

# **The Workforce Development Applied Research Fund (WDARF) Grant Call Singapore - 2018**

**RESEARCH FOCUS**

## PREFACE

Globalisation and the technological revolution that began in the last decades of the 20<sup>th</sup> century has affected how, what, and where we work. Coupled with the local labour market conditions, they are impacting current and future workforce development at a pace that has not been experienced before.

On the global front, there is growing access to and use of information and communication technology, which is changing how goods and services are produced and how they are provided and consumed. There is also growing employment in high-skilled and services occupations, as well as creation of jobs with new skills required. With the rapid pace of skills obsolescence and technology deployment at the workplace, many of the jobs today will not exist in 2030.

On the local front, Singapore is restructuring its economy towards a knowledge-intensive and innovation-driven economy. As shared by Finance Minister Mr Heng Swee Keat during the Budget 2018: Together, A Better Future, he urged Singaporeans to be ready for three major shifts in the coming decade:

Firstly, the shift in global economic weights towards Asia. Asia will play a larger role in global trade and investment flows. ASEAN countries are moving up the value chain and their middle-class population is growing rapidly. All these developments represent significant opportunities for our firms and people. Our economy must be geared to ride on and contribute to Asia's growth.

Secondly, the emergence of new technologies. Robotics and digital technologies will change the way we live, work and play. New technologies are reshaping the economy and jobs. Securing better jobs and higher wages will not be just about how well we did in school, but how well we continue to learn, relearn, adapt and grow through our lives.

Lastly, Singapore resident workforce will shrink, tightening our labour market and slowing economy growth further. Raising our workforce productivity and competency will be vital to addressing manpower issues and supporting economic restructuring. The continuation of investing in the education and skills upgrading become even more critical for Singapore prosper.

As part of our efforts to address the challenges ahead, Singapore's Deputy Prime Minister Tharman Shanmugaratnam launched the SkillsFuture national movement in 2015 to provide Singaporeans with the opportunities to develop their

fullest potential throughout their life, regardless of their starting point. The SkillsFuture is anchored by four key thrusts, namely:

- a. Helping individuals make well-informed choices in education, training and careers;
- b. Developing an integrated, high-quality system of education and training that responds to constantly evolving industry needs;
- c. Promoting employer recognition and career development based on skills and mastery; and
- d. Fostering a culture that supports and celebrates lifelong learning.

To realise the SkillsFuture key thrusts requires evidence-informed policies and development of best-in-class practices which are underpinned by high quality, reliable, and responsive workforce development research. Unlike the quantity and quality of research efforts and capabilities in other areas, workforce development research activities in Singapore are at the infancy stage.

To proliferate research relevant to realize the SkillsFuture key thrusts, we have therefore set up a national-level research fund. Called the Workforce Development Applied Research Fund (WDARF), the fund will:

- a. Allow for expansion of our research scope and capability in the three research thrusts presented in following chapter to meet our policy development and programme design needs; and
- b. Provide funds for competitive bidding to allow research institutions and individuals to further contribute to our research.

To be considered for funding through the WDARF, researchers' proposed projects must be in at least one of the three key research thrusts articulated in this document.

## RESEARCH FOCUS

### Research Thrust A

#### ***Enabling and Sustaining Economic Performance through Workforce Development and Skills***

This research thrust aims to generate insights and provide recommendations for sustaining Singapore's competitive advantage in the global economy through workforce development and skills. Research should be directed at examining skills strategies and utilisation, nature of jobs and employment arrangements, returns and other benefits of Continuing Education and Training (CET) investments, and the impact of skills on workplace outcomes (e.g. productivity, innovation, learning, skills retention) and business performance.

#### Broad research question:

What is the role of workforce development and skills in enabling and sustaining economic vibrancy and growth in Singapore?

#### Areas of focus:

1. Skills strategies and utilisation
2. Returns on investment to workforce development and skills – individual, organization, society
3. Future of Work – Impact of technological advancements and new business models on skills and workforce development

#### Research questions may include but are not limited to the following:

1. What are the skill trends in the short, medium and long-term?
  - a. How can emerging skills be identified? How does training address skills trends and emerging skills?
2. How are talent and skills strategy(ies) understood and deployed in organisations?
3. How are the following supported and what other ways can they be supported:

- a. Recognition of skills;
  - b. Assessment of skills and workplace performance
  - c. Utilisation of skills
4. What are the drivers and implications of job re-design and its relationship to skills?
  5. How can the workplace continue to leverage a diverse and segmented workforce in the deployment of robotics and technologies?
    - a. What actions have the workplace taken to cater to the needs of an ageing workforce?
    - b. How can workplaces transform to better leverage skills and experience (especially of the older workforce) vis-à-vis technologies?"
  6. What implications do the emergence of the gig economy have on skills development and acquisition?
  7. How do we define and measure training outcomes? Apart from Kirkpatrick's Training Evaluation Model, how can we measure training quality and outcomes of courses?
  8. What are the returns on skills investment to individuals, enterprises and society?
  9. What is the relationship between on-the-job training and workplace performance?
  10. What is the impact of funding schemes on encouraging skills upgrading, improving career options and raising earning potential? What is the impact of funding schemes on encouraging skills utilisation?
  11. What is the relationship between Productivity and lean manpower schemes and initiatives and skills utilisation?
    - a. Why, when and how do companies make use of productivity and lean manpower schemes and initiatives?

- b. How do productivity and lean manpower schemes and initiatives shape companies' HR practices?
  - c. How do companies decide on the balance between a high skills manpower strategy and other manpower and productivity initiatives?
  - d. How can the interventions result in lasting behavioural change beyond the duration of the intervention/initiatives?
12. What is the impact of technology on the future of work, jobs, labour market structure?
13. How can companies (re)design jobs and work processes to improve business performance?
14. How can work places facilitate skills acquisition and skills utilisation?
15. How have job roles changed or are changing against the broader changing global and technological-laden landscape? What are the ways to study such job role changes?

## Research Thrust B

### ***Shaping Employment and Continuing Education and Training (CET) Decisions of All Stakeholders***

This research thrust aims to support the formulation and implementation of policies, strategies and initiatives by identifying the key factors influencing career, employment and CET decisions, including the understanding of cognition, emotion and behaviours of all stakeholders concerned (i.e. individuals, employers, career facilitators, policy-makers). Research should include exploration of various approaches and tools (e.g. behavioural insights, financial and non-financial incentives) that could be used to guide locals towards better employment outcomes and improved career resilience.

#### Broad research question:

How can we support all stakeholders concerned to make better employment and CET decisions?

#### Areas of focus:

- i. Employment facilitation and career guidance
- ii. Work and job design
- iii. Lifelong learning culture
- iv. Incentive/ intervention design

#### Research questions may include but are not limited to the following:

1. Career expectations and career decision making
  - a. What kind of programmes/schemes are most appropriate to help the employed and the unemployed in their career decision making and employment changing efforts?
  - b. What is the short term to long run impact of professional career facilitators in supporting individuals' career navigation and decision-making (i.e. longitudinal study)?

2. Understanding the unemployed
  - a. What are the common archetypes of the unemployed?
  - b. What is the recovery process following job loss and does it vary according to the different archetypes? What are the strengths and abilities of each archetypes?
  - c. What are the characteristics of the long-term unemployed (LTU) in Singapore and what are the key contributing factors?
3. Building a career-resilient workforce
  - a. What can be defined as a career-resilient workforce?
  - b. What enhances and constrains career resilience and how can it support an individual's career development?
  - c. How do individuals develop career resilience? What are the strategies for fostering individual ownership of career planning and job search?
4. What literacies are needed in the changing employment landscape and what are the best ways to develop such literacies?
5. Employers' recruitment needs and strategies
  - a. What are the key indicators used by employers for assessing potential job candidates (e.g. soft/hard skills, work experience, paper qualifications)?
  - b. What is the impact of wage subsidy on employer's decision to hire and retain workers?
  - c. How could employers work with education and training providers to improve training quality and the responsiveness of the training to business needs?
6. Career facilitation services
  - a. How can we enable job seekers to use self-help tools effectively to support their career development?



- b. What is the impact of training subsidy on individuals' commitment to learning and eventual placement in job?
  - c. What is the impact of wage subsidy on individuals' placement, retention and job motivation outcomes?
  - d. How will labour market trends (e.g. gig economy and emerging growth sector) affect employment facilitation and career guidance strategies?
7. Pre-Employment Education and Training (PET) upgraders (referring to students who seek to continue upgrading before starting full time employment) and their decision making process
- a. Who are the PET upgraders?
  - b. Where are they upgrading from?
  - c. When do they make their upgrading decisions?
  - d. What are their mental models when deciding to upgrade?
  - e. What factors influence their choice of PET upgrade?
  - f. Who influence their decision-making?
  - g. Who finance their PET upgrade?
  - h. What channels do they get their information to shape their decisions?
  - i. What are employers' perceptions of PET upgraders?
  - j. How do employers' recruitment criteria affect PET upgraders?
  - k. How does PET upgrading decision affects graduate employment outcome?
8. How can trade associations and chambers (TACs) play a larger role as intermediaries in fostering a quality CET system/ high-skills ecosystem as well as facilitate skills matching and job placement?
9. How can the features of work and job be designed to facilitate/ optimise the match between skills and aspirations of individuals and the work/ job demand? How can

- jobs be better clustered to facilitate/ optimise the match between skills and aspirations of individuals and the work/ job demand?
10. How can workers be better equipped with skills and experience to new jobs and next careers? What skills can be used across different occupations, and how can workers be better equipped with these adjacent skills?
  11. How do we engender and sustain a lifelong learning culture? How do we inculcate a culture of self-directed learning from young?
  12. What are the ways to motivate and influence individuals to take ownership of learning, skills acquisition and employment in a sustainable manner?
  13. What is the extent of individuals' and employers' reliance on incentives/interventions for CET and employment facilitation?
  14. What is the impact of government support for self-directed learning on the business models of training providers and individual learning behaviour?
  15. What are the successful partnership models or best practices between learners, employers, training organisations and public agencies to enhance learning?

## Research Thrust C

### ***Developing Effective and Impactful Approaches in Learning, Technology and Pedagogy to Enhance Learning and Employability***

This research thrust focuses on enhancing the effectiveness and impact of learning approaches, via technology, pedagogy and innovations, as well as corresponding policy and practice considerations to achieve the desired CET outcomes. These approaches should take into account the varying needs and differences of adult learners including the aspects of accessibility, adaptability and appropriateness.

#### Broad research question:

What are the ways to ensure and enhance the accessibility, adaptability and appropriateness of learning, through technology, pedagogy and innovations for effective and impactful learning and employability outcomes?

#### Areas of focus:

- i. Blended and E-learning
- ii. Adult learning
- iii. Workplace learning
- iv. Adult educator professional development

#### Research questions may include but are not limited to the following:

1. How do blended learning improve adult learning outcomes? What are the best practices for blended learning?
2. What is the profile of the workers with low levels of digital literacy?
  - a. What are the barriers and reasons that contribute to the low level of digital literacy?
  - b. How can we up-skill the digital literacy of target segments of the workforce (i.e. older workers, rank-and-file workers)?
  - c. How can we enhance the efficacy of digital literacy programmes?

3. What are the learning needs and strategies of different groups (e.g. sectors, occupations, age, qualification backgrounds, etc.)? What is the definition of a quality training programme by different groups? How does each group identify quality training programme for work and for personal development?
4. How can workplaces be transformed for effective workplace learning?
5. What are some of the barriers faced by employers in implementing and for employees in participating in work-learn initiatives? What is the support required by employers to effectively implement workplace learning programmes?
6. Recognising learning in, at and through work
  - a. How do companies and individual value learning in, at and through work?
  - b. How does learning innovation/technology transform workplace learning to support virtual workplace learning?
7. How should training providers respond in the new landscape of workplaces that are impacted by technologies/robotics and new demands from changing business models?