next level. We will need to work with employers to enhance students’ learning so that they have a solid education and skills foundation to advance in their chosen careers.

**Recommendation 2: Enhance internships at the polytechnics and ITE**

3.2 The learning of technical skills is most effective when such skills are acquired and applied in a real work environment. For students, this can be done through good internships.

3.3 An internship is a key component of an applied education programme. A good internship experience is also critical as it shapes a student’s perceptions of the sector, and could determine whether he or she joins the sector upon graduation.

3.4 Today, most polytechnic and ITE students already have the opportunity to undertake an internship as part of their studies. However, while the quality of internships at our polytechnics and ITE is generally good, the quality of experience can differ significantly from student to student, depending on how the internship is carried out by the host employers. Classroom learning and workplace application should be coupled as tightly as possible to support effective teaching and learning.
3.5 The ASPIRE Committee recommends that the polytechnics and ITE, in collaboration with industry partners, review their curricula and approach to internships to better support learning at the workplace. This will help students deepen their skills so that they are well placed to pursue a career in their chosen sector.

3.6 Internships should be well structured, with clear and relevant learning outcomes defined ahead of time, agreed upon between the institution and the host company, and made known to the student and their company trainers or mentors ahead of the internship. Students’ job scopes and assignments should contribute to these learning outcomes.

3.7 Support from host companies, such as the provision of good mentors to monitor and guide the interns at the host companies, will also strengthen the learning process. For fields requiring deep technical expertise, internships can also be lengthened where needed so that students can learn better through more meaningful work assignments.

*Recommendation 3: Increase Nitec to Higher Nitec progression opportunities*

3.8 The ASPIRE Committee received industry feedback that in some industry sectors, employers felt that allowing Nitec graduates to develop their skills further through a longer duration of training at ITE would better prepare them for work in the sector. Thus, the Committee recommends increasing the number of Higher Nitec places for Nitec graduates. More Nitec graduates will be able to progress to Higher Nitec courses to deepen their skills further before they begin work.
3.9 Notwithstanding the higher number of Higher Nitec places provided to Nitec upgraders, good standards, rigour of training and proper assessment levels must be maintained.

**Recommendation 4: Establish polytechnic and ITE leads for each key industry sector**

3.10 Today, the polytechnics and ITE offer a comprehensive suite of programmes to cater to their students. Each polytechnic and ITE has been building up its own faculties, programmes and industry linkages, to provide the best possible applied education for its students.

3.11 The ASPIRE Committee recommends designating a polytechnic or ITE college as a lead institution for each key sector, to coordinate efforts in working with different stakeholders. This will strengthen linkages with industry and help enhance programme offerings.

3.12 The sector lead will work with relevant economic agencies, employers and other stakeholders, to enhance the industry-related components of the programmes so that course offerings are kept relevant. These partnerships can be in areas such as internships and industry projects.

3.13 A growing number of companies are tapping on our polytechnics’ and ITE’s expertise for applied research. Our institutions can explore setting up more Centres of Innovation (COIs) in sectors with strong industry demand. These can be used to bring in more industry projects to maintain the currency of academic staff, and give students greater exposure to the latest industry developments.
3.14 **All institutions and students can benefit** from this coordination, with stronger programmes, better internships and more industry-relevant or even industry-led training. Employers can also have a **convenient point of contact** with each sector lead to coordinate their institutional engagements, particularly if they have new ideas or projects that they would like to partner the polytechnics or ITE on.

3.15 The ASPIRE Committee notes the strong industry linkages that the polytechnics and ITE have built up over the years. The recommended structure is **not** intended to supplant every existing relationship and start building links afresh. Rather, it should build on these existing linkages and goodwill, but coordinate efforts and the deployment of resources so that all institutions and students will benefit as a whole.

**Recommendation 5: Expand online learning opportunities**

3.16 Beyond keeping up-to-date with the latest industry developments, our polytechnics and ITE can look at leveraging the latest technology to enhance their programmes. The Internet, mobile computing and education technology offer a powerful combination that can augment academic learning and support continual learning. Learning no longer needs to be confined to a specific place or time. In addition, individuals can readily access curated material drawn from the best educational resources available, developed locally and elsewhere.

3.17 **The ASPIRE Committee recommends that the polytechnics and ITE increase their use of online learning to make it easier for individuals to learn anywhere and anytime.** Polytechnic and ITE graduates who are working will find it
easier to pursue CET as online learning can reduce their travel time and allow them to learn **flexibly** based on their work and family schedules.

3.18 **Online learning can also enhance learning for individuals.**

Online modules can cover both **skill-refresher and skill-deepening** content that support both graduates and students. Graduates who are in the proposed place-and-train programmes may find value in having their academic material easily accessible online as they apply theoretical concepts in real work settings. Students who are on internships or attached to the host companies will also benefit as this will reduce the need for them to travel back to their institutions. The use of data analytics can also support institutions in providing timely intervention to students who may be falling behind.

3.19 The ASPIRE Committee also notes that while the use of technology confers many advantages, it cannot fully address issues related to student engagement and motivation, nor can it substitute hands-on learning and practice. When creating online courses and assessment, institutions must address this through the incorporation of elements such as motivational design. The incorporation of social interaction and real-life opportunities for hands-on learning must also not be ignored.

*Recommendation 6: Provide more development and support programmes for students*

3.20 Beyond enhancing the applied aspects of the polytechnic and ITE education, we also need to ensure that our students develop holistically, and are equipped with the life skills and
socio-emotional competencies needed to lead a successful and fulfilled life.

3.21 More students from diverse backgrounds and with varying abilities are entering our polytechnics and ITE. Some do well on their own with little support, while others may struggle, especially students with difficult family situations.

3.22 The polytechnics and ITE must provide adequate support to help every student succeed, no matter what his or her circumstances may be.

3.23 The Committee notes that there is currently adequate financial support in terms of tuition grant schemes, study loans, and bursaries, for those who need them. However, students who are not doing well will benefit from more motivational support and programmes for character development.

3.24 We recommend that our polytechnics and ITE offer more development programmes to strengthen students’ leadership, character and resilience, and equip them with the necessary skills for life.

3.25 In mounting these development programmes, the polytechnics and ITE can consider partnering, where appropriate, with community partners, such as community and self-help groups, to leverage their expertise and experience.

3.26 We also recommend that our polytechnics and ITE explore more opportunities for social innovation and entrepreneurship. These expanded opportunities can be student- or faculty-led. Students will benefit from the skills and industry exposure they stand to gain from the experience.
More on-campus work opportunities can also be offered, with students who require financial support given favourable consideration for these opportunities. In this way, students with financial need can have better access to paid work opportunities, which can also help develop their life skills.
Chapter 4: Helping Polytechnic and ITE Graduates Deepen Skills Post-Graduation

4.1 Enhancing education at the polytechinics and ITE will ensure that our graduates have a strong education and skills foundation to start their careers. However, individuals must embrace lifelong learning so that they stay current and can seize new opportunities.

4.2 We recommend the following measures so that polytechnic and ITE graduates have more avenues to learn and deepen their skills even after they graduate.

Recommendation 7: Launch new programmes that integrate study and work, such as place-and-train programmes

4.3 The ASPIRE Committee recommends expanding the options for polytechnic and ITE graduates to attain employer-recognised skill certifications through the introduction of place-and-train programmes in suitable sectors. This will enable fresh polytechnic and ITE graduates to work and deepen their skills at the same time.

4.4 These programmes can be structured in a similar manner to the Swiss and German apprenticeships, where further skills training takes place in a structured manner at the workplace through an integration of knowledge learnt in the classroom and its real-world application.

4.5 Such integrated work-and-learn programmes will provide additional opportunities for polytechnic and ITE graduates to put their skills into practice while concurrently allowing them to upgrade through learning at the workplace. Learning on the job is an effective way of improving their work
proficiencies and deepening their skills so that they are well placed to take on new or larger job scopes and progress in their careers.

4.6 Under a place-and-train programme, polytechnic and ITE graduates will be matched to progressive employers committed to supporting on-the-job learning and further upgrading. The curricula will be designed in consultation with industry to ensure their industry relevance. The ASPIRE Committee recommends that under such schemes, the graduates be employed by the companies and paid monthly salaries as employees. They will undergo structured on-the-job training in the workplace, which will be complemented with classes at the polytechnics or ITE.

4.7 The programmes should have the following features:

- A salary during the programme to reflect the actual work undertaken by the graduates;

- The conferment of an employer-recognised skills certification upon completion of the programme; and

- Potentially higher pay upon completion of the programme if the graduates perform competently and take on larger job scopes given the additional skills that they have built up in the course of the programme.
Recommendation 8: Increase post-diploma Continuing Education and Training (CET) opportunities at our polytechnics

4.8 CET will be increasingly important for individuals as industries continue to evolve and new technologies and processes continue to emerge. The ASPIRE Committee recommends providing more skills-refresher and skills-deepening opportunities through post-diploma CET at the polytechnics to allow polytechnic graduates to maintain their skills currency. This will help boost the readiness and confidence of our polytechnic graduates, especially if it has been some time since they last applied their knowledge and skills, e.g. for males who entered National Service (NS) right after completing their diploma courses.

4.9 Post-diploma CET options are already highly subsidised. Making these options more flexible and accessible will encourage graduates to undertake them and secure their first footing on the CET ladder within a few years of their graduation. These additional options should also be developed closely with industry so that they incorporate the latest developments and are recognised by employers. More Master Craftsman programmes can also be considered so that polytechnic and ITE graduates have further opportunities to develop deep skills in their respective professions.¹

¹ There is currently one Master Craftsman programme in Precision Engineering offered by Nanyang Polytechnic with support from EDB, SPRING Singapore and WDA. Students who complete the programme graduate with a Workforce Skills Qualification (WSQ) Diploma in Precision Engineering (Master Craftsman Skills).
**Recommendation 9: Support vocation-based deployments during National Service (NS)**

4.10 NS is a natural rite of passage for every Singaporean male transiting from school to work. The ASPIRE Committee considered how to facilitate the linkage between students’ education and career, taking into account this period of NS.

4.11 In this regard, the Committee welcomes the recommendations by the Committee to Strengthen National Service (CSNS) to take the skills and prior training of full-time National Servicemen (NSFs) into account in their NS deployment, subject to operational needs and considerations, as well as to accredit soldiering competencies to reflect the leadership, technical and specialist skills that NSFs acquire during NS.

4.12 This will allow our polytechnic and ITE graduates to maintain their skills during NS and, at the same time, allow our NSFs to obtain industry-recognised accreditation for their related vocational specialisations wherever possible. With this opportunity, they will be better placed to join the industry they had trained for after they finish their full-time NS.

4.13 *The ASPIRE Committee recommends that the polytechnics and ITE work closely with the Ministry of Defence and Ministry of Home Affairs to support the implementation of these initiatives.* We should endeavour to benefit as many polytechnic and ITE male graduates as possible, taking into account the operational needs and other considerations of the Singapore Armed Forces (SAF) and the Home Team.
Chapter 5: Helping Polytechnic and ITE Graduates Progress in their Careers

5.1 To better enable Singaporeans to fulfil their career aspirations, whatever their starting point, we must encourage lifelong learning, and foster a better match between students’ learning and the value employers place on such learning. This requires clarity on the skills required to do one’s job well and to progress to the next level.

Recommendation 10: Develop sector-specific skills frameworks and career progression pathways in collaboration with industry

5.2 To support career progression based on industry-relevant skills, the ASPIRE Committee recommends developing sector-specific skills frameworks linked to progression pathways. These frameworks should clearly specify the industry-relevant skills required to advance, and can be used to establish benchmarks for hiring and progression.

5.3 Many established employers have internal skills frameworks. However, these are often unknown to prospective job applicants. Compared to company-specific frameworks, a sector-specific skills framework has the advantage of defining the skills and industry standards across companies within the sector, thus providing greater credibility and validity. This allows the skills of an employee to be recognised not just by a single company, but by the sector as a whole, thus enhancing labour market mobility and relevance for employees.

5.4 The polytechnics and ITE have developed their own sets of industry standards to guide their curriculum design and Pre-Employment Training (PET) programmes. Since 2005, WDA has
developed 34 sector-based competency frameworks to guide the design and delivery of CET courses by public and private providers under the Singapore Workforce Skills Qualifications (WSQ) system. However, not all sectors are covered by a WSQ framework. It is timely to harmonise the two systems, build on the WSQ, and develop sector-specific skills frameworks that comprehensively cover the skills needs across job levels for key industry sectors. These frameworks could serve as the common reference frameworks for skills-based PET and CET offered by public education institutions, including our polytechnics and ITE, as well as private training providers and industry training centres.

5.5 The ASPIRE Committee recommends that these skills frameworks be designed at the sector level, to take into account the specific requirements of each industry. Figure 1 below provides an illustration of what such a skills framework could look like, using the early childhood sector as an example.
Figure 1: Illustrative Example of a Possible Sector-Specific Skills Framework for Nursery Teachers (specific to developing the child holistically)

<table>
<thead>
<tr>
<th>Nursery Teacher 1</th>
<th>Nursery Teacher 2</th>
<th>Nursery Teacher 3</th>
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<tr>
<td>Understand &amp; apply teaching strategies based on child development theories and curriculum frameworks.</td>
<td>Additionally, to use differentiated instruction in implementing teaching strategies.</td>
<td>Additionally, to assist in evaluating and assessing teaching strategies.</td>
</tr>
<tr>
<td>Set up quality learning environments in the classroom; use existing learning resources appropriately.</td>
<td>Additionally, to customise and adapt existing learning resources to enhance learning.</td>
<td>Additionally, to assess effectiveness of learning environments and resources.</td>
</tr>
<tr>
<td>Observe, interpret and record child’s learning progress to inform practices.</td>
<td>Additionally, to document these in a structured manner.</td>
<td>Additionally, to customise documentation rubrics for centre-wide use.</td>
</tr>
</tbody>
</table>

Source: Early Childhood Development Agency

5.6 These sector-specific skills frameworks can become the benchmarks for HR practices, particularly in the **hiring** and **career progression of employees**. The aim of the frameworks is to encourage employers to reward and promote employees based on their skills. Employees will also benefit from a clearer understanding of what is required to progress and advance in their careers. Skills should form the rungs in the **ladders for career advancement**.

5.7 **To complement the skills frameworks**, the ASPIRE Committee recommends introducing new modular courses
that will help individuals build up specific skills needed for progression. These courses will allow individuals to develop or deepen specific skills to perform better at their jobs and take on larger job scopes, and this better performance or bigger responsibilities can be recognised and remunerated accordingly. Employees will thus have an additional means of skills-deepening and career advancement, aside from learning on the job or pursuing higher qualifications.

5.8 These modular courses can include CET courses offered by our post-secondary education institutions, WSQ courses, and other industry-recognised training and certifications offered by the industry itself. Industry should be closely consulted in the development of these courses to ensure their relevance to employers.

5.9 The courses could also count as credits and/or be recognised for admission to additional industry training or certification programmes so that individuals can deepen their skills further. Courses offered by the polytechnics or universities could give the individual advanced standing or credit, should he or she subsequently enrol in a full diploma or degree programme.

5.10 Figure 2 below provides an illustration of what such a progression pathway can look like, using the marine and offshore industry as an example.

5.11 With clearly articulated skills frameworks and progression pathways, employees can take courses to develop the skills that employers value, perform better at their jobs or take on larger responsibilities, and be remunerated accordingly.
Figure 2: Illustrative Example of Possible Career Progression Pathway for Marine and Offshore Technology

- **Degree**
  - Engineer
  - Further Progression
  - Modular courses + Work experience

- **Diploma**
  - Assistant Engineer
  - Modular courses + Work experience
  - Supervisor/Foreman
  - Senior Technician
  - Technician

- **Higher Nitec**
  - Modular courses + Work experience
  - Senior Technician
Chapter 6: Conclusion

6.1 The ASPIRE Committee believes that the recommendations set out in this report will help to place greater emphasis on skills, and create more progression pathways and learning opportunities for our polytechnic and ITE graduates.

6.2 Our recommendations also represent the first steps in reshaping our society’s approach to education and learning. We must continue the pursuit of learning and excellence throughout our lives, and create more avenues for this. The skills and experience acquired at each stage of life must be recognised and rewarded.

6.3 For our recommendations to make a difference to each individual and to our nation, the Government, employers, workers, unions, educators, parents and students must all work together as part of a national effort.

6.4 Every Singaporean matters. Regardless of where they start, they should have the opportunities to progress, fulfil their potential, and achieve their aspirations. Together, we can secure a brighter future for each individual and for us as a nation.
Annex A

Composition of the ASPIRE Committee

ASPIRE Steering Committee

Chairperson
1  Ms Indranee Rajah  Senior Minister of State for Law and Education

Members
2  Mr Jonathan Asherson  Regional Director ASEAN and Pacific, Rolls-Royce Singapore Pte Ltd
3  Mr Boo Kheng Hua  Principal & Chief Executive Officer, Temasek Polytechnic
4  Mr Gonzalo Ruiz Calavera  Senior Executive Vice President, Head of Human Resources, Asia/Australia, Siemens Pte Ltd
5  Ms Chan Lai Fung  Permanent Secretary (Education), Ministry of Education
6  Mr Chan Lee Mun  Principal & Chief Executive Officer, Nanyang Polytechnic
7  Prof Cheong Hee Kiat  President, SIM University
8  Mr Chia Mia Chiang  Principal & Chief Executive Officer, Ngee Ann Polytechnic [until 31 March 2014] President, Nanyang Academy of Fine Arts [w.e.f. 1 April 2014]
9  Mr Choo Chiau Beng  Senior Advisor, Keppel Corporation Limited
10 Mr Douglas Foo  Executive Chairman, Sakae Holdings Ltd
11 Mr Markus Froehlich  Managing Director, Nestlé R&D Centre (Pte) Ltd Singapore
12 Ms Ho Peng  Director-General of Education, Ministry of Education
13 Mr R Jayachandran  Chairman, Olam International Ltd
14 Ms Ayesha Khanna  Chief Executive Officer, Technology Quotient

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<tr>
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<tr>
<td>15</td>
<td>Dr Lim Boon Huat</td>
<td>Managing Director, Rohde &amp; Schwarz Asia Pte Ltd</td>
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<td>16</td>
<td>Mr Loh Khum Yean</td>
<td>Permanent Secretary, Ministry of Manpower</td>
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<tr>
<td>17</td>
<td>Ms Olivia Lum</td>
<td>Executive Chairman and Group Chief Executive Officer, Hyflux Ltd</td>
</tr>
<tr>
<td>18</td>
<td>Mr Ng Cher Pong</td>
<td>Chief Executive, Singapore Workforce Development Agency</td>
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<td>19</td>
<td>A/Prof Benjamin Ong</td>
<td>Director of Medical Services, Ministry of Health</td>
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<tr>
<td>20</td>
<td>Mrs Ow Foong Pheng</td>
<td>Permanent Secretary, Ministry of Trade and Industry</td>
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<td>21</td>
<td>Mr Pradeep Pant</td>
<td>President, Pant Consulting Pte Ltd</td>
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<td>22</td>
<td>Mr Pek Lian Guan</td>
<td>Chief Executive Officer, Tiong Seng Holdings Ltd</td>
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<td>23</td>
<td>Mr Bruce Poh Geok Huat</td>
<td>Director &amp; Chief Executive Officer, Institute of Technical Education</td>
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<tr>
<td>24</td>
<td>Dr Huck Poh</td>
<td>General Manager, Pulau Bukom Manufacturing Site &amp; Manufacturing Director, Shell Eastern Petroleum (Pte) Ltd</td>
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<tr>
<td>25</td>
<td>Mr Suhaimi Rafdi</td>
<td>Chief Executive Officer, Cathay Organisation Holdings Ltd</td>
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<tr>
<td>26</td>
<td>Mr Joshua Soh</td>
<td>Managing Director, Singapore &amp; Brunei, Cisco Systems (USA) Pte Ltd</td>
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<td>27</td>
<td>Mr Tan Choon Shian</td>
<td>Principal &amp; Chief Executive Officer, Singapore Polytechnic</td>
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<tr>
<td>28</td>
<td>Mr Gary Tan</td>
<td>Managing Director, Head of Financial Markets, Singapore, Standard Chartered Bank</td>
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<tr>
<td>29</td>
<td>Mr Tan Kai Hoe</td>
<td>Chief Executive, SPRING Singapore</td>
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<td>30</td>
<td>Mr Tan Puay Hin</td>
<td>Regional Chief Executive Officer (Southeast Asia), PSA International Pte Ltd</td>
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<td>31</td>
<td>Prof Tan Thiam Soon</td>
<td>President, Singapore Institute of Technology</td>
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<td>32</td>
<td>Prof Raj. Thampuran</td>
<td>Managing Director, Agency for Science, Technology and Research</td>
</tr>
<tr>
<td>33</td>
<td>Mr Clarence Ti</td>
<td>Chief Executive, Vital, Ministry of Finance [until 30 April 2014] Principal &amp; Chief Executive Officer, Ngee Ann Polytechnic [w.e.f. 1 May 2014]</td>
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<tr>
<td>34</td>
<td>Mr Yeo Li Pheow</td>
<td>Principal &amp; Chief Executive Officer, Republic Polytechnic</td>
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<td>35</td>
<td>Mr Yeoh Keat Chuan</td>
<td>Managing Director, Singapore Economic Development Board</td>
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### ASPIRE Review Committee 1: Strengthening Applied Pedagogy and Industry Links

#### Co-Chairpersons

1. **Dr Lim Boon Huat**  
   Managing Director, Rohde & Schwarz Asia Pte Ltd
2. **Mr Tan Choon Shian**  
   Principal & Chief Executive Officer, Singapore Polytechnic

#### Members

3. **Mr Christian Burdin**  
   Managing Director, South East Asia, Festo Pte Ltd
4. **Mr Chan Tee Seng**  
   Chief Executive Officer, NTUC First Campus Co-operative Ltd
5. **Mr Khoong Hock Yun**  
   Assistant Chief Executive, Development Group, Infocomm Development Authority of Singapore
6. **Mr Thilo Krapfl**  
   Director & Plant Manager, Evonik Oil Additives Asia Pacific Pte Ltd
7. **Ms Lee Yan Hong**  
   Managing Director and Head, Group Human Resources, DBS Bank Ltd
8. **Ms Caroline Lim**  
   Global Head of Human Resource and Corporate Affairs, PSA International Pte Ltd
9. **Ms Lim Yee Fong**  
   Site Director, Abbott Manufacturing Singapore [until 31 March 2014]
10. **Ms Jayanthi Manian**  
    Director, Chase Resource Management Pte Ltd
11. **Prof Aziz Amirali**  
    Executive Director, Keppel Offshore & Marine Technology Centre
12. **Dr Moh Chong Tau**  
    President & Chief Executive Officer, Makino Asia Pte Ltd
13. **Mr Mohd K Rafin**  
    Chief Corporate Officer, Park Hotel Group
14. **Mr Saw Ken Wye**  
    Chief Executive Officer, CrimsonLogic Pte Ltd
15  Mr Darshan Singh  
    Director, Human Capital Division, 
    SPRING Singapore

16  Mr Alvin Tan  
    Assistant Managing Director, Singapore 
    Economic Development Board

17  Mr Gerry Tan  
    Managing Director, Griffin Kinetic Pte 
    Ltd 
    Honorary Secretary, Singapore Logistics 
    Association

18  Mr Tan Seng Hua  
    Deputy Chief Executive Officer 
    (Academic), Institute of Technical 
    Education [until 31 July 2014] 
    Dean, ITE Academy & Chief Executive 
    Officer, ITE Education Services [w.e.f. 1 
    August 2014]

19  Mr Teo Eng Dih  
    Director (Manpower), Ministry of 
    Defence

20  Ms Teoh Zsin Woon  
    Deputy Secretary (Development), 
    Ministry of Health

21  Mr James Wong Kok Onn  
    Deputy Secretary (Policy), Public Service 
    Division
ASPIRE Review Committee 2: Enhancing Students’ Success

Co-Chairpersons
1. Mr Ng Cher Pong  Chief Executive, Singapore Workforce Development Agency
2. Mr Clarence Ti  Chief Executive, Vital, Ministry of Finance [until 30 April 2014]  Principal & Chief Executive Officer, Ngee Ann Polytechnic [w.e.f. 1 May 2014]

Members
3. Mr Ang Kong Keng  Senior Lecturer (Electrical Engineering Division, School of Engineering), Ngee Ann Polytechnic
4. Mr Boo Junfeng  Filmmaker
5. Ms Christophane Foo  Director, Human Resource and Organisation Development, SPRING Singapore
6. Dr Goh Mong Song  Deputy Principal (Academic), ITE College West
7. Ms Goh Wan Yee  Director, Human Capital, Singapore Economic Development Board
8. Mr Edmond Khoo Keng Gie  Deputy Principal, Temasek Polytechnic
9. Prof K. Ranga Krishnan  Dean, Duke-NUS Graduate Medical School
10. Mr David Leong  Managing Director, PeopleWorldwide Consulting Pte Ltd
11. Ms Liew Wei Li  Director, Student Development Curriculum Division, Ministry of Education
12. Mr Kulshaan Singh  Partner, Head of Sales for Asia, Middle East and Africa, Mercer
13. Mr Gilbert Tan  Chief Executive Officer, Employment and Employability Institute
14. Mr Thambyrajah T  Registrar, Nanyang Polytechnic
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<tr>
<td>15</td>
<td>Mr Alexander Trost</td>
<td>Vice President HR, Infineon Technologies Asia Pacific Pte Ltd</td>
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| 16  | Mr Tui Jurn Mun       | Deputy Director (Office of Industry and Collaboration), Republic Polytechnic [until 31 March 2014]  
                                         | Director (Office of Industry and Collaboration), Republic Polytechnic  
                                         | [w.e.f. 1 April 2014]         |
ASPIRE Review Committee 3: Strengthening Research, Innovation and Enterprise

Co-Chairpersons
1. Mr Chan Lee Mun  
   Principal & Chief Executive Officer,  
   Nanyang Polytechnic
2. Prof Raj. Thampuran  
   Managing Director, Agency for Science,  
   Technology and Research

Members
3. Mr Ang Yuit  
   Managing Director, The Adventus Consultants Pte Ltd
4. Ms Irene Cheong  
   Director, Industry Liaison Office, National University of Singapore
5. Dr Steven Fang  
   Partner, Clearbridge Accelerator
6. Mr Gian Yi-Hsen  
   Director, Industry Identification and Incubation, Singapore Economic Development Board
7. Ms Ho Yean Fee  
   Vice President, Product & Innovation, SAP Asia Pte Ltd
8. Mr Peter Lam  
   Deputy Principal & Registrar, Ngee Ann Polytechnic
9. Mr Liau Eng Soon  
   Director, Technology Adoption Programme, Agency for Science, Technology and Research
10. Dr Lim Khiang Wee  
    Executive Director, CREATE
11. Mr Lo Kien Foh  
    Managing Director, Continental Automotive Singapore Pte Ltd
12. Mr Leslie Loh  
    Managing Director, Red Dot Ventures Pte Ltd
13. Mr Declan MacFadden  
    President, Flavour & Nutrition, Asia Pacific, Symrise Asia Pacific Pte Ltd
14. A/Prof Neo Kok Beng  
    President & Chief Executive Officer, AWAK Technologies Pte Ltd
15. Dr Kay Segler  
    Senior Vice President Special Projects Asia, BMW Group
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<td>16</td>
<td>Mr Soh Sze-Wei</td>
<td>Divisional Director, Curriculum and Educational Development 2, Institute of Technical Education</td>
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<td>17</td>
<td>Mr Tan Kai Hoe</td>
<td>Chief Executive, SPRING Singapore</td>
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<td>18</td>
<td>Mr Theodore Tan</td>
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<td>Mr Vincent Tan Chor Khoon</td>
<td>Managing Director, Select Group Ltd</td>
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<td>20</td>
<td>Mrs Yeung Geak Hong</td>
<td>Director, Human Resource, Singapore Polytechnic</td>
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# ASPIRE Engagement Committee

## Chairman

1. Mr Heng Guan Teck  
   Deputy Principal, Republic Polytechnic  
   [until 31 Jul 2014]  
   Deputy CEO (Academic), Institute of Technical Education  
   [w.e.f. 1 Aug 2014]

## Members

2. Ms Zalina Ariffin  
   Course Manager (Diploma in Mass Communication), Ngee Ann Polytechnic

3. Mr Russell Chan Wai Meng  
   Director (Planning & Projects Office), Ngee Ann Polytechnic

4. Mr Greg W K Chew  
   Deputy Director (Media, School of Design and Media), Institute of Technical Education

5. Ms Chua Ai Lian  
   Deputy Director (Corporate & International Development), Institute of Technical Education

6. Dr Gan Su-lin  
   Principal Lecturer, Republic Polytechnic

7. Mr Santokh Singh Grewal  
   Director (Communications & Outreach), Nanyang Polytechnic

8. Ms Low Lay Leng  
   Deputy Director (Department of Organisation Development), Singapore Polytechnic

9. Ms Georgina Phua  
   Director (School of Digital Media & Infocomm Technology), Singapore Polytechnic

10. Mr Daniel Tan Kim Khoon  
    Director (School of Interactive & Digital Media), Nanyang Polytechnic

11. Mr Benjamin Tan Beng Jin  
    Deputy Director (School of Hospitality), Republic Polytechnic

12. Mr Raymond Teo  
    Director (Student and Alumni Affairs Department), Temasek Polytechnic

13. Mrs Mary Thomas  
    Senior Lecturer (School of Business), Temasek Polytechnic
**Overview of ASPIRE Engagements**

1. Efforts to engage key stakeholders were carried out via platforms such as an ASPIRE Townhall, online surveys, face-to-face engagement sessions and focused group discussions (FGDs), a COMPASS (Community and Parents in Support of Schools) Panel Dialogue, dialogue sessions with secondary school educators, and a REACH (Reaching Everyone for Active Citizenry at Home) Dialogue with Small and Medium Enterprises.

2. We engaged a total of 20,091 stakeholders – 11,831 polytechnic students, 5,083 ITE students, 1,134 parents, 1,496 alumni, 396 polytechnic and ITE staff, and 151 secondary school leaders and teachers. The feedback we received is summarised below.

**Aspirations for and Expectations of an Education**

3. Students, alumni, polytechnic and ITE staff and parents generally felt that the polytechnics and ITE prepared students well for the workforce as they equipped students with industry-relevant knowledge and skills as well as soft skills, and gave them the opportunity to take on internships and work on industry projects.

4. Educators at the secondary school level felt that the lack of attractiveness of a skills-based pathway was due to the prevalent mind-set that skilled jobs, particularly blue-collar ones, were technical in nature and of lower standing than managerial positions.

5. 78% and 70% of polytechnic and ITE students surveyed respectively said that they would consider joining the workforce
immediately after graduation if they were guaranteed a higher starting pay. 68% and 58% of polytechnic and ITE students surveyed respectively said that they would consider joining the workforce immediately after graduation if they were guaranteed clear employment prospects.

**Perceptions of Learning on the Job**

6. Students recognised the value of internships and industry attachments in preparing them for the workforce, but felt that there was room for more structured work attachments which would help them become more work-ready, develop a more relevant industry portfolio, and provide them with networking opportunities as well as clarity in their choice of career. This was a similar sentiment shared by alumni, parents and teaching staff.

7. Students were keen to take on the proposed place-and-train programmes as it would provide the opportunity to better assimilate into the workforce and provide a credible alternative progression pathway. They generally felt that it was crucial to secure employers’ buy-in and recognition, and this would have to be credibly reflected in pay scales.

**Sentiments towards Education and Career Guidance**

8. Students indicated that family members were a predominant source of advice when choosing a course of study – 62% and 49% of polytechnic and ITE students surveyed respectively cited parents as one of their top three influences. This was less pronounced for career decisions as students turn to traditional career platforms such as exhibitions, talks, career fairs and the media for information.
9. It was acknowledged that trained education and career officers could play a stronger role in school. Education counsellors had the least influence on students, with only 7.3% and 7.8% of polytechnic and ITE students surveyed respectively citing them as influencing education decisions. Students and alumni also highlighted that they preferred more personalised and enhanced career guidance programmes.

10. Most students and parents said that an online portal could be useful if it could provide relevant industry information and was readily accessible to all.