

What Will It Take to Stay Relevant in a World Where Skills Expire Overnight? Rethinking the Promise of Micro-Credentials

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SUMMARY

Rapid technological disruption is accelerating skills obsolescence, exposing the limits of traditional education systems and threatening employability and workforce resilience. This keynote positions micro - credentials not as add-ons, but as a fundamental re-thinking of lifelong learning, responding to shifting industry demands driven by digital transformation, sustainability pressures, and education – industry misalignment. It highlights both the potential and the challenges of embedding micro - credentials at scale and calls for coordinated action to establish them as trusted and sustainable bridges between learning and work in a rapidly changing world.

Index Terms— skills obsolescence, micro - credentials, lifelong learning, digital transformation, education – industry misalignment.

FULL KEYNOTE

Rapid technological disruption has intensified the demand for agile, lifelong learning systems. Traditional degree programs increasingly struggle to keep pace with evolving industry needs, creating skill gaps that threaten workforce adaptability and economic resilience.

Micro - credentials have emerged as a compelling response to this challenge. They focus on building specific, job - relevant competencies and employability skills, making them well suited to a world, where skills age quickly. As industries undergo rapid transformation, organisations are replacing traditional business models with flexible, agile, and responsive practices. The widespread adoption of artificial intelligence, digital transformation, and automation has become the new normal, accelerating change while exposing significant gaps in workforce readiness. In this context, micro - credentials are becoming essential across occupations and professions, enabling individuals to upskill and reskill swiftly in response to shifting industry demands.

Their relevance is particularly evident in three areas. First, technological and scientific advancements are outpacing traditional education systems, dramatically shortening the lifespan of skills. Second, misalignment

between education pathways and employer needs has contributed to widespread job mismatch. Third, growing global pressures related to sustainability, ESG (Environmental, Social and Governance), and resource efficiency are creating urgent demand for new green skills and competencies. Together, these forces are reshaping how value is created in economies and how learning must respond.

While micro - credentials offer significant opportunities to align education with labour market needs, their promise is not without challenges. Evidence increasingly shows that co-designing learning with industry improves relevance and employability outcomes. In response, governments around the world are introducing national frameworks and policy instruments to integrate micro-credentials into education and labour systems. Despite this momentum, challenges remain in institutional readiness, consistent recognition, and equitable implementation. Learners, employers, and education providers continue to face difficulties in credentialing, recognition, and aligning value across education and employment systems.

This keynote synthesises emerging insights from research and policy to map the evolving micro-credential landscape, highlight effective practices, and issue a strategic call to action: to institutionalise micro-credentials as trusted, scalable, and sustainable bridges between learning and work, ensuring lifelong relevance in an era of rapid disruption.

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Speaker's short biography:



Mahesh Kayastha, currently holding the position of Research and Education Officer (Role of Chair in Automation and Future Work Skills) is affiliated with Central Queensland University, Australia. He is an award-winning academic and researcher with publications in blockchain, artificial intelligence, and education technology, and has received multiple teaching excellence awards. His primary role is within the university sector. He is actively engaged in research activities with Mahidol University, Thailand. He also serves as Director of SECONDBENCH PTY LTD, a company specialising in future-skilling strategies and AI-enabled solutions that bridge education, industry, and workforce transformation. His main areas of interests include AI Based Learning and Teaching, Education Technology, Agentic AI, Enterprise RAG, Micro-Credentials etc.