PERCEPTIONS OF INDUSTRY PROFESSIONALS FROM DIVERSE SECTORS ON POST-SECONDARY MICRO-CREDENTIALS ON LINKEDIN

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ABSTRACT

The study explored industry professionals' perceptions of micro-credentialing in post-secondary education and their views on LinkedIn. The study used a grounded theory approach to develop a theory on industry professionals' perspectives on micro-credentials. The representative sample comprised 15 LinkedIn posts written by industry professionals from different sectors, and the posts were analyzed using the NVivo software program. The study found that industry professionals and employers value micro-credentials to address the skill gap and provide accessible learning opportunities. Micro-credentials are seen as a means of achieving lifelong and competency-based learning, enabling individuals to adapt to changes in their profession and stay competitive in the job market. The study's findings suggest that micro-credentials can help meet the changing demands of the job market and offer accessible and cost-effective learning options. The results have practical implications for policymakers, educators, and industry professionals using micro-credentials to address labor market needs.

Keywords: Micro-Credentialing, Industry Professionals, Grounded Theory Approach, NVivo, Text Data Mining.

1.0 INTRODUCTION

Micro-credentials are brief educational modules that focus on specific competencies and are typically certified or credentialed (Wheelahan & Moodie, 2021). In contrast to traditional higher education programs, micro-credentials provide a more personalized and adaptable learning experience, allowing learners to acquire individual credentials and combine them towards obtaining higher education qualifications. This "stacking" feature makes micro-credentials a valuable and cost-effective option for attaining industry-relevant certifications (Keevy, 2019). Given the rapidly evolving nature of work and technology and individuals continually needing to update their skills and knowledge to remain competitive in the job market and advance their careers, micro-credentials offer a practical solution for adapting to changing career paths and staying relevant in the job market (Business Council of Australia, 2021).

Although there is growing interested in micro-credentials, a significant gap exists in the literature regarding how industry professionals perceive and value these credentials in the labor market. Existing research indicates that most employers possess limited awareness or

experience with non-degree micro-credentials but need to be more inquisitive about their potential use and value (Kato et al., 2020). This knowledge gap is critical since comprehending their attitudes and perceptions towards micro-credentials is essential to ensure the relevance and value of these credentials for career and workforce development.

To bridge this gap, this study employs a qualitative research approach to investigate the perceptions of industry professionals from different sectors about micro-credentialing in post-secondary education and their views on LinkedIn. The main objective of the research is to understand how employers perceive the value and recognition of micro-credentials in the labor market. By analyzing comments and discussions on LinkedIn, the study aims to provide insights into the attitudes and perceptions of industry professionals towards micro-credentials and identify potential benefits and challenges of these credentials. The findings of this study are anticipated to provide a comprehensive understanding of how micro-credentials are perceived and valued in the labor market, thereby contributing to the existing literature on micro-credentials and offering insights into their benefits and challenges (Government of Ontario, 2020). The following central research question was developed to help frame and drive this research: "What do industry professionals from various sectors say about post-secondary micro-credentials on LinkedIn?"

2.0 LITERATURE REVIEW

Digital micro-credentials have emerged as a viable means for learners to gain recognition for smaller units of learning that focus on essential workplace skills and knowledge (Wheelahan & Moodie, 2021). Oliver (2019) defines micro-credentials as a "certification of assessed learning that is additional, alternate, and complementary to or a formal component of a formal qualification." Combining micro-credentials with non-formal learning could solve the need for rapid upskilling in the workforce (Oliver, 2019).

Although few studies examine the value of micro-credentials, the Lumina Foundation conducted a survey revealing that 95% of human resource executives and hiring managers believe micro-credentials will play a more prominent role in the future of hiring and promotion. The study showed that employers consider micro-credentials an essential way for individuals to stay current with new developments in their field and acquire new skills throughout their careers (Lumina Foundation, 2019).

In another study conducted by Society for Human Resource Management in 2019, employers perceived micro-credentials as a valuable way for job seekers to demonstrate continued learning and professional development, with 79% of employers considering micro-credentials a critical factor in hiring decisions. Additionally, micro-credentials are seen as an affordable way to gain the necessary skills for new jobs, with 72% of employers agreeing. Having a job-relevant alternative credential is also seen as a way to increase an individual's chances of being hired, with 77% of employers agreeing. Employers also view micro-credentials as a way to quickly address skills gaps and demonstrate mastery of those skills to potential employers (SHRM, 2019). These findings highlight the importance of micro-credentials in validating and showcasing skills and knowledge in a rapidly evolving job market.

According to Graeme Owens, the Executive Vice-President for Canada at Keypath, micro-credentials play a crucial role in addressing the upskilling and reskilling needs that have arisen

in response to the pandemic and other changes (Owens, 2021). Owens argues that micro-credentials are well-suited for offering targeted and specific skills training to meet these needs, particularly for working learners already established in their careers. Community colleges are being called upon to establish a micro-credentialing structure that will allow job seekers to showcase their skills to meet the need for authentic skills validation. At the same time, employers can assess and align the applicant's skill level to the job requirements (Dobson, 2022).

A qualitative case study by Gauthier (2020) interviewed twenty-two industry professionals from various sectors to understand their perception of micro-credentials value. The results showed that industry professionals value competency and experience more than a college degree. Participants noted that recent graduates often struggle to apply their college knowledge to the field. For instance, participants reported expecting a digital badge in curriculum competency for a curriculum specialist role. Therefore, a micro-credential would validate the applicant's content expertise in the relevant field. Many participants indicated that they would prefer to employ individuals who have validated experience through digital badging or other credentials and that employers would be willing to offer tuition reimbursement rather than hiring directly from a college program (Gautheir, 2020). These findings suggest that micro-credentials validate an individual's expertise and experience in a specific field and that employers may value these credentials over traditional college degrees.

In collaboration with BHER, the Higher Education Quality Council of Ontario surveyed 201 Canadian employers between December 12, 2020, and January 18, 2021, to understand their perceptions of the value and use of micro-credentials in the workforce. The results indicated that approximately 60% of respondents believed that micro-credentials could increase their confidence in the prospective employee's skills. Furthermore, approximately two-thirds of the respondents stated that they would view micro-credentials favorably if they were directly relevant to the job, competency-based, and accredited. The findings also showed that employers prefer competency-based micro-credentials that respond to industry or community needs (Pichette et al., 2021). These results suggest that employers perceive micro-credentials as a valuable tool for job candidates to showcase their skills and competencies and are open to considering micro-credentials as part of the hiring process.

According to a global survey conducted by Dynata, micro-credentials are valued by students and employers to document job-relevant skills and experience (Ikonomou, 2023). The survey polled 3,600 students and employers across eight countries and found that 92% of employers globally agreed or strongly agreed that a professional certificate strengthens a candidate's job application. On average, employers were 76% more likely to hire a candidate who has earned an industry micro-credential. In the U.S., among the 150 US employers surveyed, 86% agreed that earning an industry micro-credential strengthens a candidate's job application, and 74% believed that micro-credentials improve a candidate's ability to perform in an entry-level position (Ikonomou, 2023). These results highlight micro-credential potential as a tool for employers to assess job readiness and diversify their hiring pipelines.

However, not all employers' perceptions of micro-credentials were positive. The EdSurge article from 2018 focused on how employers perceive online graduate certificates, including micro-credentials (Young, 2018). The article suggests that while online graduate certificates

and micro-credentials are becoming increasingly popular, some employers may still be skeptical of their value. The article cites a survey from Northeastern University, which found that while 80 percent of employers believe that online degrees are as reputable as traditional degrees, only 61 percent felt the same about graduate certificates. The article also points out that some employers may be more impressed by credentials from well-known universities. In contrast, others may be more interested in the specific skills and competencies demonstrated by the credential (Knerl, 2019).

In conclusion, research shows that digital micro-credentials have emerged as a valuable means for learners to acquire recognition for essential workplace skills and knowledge. Employers see micro-credentials as a valuable way for job seekers to demonstrate continued learning and professional development and to address skills gaps. However, some employers still need to be convinced of their value, and there is a perception that credentials from well-known universities carry more weight. Nevertheless, micro-credentials have the potential to diversify hiring pipelines and assess job readiness. As the workforce evolves, micro-credentials will likely play an increasingly significant role in recognizing and validating essential skills and knowledge.

3.0 THEORY AND RESEARCH APPROACH

This study employed grounded theory, a fitting approach for exploring and explaining a phenomenon, especially when existing theories are inadequate. The study utilized this approach to derive a theory from data that explains the perspectives of industry professionals regarding post-secondary micro-credentials. Given that post-secondary micro-credentials are a new and under-researched phenomenon, the grounded theory approach was highly relevant and practical for generating a theory based on data from industry professionals' comments and discussions on LinkedIn. The method would consider individual experiences and capture process complexities within a specific context, which enables the development of a theory grounded in the data and tailored to the specific context of industry professionals concerning post-secondary micro-credentials (Creswell & Guetterman, 2021, pp. 434-435).

4.0 METHODS

Grounded theory design is a qualitative research method that aims to generate a theory from collected data (Creswell & Guetterman, 2021, p. 435). Qualitative research is suitable for exploring individuals' views, attitudes, and beliefs about a phenomenon that cannot be measured quantitatively, making it the most appropriate approach for this research (Creswell & Guetterman, 2021, p. 205). To analyze the data collected from industry professionals' comments and discussions on LinkedIn, the study used the NVivo qualitative software program. The methods involved identifying high-frequency words, creating codes and themes based on them, referencing the code words in their raw context and crucial sentences, and constructing a word tree to visually represent the theme (Creswell & Guetterman, 2021). Using these methods, the study could gain a comprehensive understanding of the perspectives and attitudes of industry professionals toward post-secondary micro-credentials. The grounded theory design approach and the use of the NVivo software program allowed for a rigorous and systematic data analysis, resulting in reliable and valid findings grounded in the data (Charmaz, 2014).

4.1 Participants

This study employed the grounded theory methodology, utilizing theoretical sampling as an essential aspect of this methodology to generate a theory relevant to the research objective. Using theoretical and random sampling techniques ensured that the sample was representative and the data collected was relevant. The researchers used theoretical sampling to select LinkedIn posts that contained information relevant to the theory and then employed random sampling to ensure that the sample represented various sectors. These sampling techniques allowed the researchers to generate a theory grounded in the data and tailored to the specific context of industry professionals' perspectives on post-secondary micro-credentials (Charmaz, 2014; Creswell & Guetterman, 2021, p. 443).

To ensure the data collected was relevant to the research objective and theory generation, this study only included LinkedIn posts written by industry professionals and excluded students, micro-credential providers, and profiles with unclear professional affiliations. By integrating theoretical and random sampling, the study could select a representative sample of LinkedIn posts written by industry professionals from various sectors. This approach allowed the researchers to generate a theory grounded in the data and tailored to the specific context of industry professionals' perspectives on post-secondary micro-credentials, as only the opinions and experiences of industry professionals were considered.

4.2 Data sources

The researchers employed theoretical sampling to identify a sample of 45 LinkedIn posts written by industry professionals representing various industries, which met the selection criteria of being no older than five months and containing at least 100 words. The sample was then reduced to 15 posts through random sampling, selecting every third post from the original pool of 45. The use of random sampling was crucial in ensuring the sample's representativeness, allowing for generalizations about the population based on the sample (Cochran, 1977). Using theoretical and random sampling allowed the researchers to generate a theory grounded in the data and tailored to industry professionals' specific context regarding post-secondary micro-credentials (Creswell & Guetterman, 2021).

4.3 Data analysis

To facilitate text data analysis, this study utilized an online version of NVivo for text mining. A directory, "Micro-Credentials Entry," was established, and fifteen different files were transferred to an online repository, which was then imported into the online version of NVivo. The data analysis began with a word frequency query to produce a word cloud comprising 100 words. The four most frequently occurring words were selected to ascertain the primary and secondary themes of the research results. These themes were then presented as four discrete phenomena, and to visualize them, word trees were constructed for each phenomenon employing the selected keywords (Creswell & Guetterman, 2021).

5.0 RESULTS

Grounded theory was a viable approach for this research since it allowed for an inductive approach to explore the attitudes and perceptions of industry professionals towards post-secondary micro-credentials, a topic for which little is known (Creswell & Guetterman, 2021, p. 435). By analyzing discussions and comments on LinkedIn, this study provided valuable
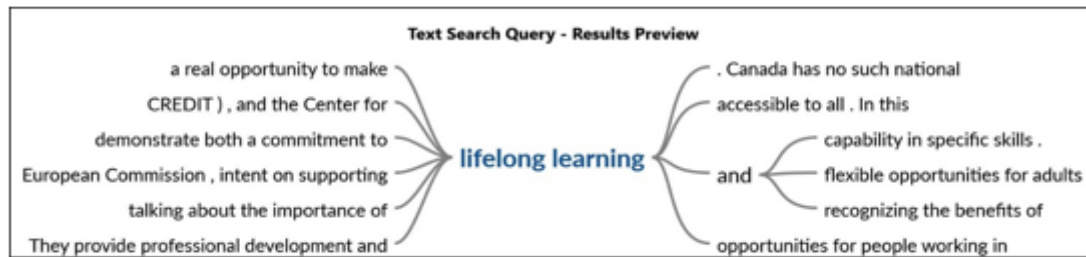
insights into the views of industry professionals and identified patterns and themes that could inform the development and implementation of micro-credential programs. The use of grounded theory also facilitated the development of a comprehensive understanding of the topic, providing insights into the value of micro-credentials in the labor market.

5.1 An Overall Look at the Word Frequency

In this study, the results section was guided by a word frequency query function performed using NVivo on the 15 selected posts by the researchers. The resulting word cloud displayed keywords used most frequently and served as a guide for the subsequent data analysis.

Figure 1 presented the resulting word cloud and was a visual aid to guide the subsequent data analysis

Figure 1 Word Cloud - Micro-Credentials

Phenomenon #1 - Micro-Credentials as a Tool for Learning

The study's results revealed that "learning" was a recurring theme in the selected LinkedIn discussions and posts, with a frequency of over 140 occurrences. However, the word "learning" is associated with several areas, including digital, competency-based, and lifelong learning. As a result, the emergent theme of "Micro-Credentials as a Tool for Learning" was identified, encompassing sub-themes such as "Micro-Credentials as a Tool for Lifelong Learning," "Micro-Credentials as a Tool for Personalized Learning," "Micro-Credentials as a Tool for Competency-based Learning." The research findings indicate that employers consider micro-credentials a valuable tool for lifelong learning, allowing individuals to acquire new skills and knowledge, adapt to changes in their profession, and remain competitive in the job market.

(1) Micro-Credentials as A Tool for Lifelong Learning

The theme of "Micro-Credentials as A Tool for Lifelong Learning" underscores micro-credentials capacity to facilitate continual learning and skills development throughout an individual's professional life. Selected LinkedIn posts reveal that employers see micro-credentials as an excellent opportunity for lifelong learning, offering a flexible and accessible way to acquire new skills and knowledge. The word tree in Figure 2 represents the sub-theme of lifelong learning.

Figure 2 Micro-Credentials As A Tool For Lifelong Learning

The following are the direct quotes from the samples' LinkedIn postings related to the subtheme.

"Micro-credentials represent a real opportunity to make lifelong learning accessible to all."

"Micro-credentials are a response to the need to upskill existing employees and reskill people looking for work or unemployment. They provide professional development and lifelong learning opportunities for people working in the gig economy or a sole proprietorship."

"Micro-credentials are "add-on" skills and competencies to these "base" qualifications that demonstrate both a commitment to lifelong learning and capability in specific skills."

"People who are genuinely interested in micro-credentials are more likely to be lifelong learners who distinguish themselves by having a growth mindset."

"Micro-credentials support lifelong learning and flexible opportunities for adults to upskill and reskill."

"Business leaders are talking about micro-credentials as an important factor of lifelong learning."

(2) Micro-Credentials as A Tool for Personalized Learning

In micro-credentials, personalized learning refers to the intentional and self-directed acquisition of knowledge, skills, and competencies through pursuing and attaining micro-credentials (Hunt et al., 2020). Micro-credentials allow individuals to develop specific skills and competencies flexibly and personally, tailoring their learning experiences to their unique needs and interests and taking control of their learning and career development (Hall-Ellis, 2016). Selected LinkedIn posts reveal that employers perceive micro-credentials as a means for individuals to engage in personalized, continuous learning, improving their knowledge and skills in a specific area and ultimately enhancing their career prospects. The word tree in Figure 3 represents the sub-theme of personalized learning.

Figure 3 Micro-Credentials as a Tool for Personalized Learning

The following are the direct quotes from the samples' LinkedIn postings related to the subtheme.

"Micro-credentials provide professional development and lifelong learning opportunities for people working in the gig economy or a sole proprietorship. Furthermore, they can be used to enhance personal learning and support the learning agendas of individuals, teams, or communities."

"Participants seek from micro-credentials the ability to map a personal learning program by mixing and matching opportunities from different providers to create a unique program of study."

"Micro-credentials learners also seek specific skills related to current or future occupational intentions and personal interests and passions."

"Micro-credentials provide meaningful, personalized education to ensure workers are equipped to perform the work that must be done now."

"In a world where new forms of contribution are valued, micro-credentials offer more personalized, practical, applied, and nimble learning opportunities."

(3) Micro-Credentials as A Tool for Competency-based Learning

In the context of micro-credentials, competency-based learning is achieved through a cycle of learning, assessment, and validation (Hunt et al., 2020). Learners acquire knowledge and skills through various learning activities, then demonstrate mastery of those competencies through rigorous assessment and evaluation, often through performance-based tasks, projects, or exams. Finally, validating those competencies comes in a micro-credential, a digital badge or certificate that can be shared and verified across multiple platforms. Selected LinkedIn posts suggest employers prioritize acquiring competency-based skills and knowledge through micro-credentials. The word tree in Figure 4 represents the sub-theme of competency-based learning.
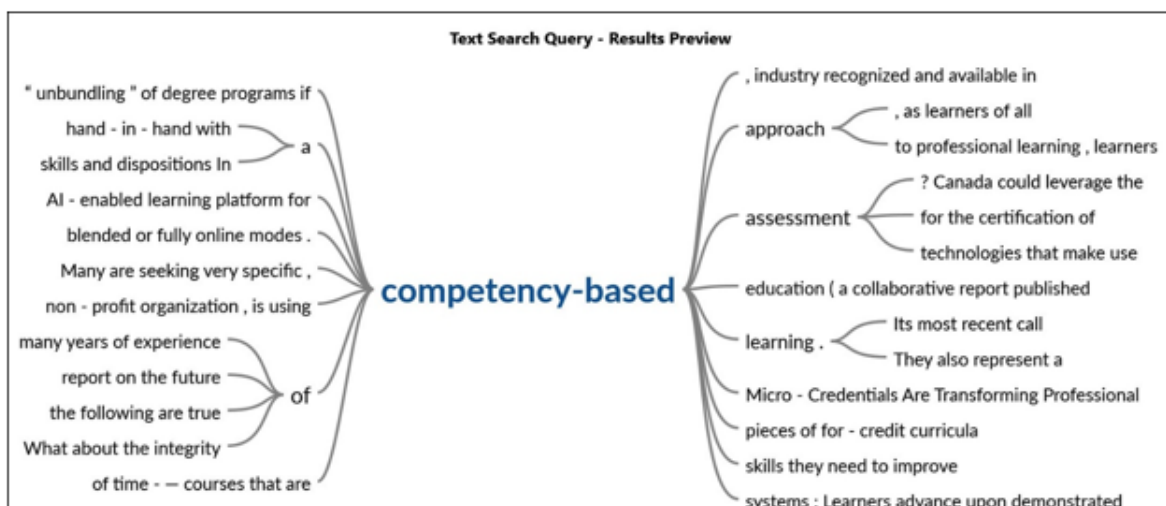
Figure 4 Micro-Credentials As A Tool For Competency-based Learning

The following are the direct quotes from the samples' LinkedIn postings related to the subtheme.

"Employers seek different outcomes from micro-credentials such as smarter recruitment through competency-based hiring."

"Micro-credentials' modular, stackable credentials target racialized peoples and people with essential skills gaps for competency-based learning."

"Many micro-credential learners are seeking very specific, competency-based skills they need to improve their performance and profile in their current or intended future work."

"Micro-credentials represent a significant blurring of the lines between credit and non-credit created by the pandemic and other factors. They are helping shift the focus, especially at the college level, from long-form to short-form skills-based work and are building on many years of the competency-based learning experience."

"Micro-credentials represent a challenge for colleges and universities since they are offered over short periods; they are competency-based, industry-recognized, and available in blended and online formats."

"To put micro-credentials in a broader context, it is important to note that they go hand-in-hand with a competency-based approach, as learners of all ages advance to higher levels of learning when they demonstrate mastery of concepts and skills regardless of time, place or pace."

Phenomenon #2 – The Role of Micro-Credentials in Addressing the Skills Gap

The study results indicated that "skills" was a recurring theme in the selected LinkedIn discussions and posts, with a frequency of over 150 occurrences. However, the word "skills" was associated with several areas, including upskilling and reskilling. Consequently, the emergent theme of "The Role of Micro-Credentials in Addressing the Skills Gap" was identified, which encompasses sub-themes such as "The Role of Micro-Credentials in Upskilling" and "The Role of Micro-Credentials in Reskilling." The study suggests that micro-credentials are perceived as having the potential to effectively address the skills gap by providing flexible, accessible, and targeted training opportunities.

(1) The Role of Micro-Credentials in Upskilling

Upskilling refers to acquiring new skills or enhancing existing ones to meet the demands of a changing job market or advance in a career (Desmarchelier & Cary, 2022). In many industries, upskilling is becoming increasingly important as technology advances, and new skills are required for success. The following selected posts from LinkedIn demonstrate that employers regard micro-credentials as a means for learners to exhibit their proficiency in newly developing fields and a resource for identifying and hiring individuals possessing the requisite

skills. The sub-theme of "The Role of Micro-Credentials in Upskilling" is represented by Figure 5's word tree.
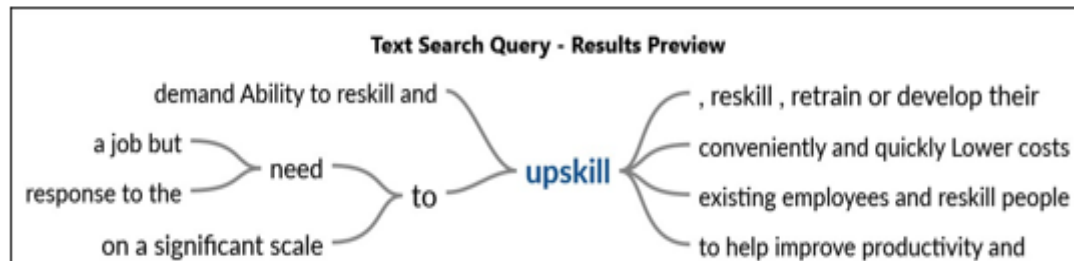

Figure 5 Role of Micro-Credentials in Upskilling

The following are the direct quotes from the samples' LinkedIn postings related to the subtheme.

"One way to accelerate and support learning is with continuous upskilling through micro-certification, which is best thought of as learning that happens in smaller "chunks" — such as boot camp training, an online course from a university or other provider, or even an apprenticeship."

"Micro-credentials are mainly geared toward people who have a job but need to upskill to help improve productivity and performance."

"To better prepare for the future, learners engage in learning activities on a significant scale to upskill, reskill, retrain or develop their knowledge, understanding, and capabilities — and micro-credentials can be helpful as a relatively quick and affordable path to do these things."

"To better prepare for the future, learners engage in learning activities on a significant scale to upskill, reskill, retrain or develop their knowledge, understanding, and capabilities — and micro-credentials can be helpful as a relatively quick and affordable path to do these things."

(2) The Role of Micro-Credentials in Reskilling

Reskilling is learning new skills or retraining for a new job or career. It is an essential aspect of upskilling, which aims to prepare workers for the changing job market by developing new skills that align with evolving job requirements (Desmarchelier & Cary, 2022). With micro-credentials, individuals can identify and address gaps in their skill sets, acquire new skills and knowledge, and demonstrate their abilities to potential employers. As such, micro-credentials can facilitate the reskilling process and help individuals adapt to the changing demands of the job market. The following selected posts from LinkedIn indicate that employers recognize the critical role micro-credentials play in reskilling by allowing individuals to obtain specific skills and competencies required for a new career or job. The sub-theme of "The Role of Micro-Credentials in Reskilling" is represented by Figure 6's word tree.
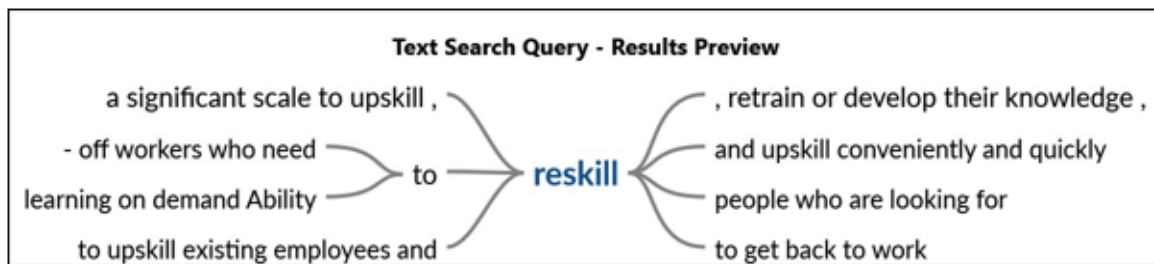
Figure 6 The Role of Micro-Credentials in Reskilling

The following are the direct quotes from the samples' LinkedIn postings related to the subtheme.

"Micro-credentials are also being developed to support lifelong learning and flexible opportunities for adults to upskill and reskill."

"Micro-credentials are seen as a response to the need to upskill existing employees and reskill people looking for work or who are unemployed."

"Different participants seek different outcomes from micro-credentials for the ability to reskill and upskill conveniently and quickly."

"Anyone can study to earn micro-credentials, but they are mainly geared toward Unemployed or laid-off workers who need to reskill to get back to work with skills that are in demand."

Phenomenon #3 - The Significance of Micro-Credentials in Delivering Accessible Learning Opportunities

The study found that "access" was a recurring theme in the selected LinkedIn discussions and posts, with a frequency of over 60 occurrences. However, the word "access" was associated with several areas, including short, focused, and affordable. Consequently, the emergent theme of "The Significance of Micro-Credentials in Delivering Accessible Learning Opportunities" was identified, encompassing sub-themes such as "The Significance of Micro-Credentials in Delivering Short-term Learning Opportunities," "The Significance of Micro-Credentials in Delivering Focused Learning Opportunities," and "The Significance of Micro-Credentials in Delivering Affordable Learning Opportunities." The study showed that micro-credentials are perceived as valuable tools by employers for providing flexibility, affordability, and convenience, which enable the delivery of learning opportunities to a broader spectrum of learners who may face financial or logistical barriers to pursuing traditional degrees or certifications.

(1) The Significance of Micro-Credentials in Delivering Short-Term Educational Opportunities

In micro-credentials, focused learning refers to educational programs narrow and specific focus. Micro-credentials are designed to teach specific skills and competencies, enabling learners to acquire targeted knowledge directly applicable to their jobs or careers. The following selected posts from LinkedIn indicate that employers perceive micro-credentials as

valuable tools for focused learning. They allow learners to develop highly relevant skills for their job functions. The sub-theme of "The Significance of Micro-Credentials in Delivering Focused Learning Opportunities" is represented by Figure 7's word tree.
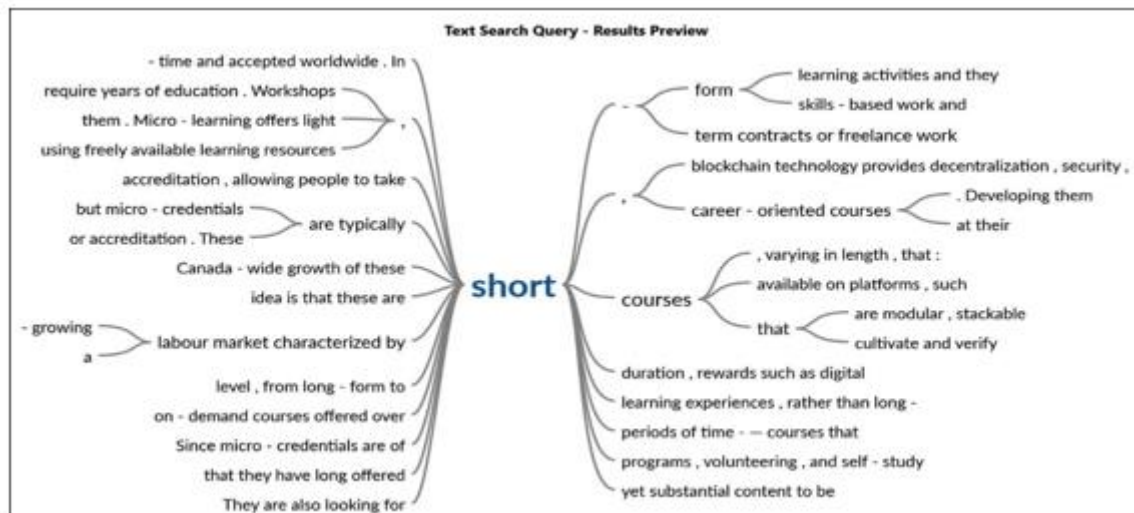

Figure 7 The Role Of Micro-Credentials In Providing Short-Term Educational Opportunities

The following are the direct quotes from the samples' LinkedIn postings related to the subtheme.

 "The notable feature of these developments is that some learners are leveraging learning platforms that are on demand" systems. They also seek short learning experiences rather than long-form credentials and want flexibility."

"Micro-credentials represent a significant blurring of the lines between credit and non-credit created by the pandemic and other factors. They are helping shift the focus, especially at the college level, from long-form to short-form skills-based work and are building on many years of the competency-based learning experience."

"Micro-credentials represent a challenge for colleges and universities since on-demand courses offered over short periods -— courses that are competency-based, industry-recognized and available in blended and online formats — all require a rethink in terms of some aspects of the institutions' business models."

"These programs [micro-credentials] attract students because they are short, modular, stackable and shareable—mostly online and self-directed—focusing on very specific aptitudes and skills evaluated and validated by industry members."

"Micro-credentials allow people to take short, career-oriented courses at their own time and pace."

(2) The Significance of Micro-Credentials in Delivering focused Learning Opportunities

Focused learning opportunities refer to targeted and tailored learning experiences designed to address specific skills gaps and prepare learners for job roles (Che Ahmat et al., 2021). Micro-credentials are well-suited for delivering focused learning opportunities because they are typically shorter in duration and more narrowly focused than traditional degree programs or certifications (Woods & Woods, 2021). This allows learners to quickly gain the skills and knowledge they need to succeed in a specific job or industry without investing significant time or money in a full degree program. The following selected posts from LinkedIn highlight that employers see micro-credentials as an effective tool for addressing the specific needs of individuals seeking to acquire targeted skills or knowledge in a particular area. The sub-theme of "The Significance of Micro-Credentials in Delivering Focused Learning Opportunities" is represented by Figure 8's word tree.
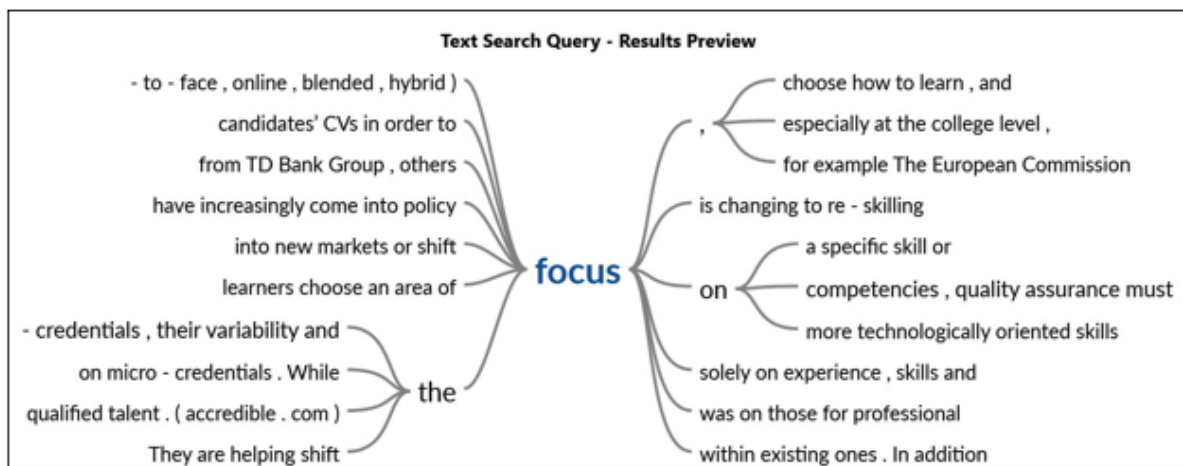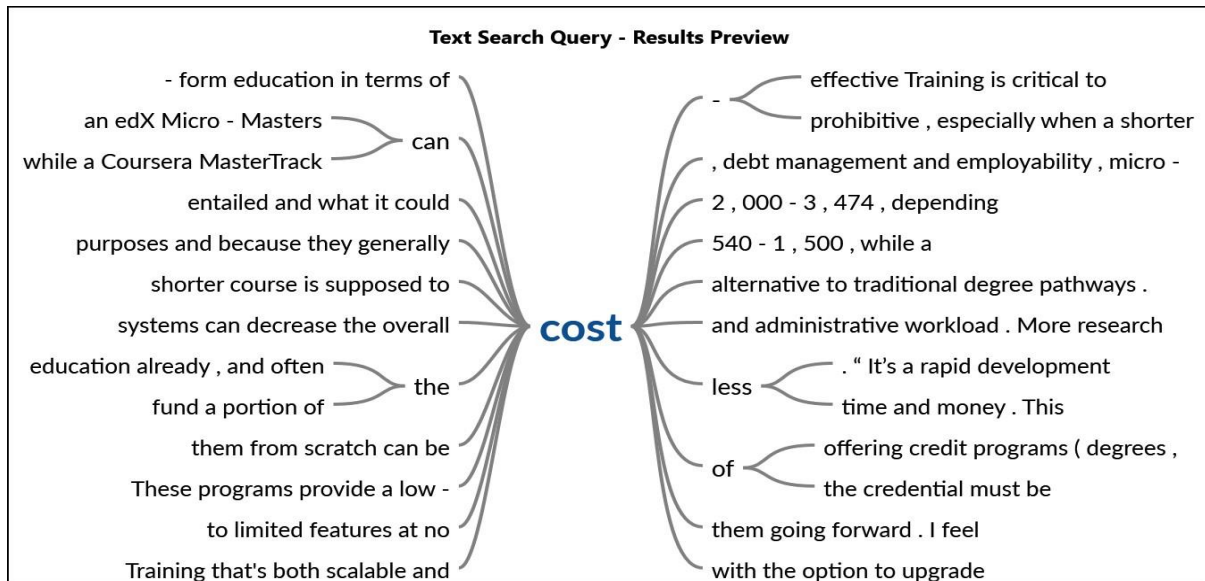

Figure 8 The Significance of Micro-Credentials in Delivering focused Learning Opportunities

The following are the direct quotes from the samples' LinkedIn postings related to the subtheme.

"Micro-credentials are typically short courses, varying in length that focus on a specific skill or capability in a specific field such as health care, technology, business."

"Micro-credentials are focused opportunities for reskilling in areas of high unemployment."

"These are typically short courses that are modular, stackable and shareable—mostly online and self-directed—focusing on specific aptitudes and skills evaluated and validated by industry members."

"Micro-credentials are particularly useful for companies that want to expand into new markets or shift focus within existing ones."

"Micro-credentials provide laser-focused education without general education in the mix."

(3) The Significance of Micro-Credentials in Delivering Affordable Learning Opportunities

Micro-credentials offer short, focused courses that can be completed at a fraction of the cost of a full degree, making them an accessible option for learners seeking flexible and affordable learning opportunities (McCartney & Rick, 2022). Selected posts from LinkedIn indicate that employers also view micro-credentials as a way for employees to gain new skills and knowledge without incurring high financial costs, benefiting both the individual and the organization. The sub-theme of "The Significance of Micro-Credentials in Delivering Affordable Learning Opportunities" is represented by Figure 9's word tree.

Figure 9 The Significance of Micro-Credentials in Delivering Affordable Learning Opportunities

The following are the direct quotes from the samples' LinkedIn postings related to the subtheme.

"Outcomes from micro-credentials include Lower costs for learning, enabled by tax credits."

"micro-credentials support Lower costs to deployment than degrees or diplomas."

"As students question the value of long-form education in terms of cost, debt management, and employability, micro-credentials look to be an alternative to skills-based learning for employment: cheaper, faster, and stackable."

"For many learners, acquiring and verifying skills and knowledge are the two main motivators for enrolling in micro-credentialing programs, usually for professional purposes and because they generally cost less time and money."

"The most effective solutions to this challenge are scalable training programs such as micro-credentialed learning, which provide a low-cost alternative to traditional degree pathways."

Phenomenon #4 – The Role of Micro-Credentials in Credentialing Learning Achievements

The study's results show that "credentials" was a prevalent theme in the selected LinkedIn discussions and posts, with a frequency of over 315 occurrences. However, the word "credentials" is associated with validation and badge, among other areas. As a result, the emergent theme of "The Role of Micro-Credentials in Credentialing Learning Achievements" was identified, which includes sub-themes such as "The Role of Micro-Credentials in Validating Learning Achievements" and "The Role of Micro-Credentials in Awarding Learning Achievements with Badges." The research findings suggest that employers perceive micro-credentials as a means of verifying and showcasing the knowledge and skills that individuals have acquired, providing tangible evidence of their accomplishments.

(1) The Role of Micro-Credentials in Validating Learning Achievements

In the context of micro-credentials, validation refers to verifying and authenticating the skills, knowledge, and competencies an individual has acquired through pursuing and attaining a micro-credential (McGreal et al., 2022). For example, the American Council on Education (A.C.E.) has developed the Credly platform, allowing learners to earn digital badges representing their mastery of skills and knowledge in various areas. Employers often accept these badges as evidence of an individual's learning achievements and can help individuals stand out in a competitive job market (Credly, 2023). The selected posts from LinkedIn indicate that employers consider micro-credentials and digital badges a reliable and efficient method to validate and exhibit an individual's learning achievements. The sub-theme of "The Role of Micro-Credentials in Validating Learning Achievements" is represented by Figure 10's word tree.
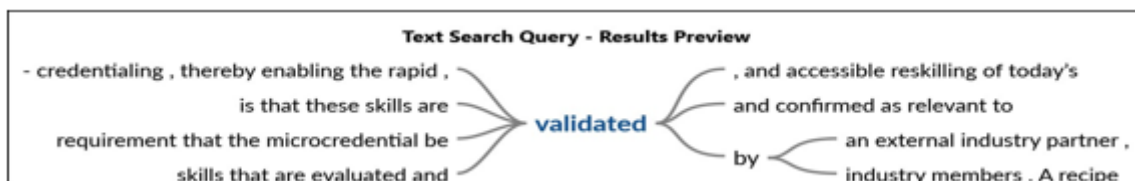

Text Search Query - Results Preview

- credentialing , thereby enabling the rapid ,
is that these skills are
requirement that the microcredential be
skills that are evaluated and
→ **validated**
, and accessible reskilling of today's
and confirmed as relevant to
by — an external industry partner ,
industry members . A recipe

Figure 10 The Role of Micro-Credentials in Validating Learning Achievements

The following are the direct quotes from the samples' LinkedIn postings related to the subtheme.

"As the certification and validation of skills are in greater demand than ever—especially for adult learners already in the workforce—micro-credentials are redefining themselves to be competitive and remain relevant."

"A growing number of employers are partnering with educational providers to identify critical job skills and close skills gaps through micro-credentialing, thereby enabling the rapid, validated, and accessible reskilling of today and tomorrow's workforce."

"These short courses [micro-credentials] are modular, stackable and shareable—mostly online and self-directed—focusing on specific aptitudes and skills evaluated and validated by industry members."

"What is important is that micro credentials' skills are validated and confirmed as relevant to the job."

"Organizations are exploring using micro-credentials to validate specific competencies that students may pick up within regular for-credit courses, work-integrated learning or even co-curricular activities."

(2) The Role of Micro-Credentials in Awarding Learning Achievements with Badges

Micro-credentials, often awarded as digital badges with embedded metadata, serve as reliable and credible visual representations of an individual's knowledge and skills. According to Rieder (2022), the metadata in badges makes them more credible than traditional resumes or transcripts. Badges also motivate students, as they provide a tangible representation of their achievements (Che Ahmat et al., 2021). The use of badges to assess an individual's skills and competencies is becoming more prevalent among employers, as they offer a quick and efficient way to evaluate a candidate's learning achievements. This is evident from the selected LinkedIn posts highlighting the value of badges in representing learning achievements. The sub-theme of "The Role of Micro-Credentials in Awarding Learning Achievements with Badges" is illustrated by Figure 11's word tree.
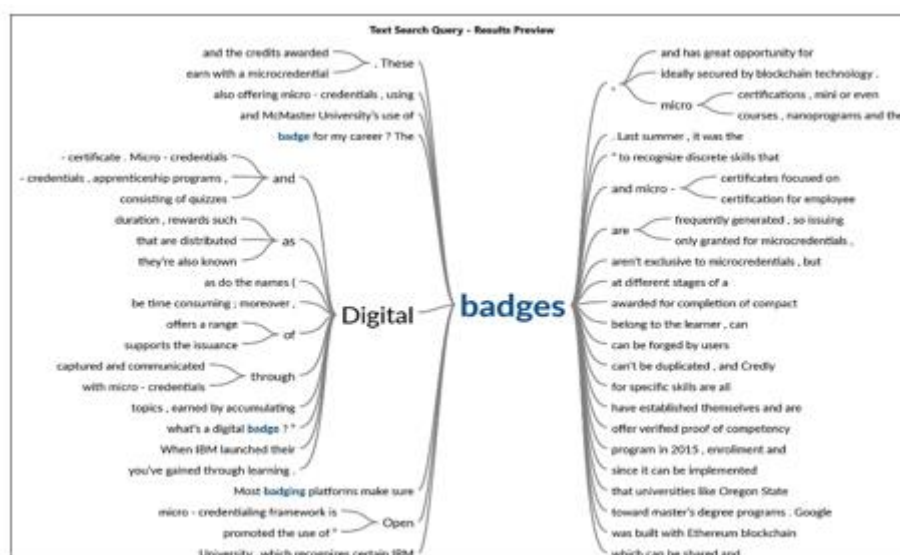

Figure 11 The Role of Micro-Credentials in Awarding Learning Achievements with Badges

The following are the direct quotes from the samples' LinkedIn postings related to the subtheme.

"Evidence of the acquisition of skills is contained in the digital badge, along with the name of the badge holder, the achievement of the learning outcomes, the evaluation methods used, the accrediting bodies, and, where applicable, the level of the qualifications framework and the credits awarded."

"These badges belong to the learner, can be shared, are portable, and can be combined to form more advanced qualifications or accreditation."

"People take short, career-oriented courses at their own time and pace. Learners are thereby awarded micro-credentials through digital badges that can be shared and verified online."

"Micro-credentials and digital badges have established themselves and are in wide practice already."

"When competency in a specific knowledge area or skill is demonstrated, a micro-certification is issued, which can be listed on a resume or displayed as a "badge" or a mastery credit on an online profile. Over time, individuals can amass portfolios of competencies that characterize their capabilities in a way that is much more relevant to their professional lives than relying solely on academic credentials."

6.0 DISCUSSION

The value of micro-credentials in today's industry is increasingly recognized due to their targeted, flexible, and accessible approach to learning. This approach is fundamental in a constantly evolving job market, where individuals must acquire new skills and knowledge to stay competitive. Therefore, it is not surprising that the research findings align with the current trend in the industry.

6.1 Micro-Credentials as a Tool for Learning

The selected discussions and posts revealed a recurring learning theme, leading to the emergent themes of lifelong, personalized, and competency-based learning. Employers perceive micro-credentials as valuable tools for lifelong learning, allowing individuals to acquire new skills and knowledge, adapt to changes in their profession, and remain competitive in the job market. Micro-credentials also provide flexible, personalized learning opportunities that enable individuals to tailor their learning experiences to their needs and interests. Competency-based learning is a repeated theme in the posts, emphasizing the value employers place on the learning, assessment, and validation cycle through which individuals acquire and demonstrate mastery of specific competencies. The study's results suggest employers prioritize acquiring competency-based skills and knowledge through micro-credentials.

The findings for Human Resource Management research in 2019, which found that most employers consider micro-credentials an excellent way to demonstrate continued learning and professional development, support our findings. The results are also aligned with the Higher Education Quality Council of Ontario's outcomes, indicating that the majority of respondents reported that micro-credentials would boost their confidence in the prospective employee's skills and that they prefer competency-based micro-credentials that respond to industry or community needs (Pichette et al., 2021).

6.2 The Role of Micro-Credentials in Addressing the Skills Gap

The study results indicated that "skills" was a recurring theme in the selected discussions and posts. Employers view micro-credentials as valuable tools for addressing the skills gap by offering flexible, accessible, and targeted training opportunities to help individuals and organizations stay competitive in the rapidly changing job market. The sub-theme of "Upskilling" emphasizes the importance employers place on upskilling, while the sub-theme of "Reskilling" highlights the significance of reskilling. The results demonstrated that employers perceive micro-credentials as an effective means for learners to exhibit their

proficiency in newly developing fields and a resource for identifying and hiring individuals possessing the required skills.

The findings suggest that micro-credentials have the potential to effectively address the skills gap by providing flexible, accessible, and targeted training opportunities.

The results of the research discussion align with reviewed research that highlights the importance of micro-credentials in addressing the skills gap and enhancing professional development. For example, most employers consider micro-credentials a good way to demonstrate continued learning and professional development, boosting their confidence in prospective employee skills. This theme is supported by the Lumina Foundation's survey, which found that employers view micro-credentials as an essential way for individuals to stay up to date with new developments in their field and acquire new skills throughout their careers (Lumina Foundation, 2019). The research discussion and literature review also emphasize micro-credentials' potential to address the skills gap effectively by providing flexible, accessible, and targeted training opportunities. The Higher Education Quality Council of Ontario's survey found that employers favor competency-based micro-credentials that respond to industry or community needs (Pichette et al., 2021). The research discussion and literature review also support this idea through Gautheir's qualitative case study, which found that many employers value validated experience, via digital badging or other credentials, over a college degree (Gautheir, 2020).

6.3 The Significance of Micro-Credentials in Delivering Accessible Learning Opportunities

The study's findings underscored the significance of micro-credentials in delivering accessible learning opportunities to individuals who face financial or logistical barriers or lack access to traditional education. The emergent theme of "Accessible Learning Opportunities" encompassed sub-themes such as short-term, focused, and affordable learning opportunities. Employers perceive micro-credentials as effective tools for addressing the specific needs of individuals seeking to acquire targeted skills or knowledge in a particular area, as highlighted by the sub-theme of focused learning opportunities. They recognize the value of micro-credentials in providing flexibility, affordability, and convenience in the delivery of learning opportunities and in enhancing individuals' employability and career prospects. From an employer perspective, micro-credentials offer short-term, focused, and affordable learning opportunities that can enhance employees' skills and knowledge without requiring a long-term commitment.

The finding is that micro-credentials offer short-term focused and affordable learning opportunities that align with the literature review in several areas, including the perception of micro-credentials as a tool for addressing specific skills gaps, the suitability of micro-credentials for the working learner seeking short-term, flexible learning opportunities, and the emergence of micro-credentials as an affordable alternative to traditional educational programs that can be completed at a fraction of the cost of a full degree (Lumina Foundation, 2019; Owens, 2021), suggesting that micro-credentials are perceived as a tool for short term affordable learning options.

6.4 The Role of Micro-Credentials in Credentialing Learning Achievements

The study's findings highlight micro-credentials' role in credentialing learning achievements, a recurring theme in the selected discussions and posts. Employers perceive micro-credentials as a reliable and efficient means of validating and exhibiting an individual's learning achievements. They see digital badges as a visual representation of the knowledge and skills that an individual has acquired. The emergent theme of "Credentialing Learning Achievements" encompassed sub-themes such as validating learning achievements and awarding learning achievements with badges.

The sub-theme of validating learning achievements emphasized the importance of micro-credentials in verifying and authenticating the skills, knowledge, and competencies that an individual has acquired. Employers perceive micro-credentials and digital badges as precise, reliable, and transparent records of an individual's skills, competencies, and achievements. The sub-theme of awarding learning achievements with badges highlights the importance of badges in representing an individual's learning achievements and providing a quick and efficient way for employers to assess a candidate's skills and competencies. Hence, they are seen by employers as a reliable and efficient means of validating and exhibiting an individual's skills and competencies, providing a visual representation of the knowledge and skills that an individual has acquired.

These findings are consistent with the literature, which suggests that badges can provide a completer and more detailed picture of an individual's skills and competencies than traditional resumes or transcripts (Perkins & Pryor, 2021). The study and the literature review demonstrate significant alignment in highlighting the critical role that micro-credentials and digital badges can play in validating and exhibiting an individual's skills and knowledge. The literature review emphasizes how micro-credentials can provide a more targeted and transparent way to measure learning outcomes and demonstrate competencies (McGreal & Olcott, 2022). Employers in the literature review and the study consider micro-credentials and badges as valuable tools for job candidates to showcase their skills and competencies (Pichette et al., 2021), and they believe that micro-credentials are a good way to demonstrate continued learning and professional development (Society for Human Resource Management, 2019). The study and the literature review suggest that badges can provide a completer and more detailed picture of an individual's skills and competencies than traditional resumes or transcripts (Rieder, 2022).

Furthermore, the study and the literature review emphasize the value of digital badges in representing an individual's learning achievements and providing a quick and efficient way for employers to assess a candidate's skills and competencies. The study highlights that employers see digital badges as a representation of the knowledge and skills that an individual has acquired. At the same time, the literature review indicates that micro-credentials and digital badges can document job-relevant skills (Ikonomou, 2023).

7.0 CONCLUSION

Micro-credentials have become increasingly important in today's industry due to their ability to offer targeted, flexible, and accessible learning opportunities. The study's findings indicate that industry professionals view micro-credentials as valuable tools for addressing the skills gap, providing accessible learning opportunities, and credentialing learning achievements.

Employers consider micro-credentials an effective means to address specific skills gaps by providing short-term, focused, and affordable learning opportunities to help individuals and organizations stay competitive in the rapidly changing job market. Employers also recognize micro-credentials' value in up skilling and reskilling employees, ensuring their proficiency in newly developing fields, and identifying and hiring individuals with the necessary skills. Moreover, employers are drawn to micro-credentials as they offer short-term, focused, and affordable learning opportunities that do not require a long-term commitment, making them a suitable option for employees looking for flexible learning opportunities that do not disrupt their work schedules or cause significant financial strain.

Additionally, employers view micro-credentials as a reliable and efficient means of validating and exhibiting an individual's skills and competencies. Digital badges provide a quick and efficient way for employers to assess a candidate's skills and competencies and offer a visual representation of the knowledge and skills that an individual has acquired.

The study's findings align with the literature, highlighting micro-credentials' significance in providing accessible learning opportunities, addressing the skills gap, and validating and exhibiting an individual's skills and competencies, mainly through digital badges. Employers prefer competency-based micro-credentials that respond to industry or community needs, indicating their importance in addressing the skills gap and preparing learners for specific job roles.

In conclusion, micro-credentials have become an essential tool for employers to address the rapidly changing job market and ensure their employees remain competitive. They offer targeted, flexible, and competency-based learning opportunities that enable employees to acquire new skills and knowledge efficiently. Micro-credentials also help employers identify and hire individuals with the necessary skills, provide a reliable and efficient means of validating and exhibiting an individual's skills and competencies, and offer a quick and efficient way to assess a candidate's skills and competencies.

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