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Integrated Micro-credential Ecosystem in Higher Education for Enhancing Employability: A Multi Stakeholders' Perspective

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Abstract: Micro-credentials are short-term competency-based recognitions, complementing conventional qualification as a part of professional proficiency and lifelong learning. Micro-credentials have become increasingly important in higher education due to increased technological integration, changing societal needs, rapid digitization, and global crises, being a pre-existing phenomenon in academics. The bourgeoning debate around the need for upskilling and reskilling in the job market has intensified scholarly attention on micro-credentials in higher education primarily to enhance employability. Thus, to address this emerging transformation in high education, this study is the position in the philosophy of structural functionalism. It acknowledges the role of micro-credentials in higher education to meet the job market's needs using a qualitative investigation. A total of 60 semi-structured in-depth interviews are conducted with stakeholders from India, the UK, Dubai, and Nigeria, which help build upon the tenets of the LEPO (Learning-Environment-Process-Outcome) and extend it theoretically. The findings of the study comprehend micro-credential as an emerging learning modality. It highlights the associations between micro-credentials, competency building, and employability. It proposes a multimodal framework for an integrated ecosystem in higher education that can enhance employability and help all the stakeholders globally in value creation.

Keywords: Micro-credentials**,** stakeholders**,** blended learning, learning ecosystem, employability, higher education.

Paper: The undivided rise of globalization and rapid internet penetration has led to manifold transformations and societal changes all around the world. The transformations have intensified digitization in higher education and the integration of technology in the last few decades. This has subsequently influenced the nature of the job markets globally (Ra et al., 2020). As a result, there is a growing interest in offering professionally oriented skills for supplementing traditional educational credentials. The growing need for skill-based learning has further strengthened the role of micro-credentials in the current momentum. As a consequence, there is a rise in attention and investments in adopting micro-credentialing as part of the learning ecosystem in higher education. Micro-credentials are considered to be the newest tools to re-orient higher education and an extension to employability in the near future (Wheelahan & Moodie, 2021). Despite being a fairly recent phenomenon micro-credentials have become increasingly important in aligning the interest of higher

education (Ehlers, 2018), the stakeholders, policymakers, investors, and entrepreneurs. As a pathway for modularity, stackability, and lifelong learning micro-credentials have a promising future in higher education (Resei et al., 2019).

Micro-credentials have been defined as competency-based skill recognitions that are an extension of the formal and informal education of an individual (Duklas, 2020). By fostering professional learning and skill-building, micro-credentials empower individuals and enhance their expertise. They operate on the principle of personalized learning which offers flexibility and a variety of alternative courses designed to suit the requirements of the job market. The literature suggests that the rise of online learning adds more granularity to the design of micro-credentials. Various new learning modalities like micro-learning modules, e-learning, third-party collaborations, and certifications blend in to strengthen the role of micro-credentials in the higher education ecosystem. Therefore, the blended mode of learning or 'blended learning' weaves the modalities together and facilitates the integration of micro-credentials in the system of higher education (Dhingra, 2020).

The existing literature in the domain of higher education and blended learning identifies blended learning as an outcome of rapid digitization and ongoing disruptions (Sharma et al., 2020; Standerford et al., 2020). Though blended learning encompasses both traditional classroom practices and online learning as a method for knowledge dissemination, it focuses on technology mediation and its complexities (Bower, 2019). It acknowledges the need for preparedness, infrastructural support, technological literacy, and professional training in higher education to function smoothly (Porter & Graham, 2015). However, what is often unheeded in the integration of micro-credentials driven learning as a part of the blended learning design to generate industry-recognized credentials (Gauthier, 2020). Extant literature has focused on exploring the marketability of credentials (Charner, 1988), social sources of credentials (Brown, 2000), the authenticity of micro-credentials (Doran, 2017), critiquing the micro-credential craze (Ralston, 2020), and micro-credentials through a support based inquiry in higher education (West et al., 2020). This creates scope for exploring the potential implications of an integrated system of micro-credentials from the lens of employability and quality assurance in higher education in the digital era. Therefore, with micro-credentials extending the employability discourse in the 21st century, the study draws its motivation from the opportunities alibied. The investigation is guided by the narratives of the key stakeholders (i.e. learners, faculty, administrators of educational institutions, and industry professionals), thus providing a macro view of the opportunities and challenges posed by the credential system.

The study majorly contributes to the following three areas. First, using a grounded theory approach it develops a comprehensive multimodal framework supported by the tenets of Social Learning Theory, and Skill Acquisition Theory. The study emplaces the experience and expectations of the participants by embedding the narratives for conceptualizing the phenomenon of micro-credentials and employability in higher education. Second, the study proposes extensions of micro-credentials that can be optimized by institutions of higher education and business ventures offering micro-modules for learning. Third, the study helps in assisting policymakers with a robust understanding of the evolving ecosystem in higher education. Thereby, the integrated framework contributes to the system of higher education globally by considering the need for recognizing micro-credentials in the present and in the coming future. The study articulates arguments supporting the need of micro-

credentials for preparing for the future of work and inconsistencies in the job market.

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