The Workforce Development Applied Research Fund (WDARF) Grant Call Singapore - 2023

RESEARCH FOCUS

Contents

PREFACE

Globalisation and the technological revolution that began in the last decades of the 20th century have affected how, what, and where we work. Coupled with the local labour market conditions, such changes resulting from globalisation and the technology transformation are impacting current and future workforce development at a pace that has not been experienced before.

On the global front, the COVID-19 pandemic has greatly impacted the world's economy, its firms, and its workers particularly in terms of skills development, digitalisation and business transformation. The consequences of the pandemic for sectors, jobs, and skills further underscore the importance of adult learning to provide re-training and up-skilling opportunities and addressing pressing labour market challenges.

Additionally, 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. A list of reports on the recent developments in the area of workforce development and lifelong learning is attached in Annex A.

On the local front, Singapore is restructuring its economy with a focus on being knowledge-intensive and innovation-driven. As emphasized by Finance Minister Mr Heng Swee Keat at Budget 2021, when outlining plans for Singapore to 'Emerg[e] Stronger with Skilled Workers and Innovative Businesses', it is imperative for Singapore to respond quickly and effectively to the three 'mega-shifts' of the changing competitive landscape, rising inequalities, and importance of sustainability (Budget Speech 2021).

A major thrust to handle this is to develop the skills, talents, and creativity of Singapore's people. This will enable them to gain better access to good jobs and leverage on job opportunities. The employment landscape is undergoing fundamental changes, and COVID-19 will further impact this landscape and accelerate these changes, since a digital and innovation-driven economy means that businesses will need highly-skilled workers and deep talent who will in turn need to have both broader and deeper skills and creativity.

In addition, Singapore's resident workforce will shrink, resulting in a tighter labour market which may slow the economy. This is coupled with the ongoing effects of COVID-19 slowing the entry of foreign workers to support key industry sectors in Singapore that are dependent on foreign labour. Hence, raising our workforce productivity and competency, as well as adopting new technologies in areas such as automation and

robotics, will be vital to address manpower issues and support economic restructuring. The continued investment in education and skills upgrading will become even more critical for Singapore to prosper.

As part of our efforts to address the challenges ahead, Singapore's then-Deputy Prime Minister Tharman Shanmugaratnam launched the SkillsFuture national movement in 2015 to provide Singaporeans with opportunities to develop their fullest potential throughout their life, regardless of their starting point. The next bound of SkillsFuture aims to further this provision, through key initiatives as follow:

    a.   Strengthen the enterprise pillar of the skills ecosystem;

    b.   Enhance workplace learning capabilities;

    c.   Scale up SkillsFuture work-study pathways;

    d.   Encourage and facilitate lifelong learning; and

    e.   Scale up career transition programmes for mid-career workers.

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

To proliferate research relevant to realise the key initiatives of the next bound of SkillsFuture, SkillsFuture Singapore (SSG) has therefore set up a national-level research fund. Called the Workforce Development Applied Research Fund (WDARF), the fund supports research which will create a comprehensive knowledge base for evidence-informed policies and practices on workforce development and lifelong learning. This will in turn allow for the design of evidence-informed policies, programmes and practices and the evaluation of the effectiveness and impact of such policies, programmes and practices.

The WDARF Open Grant Call completed its first five-year tranche in 2020, with SGD$14.6m awarded to 33 projects across 7 institutions through grant calls. The current five-year tranche of WDARF will run from 2021 to 2025, with SGD$10m. WDARF's key themes have been reviewed and updated to ensure that they keep pace with developments in Continuing Education and Training (CET) and, jobs and skills research. To be considered for funding through the WDARF, researchers' proposed projects can seek to address any of the Challenge Statements or align to the key research themes. For emerging topics related to CET, adult learning and workforce development, they may only be considered on a case-by-case basis. For projects in one of the three key research themes, researchers are encouraged to develop research proposals to address one or more of the research questions indicated in the following pages.

RESEARCH FOCUS

- **Research Theme A: Developing Effective Adult Learning Pedagogies and Skills Development Strategies**

This research theme focuses on enhancing the effectiveness and impact of adult learning and skills development approaches, via technology, improved andragogy and innovations in both learning and practice. Given that training and learning are also situated within the evolving needs of industry and the economy, research under this thrust should also consider the role of enterprises and their partnerships with training providers in developing and contextualising teaching and learning approaches.

Broad Research Question:
1. How to better ensure and enhance the effectiveness of adult learning and skills development approaches, through technology, andragogy and innovations?

Areas of Focus:
1. Enhancing and promoting the adoption of skills recognition systems
2. Strengthening partnerships with enterprises to enable a responsive skills ecosystem
3. Improving training participation, engagement and outcomes through effective learning design and delivery models, including technology in adult learning and workplace learning
4. Developing adult educators for effective adult learning curriculum development and facilitation

Key Interests / Research Questions in Research Theme A:
Enhancing and promoting the adoption of skills recognition systems
- How is the notion of skills, skills progression and skills mastery understood, and how do employers recognise, use and pay for skills?
- How can skills recognition by employers be enhanced and translated into employment outcomes (e.g. better wages)?
- How are talent and skills strategies understood and deployed in organisations? What are the outcomes of these strategies, and how do these strategies affect

different groups of workers?

Strengthening partnerships with enterprises to enable a responsive skills ecosystem

- How can employers work with education and training providers to improve training quality and the responsiveness of training to business needs? What is the role of corporate universities in enhancing lifelong learning and training workers for the sector?
- What are successful partnership models and roles of various stakeholders (learners, employers, training providers, public agencies, TACs) that enable a vibrant, inclusive, sustainable, responsive skills ecosystem?

Improving training participation, engagement and outcomes through effective learning design and delivery models, including technology in adult learning and workplace learning

- What is the effectiveness of current trends in learning design and delivery (e.g. micro-learning/micro-credentialing/blended learning), and what support is needed to facilitate and scale up these new models to drive training participation?
- What unique institutional arrangements would encourage the deployment of learning-tech and education-tech?
- How should TPs/AEs respond in the new landscape of workplaces that are impacted by technologies/robotics and new skills and training demands from changing business models?
- How can workplaces and workers be transformed for effective workplace learning, and what is the role of institutions and other stakeholders?

Developing adult educators for effective adult learning curriculum development and facilitation

- What are the skills AEs require to effectively train different learner groups and what support do they require?
- What are the challenges/barriers for TAE sector in adopting emerging skills? How has remote learning changed the way TAE professionals work?

- **Research Theme B: Facilitating Learning and Career Choices among Adult Learners**

This research theme identifies the key factors influencing CET decisions and those related to career and employment, including the understanding of cognition, emotion and behaviours of all stakeholders concerned (i.e. individuals, employers, educators, career facilitators, policymakers). Cultural and socio-environmental factors, and the varying needs and differences among different adult learner groups (such as mature and vulnerable adult learners) including aspects of accessibility, adaptability and appropriateness should also be considered.

Broad Research Questions:
1. How to foster a culture of lifelong learning in an increasingly digitalized and interconnected society?
2. How to better support stakeholders in their CET and related career decisions?

Areas of Focus:
1. Enhancing and promoting lifelong learning and career resilience
2. Developing differentiated learning and career support for identified groups (e.g. mid-careerists, older workers/seniors, persons with disabilities, self-employed persons)

Key Interests / Research Questions in Research Theme B:
Enhancing and promoting lifelong learning and career resilience
- How do we engender and sustain a lifelong learning culture? How do we inculcate a culture of self-directed learning? How do we grow, develop and shift mindsets and behaviours to embrace and engage in lifelong learning and increase training participation?
- How do we reconcile between lifelong learning and learning for tangible outcomes such as better employment prospects and wage increase? How can we encourage individuals to adopt a lifelong learning mindset and for employers to recognise and remunerate workers based on skills developed through lifelong learning?

- How are different learner groups planning their careers and navigating the pathways to their career goals in a labour market that is seeing more diversity in employment arrangements (e.g. digitalisation of the workplace and occupation)? When are the instances they require career navigation and decision-making support in a digitalised labour market, and how can career facilitators and career platforms better support them?
- How can we enhance career transitions for key demographic groups in response to rapid economic shifts and frequent disruptions, by bridging skills gaps and supporting individuals from the social, cognitive and emotional perspectives during these transitions?

Developing differentiated learning and career support for identified groups (e.g. mid-careerists, older workers/seniors, persons with disabilities, self-employed persons)

- What are the learning needs and barriers of different learner groups, and how can learning interventions better address gaps to ensure equal access and participation in CET opportunities across all groups, taking into consideration the current digital landscape?
- What are the new ways that are emerging to support different learner groups in a technology rich economic environment?

- **Research Theme C: Enhancing Employment Outcomes through Adult Learning and Skills Development**

This research theme aims to generate insights and provide recommendations for sustaining Singapore's competitive advantage in the global economy through adult learning and skills development that enables Singaporeans to access good jobs, earn good wages and stay employable. Research should be directed at examining emerging jobs and skills, returns and other benefits of skills development strategies, and exploring interventions (e.g. behavioural insights, financial and non-financial incentives) to guide locals towards better leveraging of learning and better employment outcomes.

Broad Research Questions:
1. How to better develop and implement effective skills development policies and interventions to support economic growth, reduce social inequality and bridge the income divide?
2. How to meet the jobs and skills needs amidst changing macroeconomic conditions to ensure they have the requisite skillsets to remain competitive and employable?

Areas of Focus:
1. Identifying emerging and future skills needs (e.g. including impact of digitalisation on the future of work) and adapting policies to support these needs
2. Optimising employment outcomes from skills development and training strategies
3. Enhancing CET incentives and interventions to promote up/re-skilling efforts

Key Interests / Research Questions in Research Theme C:
Identifying emerging and future skills needs (e.g. including impact of digitalisation on the future of work) and adapting policies to support these needs
- How is the skills ecosystem innovating and changing, and how can the different stakeholders within the skills ecosystem work together to meet SSG's vision and mission? (SDG)
- What are the emerging jobs and skills trends in the short, medium and long-term, how can we better identify current and future skills needs (based on global trends, local economic and industrial policy), and how can training better address skills

trends and emerging skills needs?

- What is the impact of technology on the future of work, jobs, labour market structure? How have job roles changed or are changing against the broader changing global and technological-laden landscape?

Optimising employment outcomes from skills development and training strategies

- How do we measure the impact of funding schemes on encouraging skills upgrading, improving career options and raising earning potential, and better determine how funding can be more targeted, efficient and accessible?

- What are the returns on skills investment (e.g. individual income, business performance, economic growth and competitiveness) to individuals, enterprises and society?

- How can the features of work and job be designed to facilitate the match between skills and aspirations of individuals and the work/job demand? How can jobs be better clustered to facilitate the match between skills and aspirations of individuals and the work/job demand?

Enhancing CET incentives and interventions to promote up/re-skilling efforts

- What are the ways to motivate and influence individuals to take ownership of learning, skills acquisition and employment in a sustainable manner? How can the interventions result in lasting behavioural change?

- What are the lessons that could be gleaned from the different monetary (e.g. SkillsFuture Credits, Mid-Career Enhanced Subsidies), and information nudges (e.g. MySkillsFuture Portal, SkillsFuture Advise workshops) on the effectiveness of shaping decision making to undertake skills upgrading?

CHALLENGE STATEMENTS

- ### Challenge Statement #1: Overcoming barriers to participation

  How can we better understand barriers and motivations faced by specific learner groups, i.e. mature workers, non-degree holders, low-wage workers, persons with disabilities in participating in CET? Are there more learner groups facing significant barriers to participation in lifelong learning? How can we better support and encourage/nudge these groups to advance their skills/training development journey through signposting, incentives and government programmes, and/or enhanced education and career guidance or any other proposed means? What are some inventive ways we can adopt to overcome any barriers to participation in lifelong learning?

- ### Challenge Statement #2: Don't PET the CET

  What are the differences in learning and training approach between that for working adults and pre-employment training? What principles of learning and training apply well to working adults but not pre-employment students? Conversely, what pedagogical/andragogical principles can apply well to both demographics? What relevant pedagogical/andragogical approaches are we able to create which focus on honing the learning of working adults?

- ### Challenge Statement #3: Digitalising adult learning

  How do we define and measure "good" use of the digital medium for adult learning? What modes – synchronous/asynchronous; hybrid/single-mode; gamified etc. – are most effective under what circumstances? How may we best harness the digital means to strengthen adult learning?

- ### Challenge Statement #4: Every workplace a learning workplace

  What companies succeed in building a learning workplace for themselves? How can the rest be helped? What modes of workplace learning (e.g. OJT, WSP) work best under what circumstances? How may we best enhance workplace learning opportunities – formal, informal and non-formal – to make workforce learning a norm for all?

ANNEX A – LIST OF RECOMMENDED READING

Research Theme A: Developing Effective Adult Learning Pedagogies and Skills Development Strategies

World Economic Forum (2021). *Education and Skills.* Retrieved from
https://intelligence.weforum.org/topics/a1Gb0000000LPFfEAO?tab=publications
(Focuses on technology and innovation)

World Economic Forum (2020). *Jobs of Tomorrow: Mapping Opportunity in the New Economy.* Retrieved from https://www.weforum.org/reports/jobs-of-tomorrow-mapping-opportunity-in-the-new-economy
(Focuses on fast emerging professions)

International Labour Organisation (2021). World Employment and Social Outlook: Trends 2021. Retrieved from
https://www.ilo.org/global/research/global-reports/weso/trends2021/lang--en/index.htm
(Focuses on effect of COVID-19 pandemic on technological innovation)

International Labour Organisation (2021). The role of digital labour platforms in transforming the world of work. Retrieved from
https://www.ilo.org/global/research/global-reports/weso/2021/WCMS_771749/lang--en/index.htm
(Focuses on how the contemporary platform economy is transforming the way work is organized)

Key Journals
- ☐ Work and Occupations (https://journals.sagepub.com/home/wox)
- ☐ Journal of Industrial Relations (https://journals.sagepub.com/home/jir)
- ☐ The international Journal of Human Resource Management (https://www.tandfonline.com/action/showAxaArticles?journalCode=rijh20)

Research Theme B: Facilitating Learning and Career Choices among Adult Learners

Organisation for Economic Cooperation & Development (2021). Fostering a culture of lifelong learning. Retrieved from https://www.oecd-ilibrary.org/education/oecd-skills-strategy-latvia_cd9e1561-en
(Focuses on lifelong learning culture)

Organisation for Economic Cooperation & Development (2021). OECD Skills Outlook 2021: Learning for Life*, OECD Publishing.*
Retrieved from https://www.oecd-ilibrary.org/education/oecd-skills-outlook-2021_0ae365b4-en
(The report exploits comparative quantitative data to highlight the key role played by socio-emotional and motivational factors in shaping successful engagement with lifelong learning)

Deloitte Global Human Capital Trends (2019*). The Social Enterprise in a world disrupted* Retrieved from
https://www2.deloitte.com/us/en/insights/focus/human-capital-trends.html
(Highlights how social enterprise reinvents itself on the back of COVID-19 pandemic disruption)

Wales 4.0 (2019). *Delivering Economic Transformation for a Better Future of Work).*
Retrieved from: https://gov.wales/sites/default/files/publications/2019-09/delivering-economic-transformation-for-a-better-future-of-work.pdf
(Focuses on the Wales' strategies for economic transformation through digital innovations)

Key Journals
□ Work, Employment and Society https://journals.sagepub.com/home/wes)
□ Higher Education, Skills and Work-based learning (https://www.emeraldgrouppublishing.com/heswbl.htm)
□ Journal of Vocational Behaviour (https://www.journals.elsevier.com/journal-of-vocational-behavior)

Research Theme C: Enhancing Employment Outcomes through Adult Learning and Skills Development

UNESCO Institute for Lifelong Learning (2021). Curriculum globALE: competency framework for adult educators Retrieved from https://uil.unesco.org/adult-education/curriculum-globale-competency-framework-adult-educators
(A reference framework, Curriculum globALE, improves not only the standard of adult learning and education programmes but also the capacities of countries to meet the Sustainable Development Goals.)

World Economic Forum: Upskilling for Shared Prosperity. Retrieved from http://www3.weforum.org/docs/WEF_Upskilling_for_Shared_Prosperity_2021.pdf
(provides a quantitative analysis of the impact upskilling can have on economic growth)

UNESCO Education Sector (2020). Adult learning and education and COVID-19 Retrieved from: https://uil.unesco.org/adult-education/issue-note-no-26-adult-learning-and-education-and-covid-19
(Focuses on role played by ALE and its means of delivery, such as through ICTs for distance learning solutions, and community learning centres (CLCs), in supporting individuals and communities to rise to challenges such as those posed by the pandemic.)

Key Journals
- □ Journal of Workplace Learning (http://emeraldinsight.com/1366-5626.htm)
- □ Journal of Education and Work (https://www.tandfonline.com/toc/cjew20/current)
- □ Research in Learning Technology (https://journal.alt.ac.uk/index.php/rlt)
- □ Journal of Vocational Education & Training (https://www.tandfonline.com/loi/rjve20