Project Summary for IAL Website

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Project Title:	Orchestration of Microlearning to Support Singapore's Workforce in their Lifelong Learning Journey: Learner, Design and Performance
Project Number:	GA18-05
Year of Approval:	2020
Funding Source:	WDARF
Objectives and intended outcomes of the project:	The aim of this research project is to explore microlearning at the learner, course design and system levels. The goals are two-fold: (i) provide empirical findings with Singapore as the context of study, and (ii) catalyze more research on microlearning in Singapore. The research will produce empirical knowledge and will be useful to inform the policy, design and implementation of microlearning.
Project Team	
Principal Investigator:	Prof Looi Chee Kit
Summary of Project (up to 300 words)	

RQ1: What factors explain Singapore workers' intention to use and participate in microlearning?
Methods
• Validation of the Decomposed Theory of Planned Behaviour (DTPB) using a SEM analysis.
• Measurement invariance analyses to test if the DTPB model is invariant across gender, age group, and technology proficiency.
Key Findings
• Positive attitudes towards microlearning (Attitude), stronger beliefs in others' opinions regarding microlearning use (SN), and stronger perceptions about one's capability to engage in microlearning (PBC), are associated with stronger intentions to participate in microlearning.
• All decomposed constructs were found to be significant predictors of the respective factors, except superior influence (SI) and resource facilitating conditions (RFC).
• Tests for measurement invariance showed support for invariance between males and females, between working adults below 40 years and above 40 years, and between working adults with lower technology proficiency and higher technology proficiency levels.
• Structural invariance was only found across gender, not age and technology proficiency; this implies that path coefficients varied depending on one's age and level of technology proficiency.
RQ2: What microlearning design aspects promote engagement among Singapore's workers?
Methods
• A microlearning course is designed with collaboration with the National HealthCare Group (NHG) and the Woodlands Health Campus (WHC).
Key Findings
• Data from 49 learners who completed the OD course indicates that they benefited from the course, with learning gains that is statistically significant.
• The design of microlearning enables a range of diverse usage patterns, e.g. facilitating learning at one-bite size to learning several sizes during one time, and access at all times of the day.

RQ3: How can education technology standards contribute to the development of a dynamic and responsive performance management ecosystem?

Methods

•	Two rounds Delphi approach to gather expert opinion and to obtain an informed and reliable group consensus regarding the most important LA data indicators.

Key Findings

•	The top five leading variables include the collection of multiple sources of assessment data, theoretically grounded or purpose-driven LA data collection, learners' motivation, and indicators of outliers.

•	Of these, only formal assessment data is typically collected. LA data indicators, and information about at-risk learners are available through a recently introduced plugin—iMoodle; this implies that the majority of LMS commercially available today are far from ideal standards.