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Letter from the Editor

Dear Colleagues,

We're experiencing a rapid shift in higher education with structural changes, advancement of artificial intelligence, shifting workforce expectations, and the needs of a new generation of learners. The push to evolve sometimes feels like it is coming at us faster than curriculum can match. Institutions are being called to reimagine how they teach and support students, not by abandoning academic rigor, but by expanding it to include the necessary experiences that prepare students for a developing future of work.

The need to hit this constantly moving target, albeit sometimes a bit overwhelming, leads to some phenomenal examples of innovation and advancement. Experiential learning encourages students to find exciting opportunities to upskill, to test their assumptions, and see themselves as active contributors in their education rather than a passive recipient. As an educator, watching the "light come on" for students as they identify what "success" and "career" means to them is always an exciting moment.

More than ever, I've noticed the pathway to create these "lightbulb" opportunities for students requires not only innovation, but collaboration – across disciplines, departments, and employers. As I read through the articles for this issue, I was excited to see the authors' willingness to listen, adapt, and build partnerships that pull from both their own expertise and a need for curiosity. Our authors explore experiential learning within the classroom, the impact of community-based learning with an intentional lens, how students are constructing their own meaning of work, and perspectives from employers on the role of GPA and micro-credentials.

I genuinely believe experiential learning continues to be one of the most powerful tools to prepare learners for their future careers. I encourage practitioners and educators to continue to model the importance of collaborative learning, to include the voices of students in their work, and to celebrate each moment of growth. I hope readers of this issue can both see themselves in the innovation shared as well as identify some opportunities to "turn on the lightbulb" in their own programs.

Sincerely,

Heather Nester, Editor in Chief

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What "Workforce-Driven" Means in Practice: How Ohio Employers and Higher Education Professionals Perceive Micro-Credentials

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ABSTRACT

As micro-credentials continue to gain momentum in higher education and workforce development, questions persist about their purpose, structure, and perceived value. This study explores how two critical stakeholder groups—employers and higher education professionals—understand micro-credentials, including what attributes they associate with quality and relevance. Using a statewide survey of 141 respondents in Ohio, this study investigates micro-credential familiarity, workforce alignment, and key concerns such as standardization, assessment rigor, and industry recognition.

Initial findings reveal that while both groups generally support micro-credentials as skills-verifying tools, familiarity is low, with only 10% of employers and 15% of higher education professionals reporting being "very familiar" with these programs. Limited standardization was a significant concern across both groups, leading to difficulty assessing credential quality. Still, more than half of both groups selected three or more micro-credential attributes essential to workforce alignment, indicating that stakeholders value multi-dimensional credential design.

These insights offer practical guidance for institutions designing experiential or skills-based credentials that meet the evolving needs of learners and employers in cooperative and career-focused education contexts.

WHAT "WORKFORCE-DRIVEN" MEANS IN PRACTICE: HOW OHIO EMPLOYERS AND HIGHER EDUCATION PROFESSIONALS PERCEIVE MICRO-CREDENTIALS

In 2018, the nonprofit organization Credential Engine began counting credentials across the United States, initially identifying more than 330,000 credentials across eight types (Credential Engine, 2022). By 2022, that number had grown to over one million credentials in 18 categories—an increase of more than 200% in just four years. During the same period, public confidence in higher education eroded sharply: in 2018, 48% of Americans reported "a great deal of confidence" in higher education, compared to only 36% in 2024, while the proportion reporting "very little" or "no" confidence doubled from 16% to 32% (Jones, 2025). When asked why, the most common response was that "students are not properly educated/colleges don't teach relevant skills." Part of the decline in confidence may be attributed to a shift in the definition of what constitutes "prope[r] education" and "relevant skills": roughly half of Americans now believe that the primary purpose of higher education is to develop specific workforce-readiness skills and competencies (Pew Research Center, 2016). Furthermore, 87% of

respondents in a separate survey said they expect to continue upskilling and reskilling beyond a degree program to meet workplace demands (Pew Research Center, 2016).

These shifts in public perception and demand coincide with changes in how people access and value learning. The rise of Massive Open Online Courses (MOOCs) from 2008 to 2012 demonstrated the public's appetite for on-demand, low-barrier learning opportunities (Costello et al., 2022). Yet, unlike formal degrees, MOOCs lacked an official record to showcase learning to employers. Digital badges emerged in the 2010s as a "digital representation of a learning outcome" (Janzow, 2014, p. 9), enabling learners to signal achievements. More recently, micro-credentials—often represented by digital badges—have proliferated. Amid this rapid growth, the lack of shared definitions and structures has created confusion for learners, employers, and higher education professionals. Institutions seeking to design high-quality, workforce-aligned credentials—especially those connected to cooperative or experiential learning—need clearer insight into how key constituents understand and evaluate micro-credentials.

This study explores how two key groups, higher education professionals and employers, understand and evaluate micro-credentials in Ohio. Specifically, it investigates the extent of their familiarity with micro-credentials, the attributes they consider essential for quality and workforce alignment, and their concerns regarding standardization, rigor, and relation to industry. By focusing on these dimensions, the study aims to provide insights that can guide institutions in designing experiential or skills-based credentials to better meet the evolving needs of modern learners and employers. To achieve this purpose, this study was guided by the following research questions:

1. How familiar are higher education professionals and employers across Ohio with micro-credentials?
2. What attributes of micro-credentials are deemed essential to quality and workforce alignment?
3. What concerns do these constituent groups have?

Literature Review

The concept of short-term credentials is undoubtedly not new. Certificates, badges, nano-degrees, MOOCs, and micro-credentials have become increasingly popular. The COVID-19 pandemic reignited the frenzy for short-term, verifiable credentials that could be completed predominantly online (Varadarajan et al., 2023). In addition, mass lay-offs throughout the pandemic and individuals voluntarily quitting during the Great Resignation further fueled career changes, with roughly half of those who changed employers also changing the industry or occupation of their employment (Kochhar et al., 2022). This combination of economic pressures and cultural shifts in attitudes toward work means that individuals seeking new employment must often develop new skill sets for the ever-changing world of work (Ositelu et al., 2021; Robinson, 2024).

These changes in learning and work have also influenced institutions of higher education. A 2023 Gallup poll found that confidence in higher education in the United States is at an all-time low of just 36% (Brenan, 2023). Fewer students are moving straight from high school to college—69% in 2018, down to 62% in 2021 (National Center for Education Statistics, 2023). This drop in enrollments is further exacerbated by the looming demographic cliff, where the number of young people coming through our high school systems is set to decline (Harvey, 2021). Individuals are also skeptical of the return on investment of higher education, with the student loan crisis ever looming (Binkley, 2023). Given these and other challenges, higher education institutions must develop creative and strategic ways to attract new students, including adult learners, to mitigate the loss of degree-seeking and straight-from-high-school college students (Clochard et al., 2022). Consequently, higher education institutions have begun to explore micro-credentials and other short-term programs to help meet workforce demands and maintain relevance in today's society.

Universities' embrace of micro-credentials is a recent but accelerating trend. A literature review conducted by Varadarajan et al. (2023) of published journal articles related to micro-credentials noted that over 70% of their included articles were published from 2020 to 2022. Despite reviewing 60 articles on the topic, Varadarajan et al. (2023) found a distinct lack of a shared definition of micro-credentials, with 20% of articles using terms like "digital badges," "MOOCs," and "micro-credentials" interchangeably. Likewise, in 2022, a snap poll conducted by The Online & Professional Education Association of university professionals (UPCEA) also found a lack of shared definitions, with roughly 31% of respondents calling their programs "micro"-credentials, 26% "alternative" credentials, and 19% "non-degree" credentials (Fong et al., 2023).

This lack of clarity on the definition of micro-credentials also appears to be a point of frustration for employers, where 80% have expressed concerns about the consistency

of micro-credential programs (Gauthier, 2020; Varadarajan et al., 2023). Without a sound definition, it is hard for employers to trust the programs and understand what someone knows and can do as a result of earning a micro-credential. This skepticism also holds for students who may be reluctant to invest in a program to upskill or reskill without understanding how it will benefit them (Maxwell & Gallagher, 2020).

Despite the concerns, state governments and other entities are making significant monetary investments in these short-term programs. In 2024, the Ohio Governor's Office of Workforce Transformation awarded $2.58 million through its Individual Microcredential Assistance Program (IMAP) to help low-income and unemployed Ohioans earn workforce-ready credentials (Ohio Governor's Office of Workforce Transformation, 2024). However, the quality and effectiveness of these programs and providers are not regularly assessed, which can cast doubt upon their outcomes. Yet, it is important to bear in mind that the accreditation of colleges began in much the same way. As the demand for higher education rose throughout the late 1800s and early 1900s, more selective institutions sought a way to differentiate themselves (Kelchen, 2017). These institutions voluntarily started engaging in an accreditation process, creating a system that required colleges to demonstrate academic competence and the needed resources for higher learning (Kelchen, 2017). A standardization and quality assurance process should also exist for micro-credentials and other short-term programs, particularly as state governments continue to invest in these initiatives. Additionally, establishing a standard definition for micro-credentials could help employers better understand what credential earners know and can be expected to do, building additional confidence in the educational system.

In a 2023 interview, James Fong, Chief Research Officer of UPCEA, highlighted a possible strength of these short-term credentials for retaining degree-seeking students in higher education, stating, "Gen Z and millennials are used to taking smaller, bite-size pieces. The 120-credit degree is such a big bite … but we've also got to reward people for accomplishments along the way" (D'Agostino, 2023, para. 18). Fong reinforces that micro-credentials are not a replacement for degrees but rather provide a way to break up and reward learning throughout a longer journey, helping students stay motivated and continue toward the end goal. However, it is also important to note that these short-term credentials cannot and should not be made in a vacuum. There are different demands to be met to ensure the micro-credentials meet the expectations of both students and industry.

As such, higher education institutions are being pressured to work with employers and other constituents to ensure that any micro-credentials developed align with workforce needs (Varadarajan et al., 2023). Employers say they are willing to jump in to help, with 68% of employers from a 2023 UPCEA poll stating they would like to be approached by a college to assist with developing short-term or non-credit credentials (D'Agostino, 2023; Fong et al., 2023). However, only about half (56%) indicated that a higher education institution (HEI) had ever approached them to do so, highlighting a disconnect between two major constituents in the micro-credential space (D'Agostino, 2023).

Moreover, employers are currently feeling skeptical about the outcomes of micro-credentials. The same UPCEA poll of 510 employers found that the most significant concerns about "non-degree or alternative credentials" were "unsure of the quality of education" (46%) and "unsure of skills and competencies acquired" (42%), further showcasing the confusion and skepticism about these short-term credentials (Fong et al., 2023, p.14). In fact, this survey also found that 65% of employers said they would like to see proof of program effectiveness (Fong et al., 2023). Employers are also confused and frustrated by micro-credentialing initiatives' lack of transparency and rigor (Gauthier, 2020). In Gauthier's interviews, employers "noted that the criteria for issuance must be rigorous and holistic to ensure that the microcredential being awarded holds value in the industry" (2020, p. 5).

Employers' reservations matter deeply because their trust is becoming increasingly crucial as short-term credentials continue to skyrocket and organizations move toward skills-based hiring (Coursera, 2022; Credential Engine, 2022; Maina et al., 2022; Varadarajan et al., 2023). Many national and international organizations, such as the U.S. Department of Labor (2024) and the European Commission (2022), have documented skills-based hiring trends. Part of this shift may be attributed to the skills gap, where recent college graduates may be perceived as struggling to apply what they have learned in the classroom to work:

> *[Degrees], in fact, leave out what and how students learned, and the skills and competencies they acquired within and beyond the walls of the university, which makes them inadequate to reflect the transferable skills needed in a changing workplace. As a consequence, they are becoming increasingly ineffective as a screening mechanism for recruiters (Maina et al, 2022, p. 3).*

In other words, degrees provide employers with the individual's final destination but not the journey itself. A degree conveys a significant milestone but does little to showcase the smaller segments that went into developing teamwork and communication skills, technical abilities, or knowledge of a specific subject. Micro-credentials could serve as a way to showcase intermediate achievements garnered along the way, helping employers better understand the diversity of skills and competencies potential employees have to offer. Thus, micro-credentials can assist many constituents, including learners, employers, and credentialing providers. However, some uncertainty about their value remains, setting the stage for this research study.

Theoretical Framework

Micro-credentials inhabit the intersection of three interest groups: students, employers, and higher education institutions. Each of these constituencies has its own motivations and priorities. Among the earliest frameworks for understanding students' educational choices was human capital theory, which rose to prominence in the postwar era as veterans pursued higher education with GI Bill benefits (Kelchen, 2017). Human capital theory holds that as demand rises for skilled labor, workers pursue additional educational credentials that allow them to meet employers' skill requirements. According to human capital theory, a developing industrial economy requires ever more advanced skills; students will invest in education until that investment no longer pays off in higher wages (Walters, 2004). For human capital theory, college credentials align with the motives of employers (who need skills to earn revenue), students (who need employment to earn wages), and higher education institutions (who need students to earn revenue). Since the 1970s, human capital theory has been challenged by so-called credentialists, who are referred to as such because they argue that credentials themselves—not the skills they were meant to represent—have become valuable to employers. For credentialists, a college degree is a hollow signifier at best, and a gatekeeping mechanism at worst (Walters, 2004). While the degree may serve institutions of higher education and, to some extent, may also serve employers, it does not align with students' best interests. In fact, while faculty and staff at colleges and universities tend to think of education as an engine for equality, credentialists argue that by continuing to offer traditional degrees at increasingly high cost to students, institutions of higher education instead exacerbate economic inequality (Pfeffer and Strivanek, 2018). Moreover, even businesses suffer, as they "incur substantial, often hidden, costs by inflating degree requirements, while enjoying few of the benefits they were seeking" (Fuller and Raman, 2017, p. 2).

Because they are shorter-term, lower-cost, and offer the potential for à la carte skills development, micro-credentials answer credentialists' call for credentials that align with learners' needs. They also promise a return to what human capital theory saw as the goal of higher education—to provide employers with a highly skilled workforce—but with enhanced efficiency, as an evolving set of in-demand skills can be quickly attained by workers, upskilling over a lifetime. The explosion of micro-credential offerings can be seen as one response to the pressure of neoliberalism on both higher education institutions and students. In a neoliberal framework, the learner is first and foremost a consumer, whose goal is to shape the self into a valuable labor market commodity. As businesses' labor needs change, the learner requires flexible educational products in order to efficiently and continuously pursue economic advancement (Reynoldson, 2023). Meanwhile, neoliberal policymaking frames institutions of higher education as self-interested "market actors" as well, and incentivizes them to "actively pursu[e] new revenue streams and new 'customers'" (Dougherty and Natow, 2020, p. 459). Micro-credentials satisfy the need for new revenue, but less cynically, they also restore the feeling of mission-driven work for higher education institutions, giving them a new way to advance learners' economic futures at a lower cost to students, and at greater benefit to employers. Some of the dissonance we find in discussions of micro-credentials—and especially in discussions about their quality and relevance—may be ascribed to their status as a novel "product" in higher education, one that draws students, employers, and universities into new interactions during a time of great change.

Methods

All research protocols and procedures were cleared by the Institutional Review Board (IRB) of Miami University before conducting research. Higher education (HIED) and industry (EMP) participants were contacted through personal networks (i.e., published on Facebook, LinkedIn, etc.) and shared through various listservs. For HIED professionals, a call for participants email was sent out to mailing lists through professional organizations such as the Ohio Career Development Association, Ohio Student Personnel Association, and university listservs such as Kent State University's current and former HIED students. For employers, the

call for participants was also sent to the Columbus Young Professionals Club and various human resources-related professional groups such as the Society for Human Resource Management (SHRM). After a few weeks of low responses to employer outreach, the researchers utilized Prolific, which connects researchers with individuals interested in participating in research. Employer respondents were paid $1.80 through this website to complete the survey.

All participants were 18 years or older and lived or worked in Ohio. Participants identified as either a higher education professional, defined as someone who works at a college or university within either academic or student affairs, or as an employer, defined as someone who works outside of HIED in a corporate or non-profit setting where they oversee or otherwise influence job postings or hiring decisions, including self-employment. The criteria were meant to be the least restrictive possible to ensure widespread participation across industries.

Setting

This research was restricted to individuals who lived or worked in Ohio. Ohio was selected not only because it was of particular interest to the researchers who reside in the state but also because Ohio has invested significant financial resources to restructure and reprioritize short-term workforce development, education, and training initiatives. For example, Ohio Governor Mike DeWine launched a new program, TechCred, in 2019, as a part of his commitment "to fund the completion of 10,000 microdegrees each year in order to aid in closing the skills gap for growing technology jobs" (Governor's Office of Workforce Transformation, 2019, para. 10). The most recent numbers, released in January of 2025, state that TechCred has awarded over 120,000 technology-related credentials to almost 3,500 Ohio employers since its inception (Stover, 2025). TechCred allows Ohio workers to upskill and reskill at no cost to them by reimbursing employers up to $2,000 per credential per employee. For those who are unemployed or underemployed, or who simply do not wish to go through their employer for training, Ohio also offers the Individual Microcredential Assistance Program (IMAP), allowing them to complete a similar credential at no cost to them (Ohio Governor's Office of Workforce Transformation, 2024). In 2024, IMAP had 15 training providers and more than $6.2 million to support the initiative. These initiatives showcase Ohio's desire to move in sync with industry and emphasize the importance of upskilling and reskilling current workers. In addition, Ohio's extensive network of higher education institutions holds much promise for helping the state meet the demands of its businesses and industries. Ohio's higher education system, comprised of 14 public universities, 24 regional branch campuses, 22 community colleges, over 70 adult workforce education and training centers, and many more private institutions, is well-equipped to help meet current workforce demands for upskilling and reskilling (Ohio Department of Higher Education, 2025).

Instrument

An anonymous online survey was created for this study, consisting of 17-19 questions depending on the respondent group. HIED and EMPs both responded to demographic questions to capture their job titles, years of experience in the field, and workplace characteristics (industry/type of university). Additional questions gathered their perspectives on micro-credential definitions, defining characteristics, completion length, and potential drawbacks or concerns. The survey was housed in Qualtrics, and access was limited to the primary researcher, providing additional security for individuals' information. The survey was anonymous, and participants could skip any questions they did not wish to answer. They could also withdraw their consent to participate at any time. Responses were analyzed using IBM SPSS Statistics (Version 29).

Respondents

The survey resulted in 208 submitted responses. Twenty did not meet the requirement of identifying as either a higher education professional or an employer. Of the remaining 188, 47 did not finish more than one or two demographic questions on the survey and were excluded from analysis. All other respondents officially submitted their survey, though they may not have answered every question. This resulted in 141 responses in the final evaluation, including 68 EMP responses (48%) and 73 HIED professionals (52%). Tables 1 and 2 describe the demographics of participants.

TABLE 1

Demographics of HIED participants (N = 73)

CHARACTERISTICS	CATEGORY	PERCENTAGE
Type of institution	Public, 4-year	73.0
	Public, 2-year	7.0
	Private, 4-year	16.0
Years of professional experience	10 years or less	41.0
	11-20 years	27.0
	› 20 years	18.0

TABLE 2

Demographics of EMP participants (N = 68)

CHARACTERISTICS	CATEGORY	PERCENTAGE
Type of institution	Public, 4-year	73.0
	Public, 2-year	7.0
	Private, 4-year	16.0
Years of professional experience	10 years or less	41.0
	11-20 years	27.0
	› 20 years	18.0

FINDINGS

Of the 73 HIED professionals surveyed, 50 reported that their institution offered micro-credentials. Fifteen respondents were unsure if their institution offered micro-credentials, and eight reported that it did not. While many HIED professionals reported that their institution offered short-term credentials, only 15% reported being very familiar with micro-credentials, 39% reported being familiar, and 46% reported they were somewhat or not at all familiar with them.

Of the 68 employers surveyed, 10% reported being very familiar with micro-credentials, and 26% said they were familiar with them. About a third (31%) reported being unfamiliar with micro-credentials, while the remainder (32%) said they were at least somewhat familiar with them. Employers interacted with micro-credentials in various ways, including recognizing micro-credentials during the hiring process (44%), utilizing micro-credentials for employee training and professional development (43%), and partnering with educational institutions or training providers to create or approve micro-credentials (26%).

A chi-square test of independence was conducted to examine the relationship between respondent type (HIED professional vs. EMP) and familiarity with micro-credentials. There was a significant association between respondent type and familiarity with micro-credentials, $X2(3) = 15.70$, $p < .001$. In general, HIED professionals reported greater familiarity than employers. Familiarity with micro-credentials and a participant's years of professional experience were not significantly associated for HIED professionals ($X2(12) = 6.67$, $p = 0.879$) or employers ($X2(12) = 14.54$, $p = 0.268$).

Respondents were asked to provide their own definition of micro-credential. The most commonly used words from these definitions were "specific," "short," and "skill(s)". HIED respondents frequently included the word "certificate" while employers used the term "certification". This showcases the overlap between various terminology for short-term credentials, including certificates, certifications, certificates of completion, and digital badges. One respondent specified, "There is varying language about what institutions, employers, and vendors call the document provided at the end of earning a micro-credential."

Attributes of Micro-credentials

In addition, respondents were asked to rate the importance of four different credential attributes: industry or employer endorsement, alignment with labor market trends, recognized certification/accreditation, and stackability, or the ability to stack the credential towards higher-level credentials and/or degrees. The four-point Likert scale was "Not at all important" to "Very important" and was transformed into numeric values from 1 to 4. Averages and standard deviations for each group can be found below in Table 3.

TABLE 3

Importance of various criteria by respondent type

	Assessment of Skills	Industry or employer endorsement	Alignment with labor market trends	Recognized certification or accreditation	Stackability with other credentials or degrees
HIED	3.22 ± .80	2.96 ± .80	3.22 ± .73	3.11 ± .86	3.01 ± .95
EMP	2.94 ± .86	2.79 ± .92	2.80 ± .93	3.20 ± .77	2.88 ± .93

An independent samples t-test was conducted on the above attributes. There was a significant difference between EMPs and HIED professionals regarding the importance of a skills assessment ($t137 = 1.99$, $p < .05$), with HIED professionals finding this to be more important than EMPs. HIED professionals were more likely to find alignment with labor market trends more important than their employer counterparts ($t137 = 2.94$, $p < .01$). There were no statistically significant differences between HIED and EMPs on the other attributes. However, it should be noted that HIED professionals generally found these attributes more critical than EMPs in all categories other than "recognized certification or accreditation."

When placed in rank order of importance, HIED professionals' top concerns were skills assessment and alignment with labor market trends. In contrast, employers' top concerns were recognized certification/accreditation and skills assessment. Both groups' lowest priority from this list of options was industry or employer endorsement.

Relation to Workforce

One question asked about participants' perceptions of micro-credentials being "workforce-driven." Four possible responses were available, plus an option to add a response of "other." Respondents could select all that applied. For HIED professionals in particular, it was evident that respondents found the workforce-driven aspect of micro-credentials to be nuanced, with over 57.5% of respondents selecting three or more from the possible list of four options. EMPs were less likely to choose as many options; only 24.2% selected three or more options. 34.9% of EMPs selected only one option, compared to about 20% of HIED professionals. The top response across both groups was "Credentials in high-demand workforce skills based on labor market trends," with 86.3% of HIED professionals and 72.1% of EMPs selecting this option. Table 4 shows the percentage of respondents in each group who selected each category.

TABLE 4

Workforce relation of micro-credentials by respondent type

	HIED % OF RESPONDENTS	EMP % OF RESPONDENTS	TOTAL % OF RESPONDENT
Credentials in high-demand workforce skills based on labor market trends	86.3%	88.2%	87.2%
Credentials in high-demand workforce skills based on local employer demand	75.3%	70.5%	73.0%
Credentials developed with specific employer partners	72.6%	72.1%	72.3%
Credentials approved by, but not developed with, employer partners	49.3%	39.7%	44.7%

TABLE 5

Level of concern with select attributes by respondent type

	Lack of Standardization	Questionable Quality or Rigor	Unclear Alignment with Industry Needs	Difficulty Evaluating Credentials During Hiring	Limited Recognition Across Industries	Cost to Employees/Employers
HIED	3.36 ± .95	3.39 ± 1.12	2.96 ± 1.01	3.35 ± 1.05	3.51 ± .90	2.72 ± 1.15
EMP	3.09 ± 1.13	3.51 ± 1.12	3.02 ± 1.07	3.14 ± 1.00	3.2 ± 1.06	2.85 ± 1.15

Concerns with Micro-credential Programs

Respondents were asked to rate their level of concern for the following, given a five-point Likert scale of "Not at all a concern" to "Extreme concern." Responses were coded into numeric values, with one representing "Not at all a concern" to 5 representing "Extreme concern." Averages and standard deviations for each group can be found below in Table 5.

An independent samples t-test was conducted on the above concerns. There was a significant difference between EMPs and HIED professionals in concern levels with "Limited Recognition Across Industries," with HIED being more concerned than EMPs ($t135 = 1.87$, $p < .05$). No other concerns were statistically significant across groups. However, "Lack of Standardization" neared significance ($p = .07$). When placed in rank order, employers and higher education professionals were the least concerned about cost, and both groups' top two concerns were limited recognition across industries or questionable quality and rigor.

The survey's final question was open-ended, allowing respondents to provide any additional comments. This revealed some interesting insights, including—paradoxically—both areas of alignment and vast differences between the two groups. One common thread throughout final comments was respondents' honesty regarding their own familiarity with micro-credentials or what they are intended to mean. Three employers explicitly stated that they were unfamiliar with micro-credentials and found the survey difficult to respond to. One employer response summed it quite well, expressing their concerns vividly: "I just do not know a lot about them. Like what does it take to obtain them? Are they legit? How hard is it to obtain them? Can anyone with the intelligence of a grapefruit get them?" Five HIED respondents echoed these concerns, highlighting the ambiguity in terms, outcomes, and relevance. One respondent stated, "I don't really know anything about micro-credentials. I think, if they are important or becoming more prevalent in the workforce/hiring process, that they should be more promoted and talked about."

Both respondent groups also highlighted specific concerns regarding this new phenomenon. Some HIED professionals believed that focusing so heavily on workforce outcomes may dilute the overarching mission of higher education. One particular response highlighted the possible slippery slope of partnering with employers to create curriculum and programs more specifically for them.

> *The potential influence/power dynamic that could emerge between a school and a large corporation … As schools continue to struggle with funding and enrollment, this could act as a Trojan horse for large corporations to invest in schools and change how they fundamentally work, as the critical thinking of a liberal education is replaced with the need to know skillset that has been specifically designed for a small number of roles in that particular corporation.*

In contrast, one employer respondent felt the opposite, specifying that more time spent in training, particularly within higher education, was a waste, and future workers would benefit more from being directly in the workforce (emphasis from respondent).

> *Honestly, just go get a job. Actually work. Get out of the classroom and into real life. THAT is what MOST applications are missing. The ability to actually WORK in real life. College is such a waste of time and money. Get in touch with reality.*

Both of the above provide powerful insights into the current state of education, as employers, consumers, government

entities, and others seek more direct relations between education and the workforce.

However, respondents from both groups also have hope for short-term programs. Final responses included optimism for the future of micro-credentials in HIED and the continued prevalence of additional training and professional development for employees.

DISCUSSION

An ever-changing labor market has pressured HIED professionals and employers alike to remain current with the educational aspirations and attainments of learners and potential and current employees. In this climate, staying abreast of innovation means understanding and evaluating micro-credentials. HIED professionals are tasked with creating, validating, and marketing these credentials to learners, while employers are tasked with assessing their value and credibility in the hiring process. Given the significant increase in offerings of micro-credentials or alternative credentials, it has become increasingly important for HIED professionals and employers to assess their relationship to these short-term programs and the impacts of such programs. Still, our results demonstrate that only 10% of employers and 15% of HIED professionals are very familiar with micro-credentials. While in concept over a decade old, micro-credentials retain both their jargon and buzzword status, with HIED professionals and employers lacking awareness and familiarity.

HIED professionals were more likely than employers to be familiar with micro-credentials, likely because HIED institutions offer these types of programs to learners, and, by nature of the profession, HIED professionals are routinely exposed to new educational frameworks, ideology, and opportunities. One would anticipate that employers would be equally or more familiar with micro-credentials, as the concept of these programs is often to make job candidates more appealing to employers. However, interestingly, this study did not find that to be the case. Further, years of professional experience were not significantly associated with familiarity with micro-credentials for HIED professionals nor for employers. Even for those who have worked longer and thus have been exposed to numerous trends in the job market, the understanding of micro-credentials remains opaque.

This may all be because micro-credentials lack a standardized definition. As noted by Varadarajan et al. (2023), there is a distinct lack of consensus in defining micro-credentials. Some survey respondents may be familiar with other short-term programs that could be considered micro-credentials, but are simply called something else, such as professional certificates. Without a standardized definition or even agreed-upon terminology, it is difficult for professionals to accurately judge their familiarity with the concept. Relatedly, the implementation, design, and marketing of short-term programs vary widely across businesses, organizations, and higher education institutions, further complicating an already elusive phenomenon.

Even without familiarity with micro-credentials, HIED professionals and employers identified the importance of various criteria for these short-term programs. HIED professionals found skills assessment and alignment with labor market trends criteria more important than employers did. However, when criteria were placed in rank order, both HIED professionals and employers listed skills assessment as a top concern for micro-credentials. Employers were also concerned with recognized certification or accreditation. These results highlight the dissonance between the two industries and the fact that constituents value multidimensional credential design.

While some have historically believed that a key way to build employer buy-in for micro-credentials was for HIED to work with specific partners to create new, personalized programs, this may not be the best approach. While a business-to-business (B2B) partnership can help create a meaningful relationship between HIED and an employer, it can also be incredibly risky. Excited about the prospect, it can be easy for institutions to develop a new program, anticipating that the enrollments will come through upon completion. However, without an agreement or binding buy-in from the employer partner, institutions may be left with a costly program that is hyper-personalized to a partner that is no longer interested. Instead, it may be more beneficial to consider using a "'plug-and-play' approach. Institutions taking this route design core course content that is used for all partners, but they leave space to build in employer-specific scenarios, projects, or specific skills and details" (Cousar, 2024, para. 10). This is aligned with survey responses as well, as respondents were more likely to want micro-credentials to be aligned with larger labor market trends (87.2%) rather

than hyper-personalized to one employer (44.7%).

Key Characteristics of Micro-Credentials

Alignment with broad labor market trends is a key feature of micro-credentials' ability to be workforce-ready. According to HIED professionals, this was one of the top characteristics of micro-credentials, tied with assessment of skills. Recognized certification or accreditation was the top answer for employers, followed by assessment of skills. Both groups placed the stackability of the credential into additional credentials and/or degrees as of middle importance, while an explicit industry or employer endorsement was the least appealing for both groups. Again, this showcases that both HIED professionals and employers are not as concerned with direct partnership and customization as they are with authentic skills assessment and recognition of the credential. Future research should further explore how HIED and employers define "recognized certification or accreditation" for micro-credentials.

However, based on the respondents' definitions, there are some characteristics that both groups strongly agree on. Micro-credentials are meant to be short, specific, and skills-focused. Completing a micro-credential also results in an artifact, either a certificate or a digital badge. Future research could further explore the anticipated timeline for short-term credentials and how skills should be assessed for these programs.

In addition, key concerns across both groups were identified as "Questionable Quality or Rigor" (number one concern for EMPs, number two for HIED) and "Limited Recognition Across Industries" (number one for HIED, number two for EMPs). As such, increased collaboration between HIED and employer partners could help address these concerns. Employers would gain confidence in the quality and rigor of the programs if they had the ability to see and critique the programs as they were being built. With more employer buy-in, micro-credentials will continue to spread, allowing them to permeate throughout various industries. Therefore, stronger collaborations and partnerships between higher education and employers would help address some of the top concerns found by this study.

Limitations

Our research study presents some limitations. First, all respondents were drawn from Ohio alone because of the state's financial programs to support these short-term credentials. The findings from this study may not be generalizable nationally. Additionally, survey respondents were not presented with a definition of micro-credentials or provided an example of a micro-credential program; it's possible that if respondents had been prompted, they would have recognized other short-term programs they have encountered as falling under the umbrella of micro-credentials. Only the perceptions of HIED professionals and employers were included; additional perceptions of students/learners and policymakers would benefit future research into the topic. However, this study does lay some groundwork for future research to further explore how different constituent groups perceive and value micro-credentials.

Implications for Cooperative & Experiential Education Professionals

The findings from this study may be of particular interest to cooperative and experiential education professionals who inhabit the convergence of education and workforce. Despite the rapid growth of micro-credentials nationwide, only 10% of employers and 15% of HIED professionals were "very familiar" with them. Open-ended responses further demonstrated widespread confusion about their definitions and purposes. This lack of familiarity, coupled with a lack of shared terminology, highlights the need for institutions of HIED to provide transparent credentials, including public descriptions of competencies, key skills, and verifications of how skills or competencies were demonstrated. Transparent metadata directly embedded with digital badging software can help alleviate some of these concerns. Professionals seeking further guidance or wishing to learn more should refer to 1EdTech's Open Badge Standards (1EdTech, 2025) or Credential Engine's Credential Transparency Description Language (Credential Engine, 2025), both of which provide frameworks for improving clarity and consistency in credentialing communications.

Across both employers and higher education professionals, respondents prioritized skills assessment and alignment with labor-market trends. Employers were equally interested in recognized certifications or accreditation. This showcases a preference for real-world, tangible work products, such as participants producing reports, communications, code, or projects. Where feasible, program or course outcomes should be mapped to already-existing professional certifications or competencies (i.e., PM for Project Management skills), which will strengthen the institutions' credentials. For example, Miami University's Cybersecurity

Foundations micro-credential aligns its course outcomes with the CompTIA Security+ certification, preparing students who complete the course to sit for the exam and earn an industry-recognized credential. During the course, students demonstrate their technical abilities through hands-on simulations and produce other artifacts, such as written reports on how cybersecurity policies may vary across the globe or between industries. As such, when students complete the course, they not only finish with the ability to sit for an industry-recognized credential successfully but also have tangible artifacts that could be added to a professional portfolio.

Qualitative comments demonstrated the need to find a balance between employers looking for workforce-ready hard skills and HIED professionals' preference for well-rounded education. Cooperative education professionals can help bridge this divide by combining hard-skill artifacts and guided reflections. For example, a student completing an internship might need to produce specific artifacts during this experiential learning related to their industry, such as a written report, a technical drawing, or a data-tracking spreadsheet. Students could then be asked to compile these artifacts and how they foresee them demonstrating their workforce skills into a project portfolio. A similar method could help students think about how they have shown NACE Career Readiness Competencies, such as by articulating their self-development throughout their experiential learning or demonstrating leadership through taking the initiative to ideate a new process or project (NACE, 2024). This will help students further articulate what they have learned, how they applied it, and how it relates to broader workplace and liberal arts competencies like critical thinking, teamwork, and communication. Embedding hard and soft skills into micro-credential requirements can help students better grasp how their academic and professional journeys connect while offering employers more tangible evidence of skills and competencies.

Taken together, these strategies underscore a micro-credentialing approach that values both hard and soft skills while promoting transparency and workforce alignment. Establishing shared, transparent definitions, adopting common frameworks, and embedding authentic and real-world assessments can help cooperative and experiential educators strengthen the partnerships between higher education and industry. Ultimately, this approach also benefits students, giving them portable, verifiable, tangible artifacts of the competencies developed throughout their experiential journeys.

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Aligning with Employer Expectations: The Role of GPA in Co-op Candidate Evaluation

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ABSTRACT

The University of Cincinnati (UC) began cooperative education in 1906, integrating experience with academics. UC's College of Engineering & Applied Science (CEAS) sustains this practice, requiring students to alternate academic semesters with full-time co-op positions. While co-op is a key factor in students' decision to attend UC, the job search process for a first co-op experience can be a significant source of stress for students. Many students, particularly those with lower grade point averages (GPAs), worry about their competitiveness in the job market.

This case study explores the impact of GPA on securing a first co-op position and identifies actionable strategies to support students in their job search. Utilizing institutional data, employer surveys, and roundtable discussions with electrical and chemical engineering employer partners, we found that while GPA plays a role, employers also prioritize personal qualities, extracurricular involvement, and professional communication skills. Employers emphasized the importance of human connection in hiring decisions.

These insights offer valuable guidance for co-op faculty for advising and instruction. By leveraging both quantitative and qualitative data, career education practitioners can better prepare students—especially those with lower GPAs—for a successful job search. Future research should expand this study to other engineering disciplines and industries.

Keywords: Cooperative education, GPA impact, job search, employer perspective, student support

ALIGNING WITH EMPLOYER EXPECTATIONS: THE ROLE OF GPA IN CO-OP CANDIDATE EVALUATION

Cooperative education (co-op) was pioneered at the University of Cincinnati (UC) by Herman Schneider in 1906 (Reilly, 2006). Co-op is designed to give students hands-on, professional experience while they are still in college. Students in the College of Engineering & Applied Science (CEAS) alternate semesters of school with semesters of full-time, paid employment in their field, and graduate with almost two years of engineering work experience in a professional environment.

CEAS students complete their co-op experiences through the UC College of Cooperative Education and Professional Studies (CCPS), where faculty co-op advisors introduce students to experiential learning and support them as they develop professionally through experience and reflection, both on the job and in the classroom. One of the key facets of the faculty co-op advisor role is to support and prepare students for their first co-op job search. Faculty co-op advisors also teach professional development courses, including a one credit-hour Introduction to Co-op course, designed to introduce students to the intricacies of the job search and professionalism for the workplace.

The integration of practice and theory is so successful that students choose to attend UC's College of Engineering and Applied Science specifically to engage in co-op. According to an internal 2020 survey of 877 graduating CEAS seniors (253 respondents), 91% of respondents said they decided to attend UC because of the co-op program. According to the survey, the next most cited factor for choosing

UC—campus aesthetics—was selected by 47% of respondents. Comments from this survey support the importance of co-op for CEAS students: "The co-op program is 100% your biggest asset. I would refer any potential engineering student to UC just for the co-op program" and "I came to UC for the co-op program, and my co-ops were by far the most rewarding part of the program" (Retrieved from the CEAS Class of 2020 Senior Class Survey shared by Dean John Weidner, December 2020).

However, despite all the enthusiasm around the program, our experience indicates that there is also anxiety in the search for a co-op position. Students put a lot of pressure on themselves to find a co-op role. From maintaining a high GPA to perfecting their elevator pitch at the career fair, we notice students feel like they must excel in every category to land their first co-op role. In our experience, students are often nervous because they have no previous engineering experience. As faculty co-op advisors, we see the stress that students go through finding a co-op, all while maintaining a rigorous academic load.

As faculty co-op advisors, we support students by preparing them for seeking and participating in professional engineering experiences, including actions they need to take for a successful first job search. Faculty co-op advisors often guide students using informal insights—drawing from anecdotal evidence, casual conversations with employers, and observation of characteristics of the first students to accept jobs. While these provide a solid foundation for helping students prepare for finding their first co-op, we were curious if there were gaps in our knowledge base. This moved us to take a closer look at the factors that impact a student's first co-op job search, specifically their GPA, as it reflects student performance in the CEAS program thus far. Multiple studies explore the importance of various resume attributes for recent graduates obtaining employment, but none explore how GPA impacts co-op/intern hiring decisions (Velasco, 2012; Randazzo, 2020). Another reference explores the effect of GPA on post-graduation salaries in China (Zou, et al., 2022). One study showed that medical school interns have better GPA gains than those who do not participate in experiential learning (Filiberto, et al., 2021). After reviewing available data, we determined that GPA was a readily available data point that reflects the current level of student academic achievement.

Among UC faculty co-op advisors, it is commonly understood that students with low grade point averages (GPA), typically below 3.0 on a 4-point scale, tend to leave their GPA off their resume. We are not certain why this occurs, but one guess is general resume advice received from various sources, such as employers, classmates, or family members, as well as professional development instructors unfamiliar with specific CEAS majors. Because engineering students tend to be receptive to hard data and employer feedback, we surveyed selected employer partners (chemical and electrical engineering employers) and engaged them in a roundtable discussion. The objective for this study was to identify data-driven, specific actions that these students can take to increase the probability of receiving their first job offer.

METHODOLOGY/LOGISTICS

Student Data

To obtain the most objective data, we wanted to focus our study on students searching for their first co-op experience. This eliminates the advantage of students with previous co-op/engineering experience and focuses on a baseline group: students who have similar education and work experience levels. Based on faculty co-op advisor observation, this is also the group of students who need the most advice, as the first-time job search tends to produce the most anxiety of all of their job searches. We decided to simplify the study to understand how students are selected for the interview, which eliminates the complexities of the interview process. We wanted to understand from employers what made them decide to interview one student over another. Since many students are nervous about their GPA, we focused on the topic: How does GPA influence your decision to interview a student for their first co-op experience? Students in their first job search have typically completed only one or two academic semesters on which their GPA is based.

We looked at existing hard data from our internal database, Professional Assessment & Learning (PAL), where UC co-ops provide information about each co-op experience as well as upload their resume. We explored the PAL data to try to determine whether GPA is correlated with success in the job search. Students are expected to record their job acceptance at the time they verbally accept an offer from an employer. Unfortunately, the "acceptance date" was not necessarily correlated to interview timing because students sometimes delay recording their co-op hiring in PAL. Some students record their position immediately; some wait days and some wait weeks. It is not a perfect data set, but we can

still gather data to see if there is a correlation between GPA and "acceptance date" because students who accept a position for the spring search in September typically record it in PAL much earlier than those who accept a position in December.

We collected PAL data regarding students searching for their first co-op for three separate semesters: Spring 2023, Fall 2023, and Spring 2024. We examined the date that students recorded their co-op hiring and collected the GPA from the resume that the students used for interviews for that co-op experience. PAL keeps a history of every resume a student uploads. In the case where a student did not include their GPA on the resume, we did not include that data, acknowledging that these were likely GPA's below 3.0. The grade point average versus co-op acceptance date data was analyzed using Microsoft Excel and put into a linear graph. The R2 value was calculated using Excel from the linear graph, and the correlation coefficient (R) was found by taking the square root. The correlation coefficient shows the strength of the relationship between GPA and acceptance date. A correlation coefficient or R value of 1 shows the strongest relationship, and an R value close to 0 shows a weak or no correlation.

Employer Perspectives: Small Group Discussion

To gather this information from the employer perspective, we, as co-op faculty advising CEAS students, reached out to and enlisted targeted UC co-op employers to gather insights about their methods for selecting students to interview for their co-op programs. We used qualitative data because it allows for more nuanced data when exploring complex topics, such as resume and candidate reviews. It allows for a deeper understanding of the participants' experiences than just utilizing numbers alone (Sutton, 2015; Oranga, 2023). In addition, a case study format was determined to be useful here to help answer the "how" and "why" questions about student selection for interviews from the employer perspective (Starman, 2013). Hoping for a high rate of participation, we reached out to specific chemical and electrical engineering employers based on the strong relationships we have developed with them. Additionally, these employers have been partners for 15+ years, demonstrating the value in the views they shared when it comes to hiring co-op students. One company for example, Shepherd Chemical, has been hiring UC students for 100 years. A summary of those participants and their companies is shown in Table 1.

TABLE 1

UC co-op employers from chemical and electrical engineering programs

NAME	COMPANY	MAJOR HIRED	WRITTEN RESPONSE	ROUNDTABLE DISCUSSION
Scott Brody	Trew Automation	EE	X	X
Matt Bowser	Givaudan	ChemE	X	X
Gordon Samuels	Pole Zero	EE	X	X
Roland Kuebler	Valco Melton	EE	X	X
Maddy Merk	KLH Engineers	EE		X
Mike Radick	Thermo Fisher Scientific	ChemE	X	X
John Stueve	Shepherd Chemical	ChemE	X	X
Amanda Tavernelli	KLH Engineers	EE	X	

Written Responses: Initial Employer Small Group

Questions about individual company interview selection process for co-ops were emailed to ten University of Cincinnati co-op Chemical and Electrical Engineering employer partners. Participants hired most CEAS majors at UC. Eight of the ten employer partners responded to these written prompts. Questions were:

1. What is your process for identifying candidates to interview?
2. How heavily does GPA affect your interview and hiring process?
3. What other factors impact your decision to interview a student?
4. What factors impact your decision to make an offer?
5. Is there anything else you'd like to tell us about hiring UC students?

Participants were invited to attend a roundtable discussion on campus. Questions were developed from the written responses, intended to further explore the themes we noticed.

Polling Data: Small Group of Employers

The employer partners met with us in person and answered an anonymous poll collected via a web-based polling platform. Questions in the poll were designed to learn more about the factors employers use to grant an interview for a co-op position. This allowed us to collect quantitative data on resume content. Instructions and questions were as follows: Overall, we are thinking about **first time** co-op students (without prior engineering experience) and wondering how you decide **who to interview**. How important are the factors below? Options: 1. Not that important; 2. Somewhat important; 3. Very important

1. Having a part-time job (high school or college)
2. Involvement in an engineering/major-related student group
3. Other involvement (sports, band, religious, volunteerism)
4. Scholarships and awards
5. GPA (you've already answered this, but to have a comparison to other factors)
6. Quality of resume (format, consistency, grammar)
7. Career Fair/Info Session interaction
8. Referral from another employee/co-op

Roundtable Discussion: Small Group of Employers

After the participants answered the polling questions, we explored each question above in more detail during the discussion session. We took notes and recorded a transcript of this discussion. We then moved the discussion to the following open-ended questions:

1. Where do your eyes travel first on a resume?
2. What stands out to you on a resume?
3. Many of you mentioned "hands-on" experience. Can you give specific examples?
4. Work ethic was also an important factor to many of you. How do you determine that from a resume?

Employer Perspectives: Career Fair Survey

UC hosts a two-day career fair specific to engineering and technology students during the fall and spring semesters, at which approximately 250 employers attend the technical portion over two days. A mix of both human resources and engineering professionals attend the career fair. Due to the mandatory co-op requirement of the engineering program, students are highly engaged, and the career fair is an integral component of the co-op job search.

During the spring 2025 career fair, we asked all engineering employers to complete a short survey to understand the impact of GPA on their hiring practices, gaining perspectives from a broader range of engineering majors, not just chemical and electrical engineering employers. Survey questions included:

1. If a student does not list their GPA on a resume, it will be discarded. (True/False)
2. GPA is an important factor when deciding which students to interview. (True/False)
3. What is the minimum GPA your organization will consider when deciding to interview a student? (open answer)
4. Personal interaction with a student can overcome a low GPA if the student makes a good impression. (True/False)
5. What stands out to you on a resume? What makes you want to interview a student? (open ended)
6. Any additional feedback on how GPA affects a student's ability to secure a co-op position? Any additional feedback on what makes a student successful in the job search? (open ended)
7. Other comments on a student's job search? (open ended)

TABLE 2

Correlation of GPA to acceptance date

Semester	Correlation coefficient (r2) ChemE	% GPAs available	Correlation coefficient (r2) EE	% GPAs available
SPRING 2023	0.184	(33/44) 75%	0.449	(22/25) 88%
FALL 2023	0.323	(27/37) 73%	0.105	(26/30) 87%
SPRING 2024	0.117	(17/22) 77%	0.115	(20/27) 74%

RESULTS

Student Data

The self-reported PAL data did not show a strong correlation between GPA and job "acceptance date." because the correlation coefficients were far from 1. (Montgomery, 2021) Data is summarized in Table 2.

Written Responses: Initial Employer Small Group

After discovering there was very little correlation between GPA and job acceptance date from the PAL data, we surveyed our employers via email. Below is a summary of initial employer written responses on the importance of GPA:

- We require a min 3.0 GPA (G. Samuels, personal communication, October 28, 2024).
- We have differing opinions, but usually above 2.8 (M. Bowser).
- It's very important, we require a 2.5. It conveys work ethic (R. Kuebler, personal communication, October 28, 2024).
- GPA can be a factor, but not determinant (S. Brody, personal communication, October 28, 2024).
- Their GPA is not a top priority (private communication, October 31, 2024).
- GPA does not play a significant role (A. Tavernelli, personal communication, November 1, 2024).
- It's important, but not the most important factor (J. Stueve, personal communication, October 31, 2024).

Employer Perspectives: Polling Data

Six of the seven employers at the roundtable participated in the electronic poll during the in-person employer round table; the results are summarized in Table 3.

We were genuinely surprised with the results of the roundtable, which challenged our assumptions. The table demonstrates the qualitative relative importance of co-op resume content.

Employer Perspectives: Small Group Discussion

The results were unexpected and led to fruitful discussions around the resume content topics listed above. We had assumed that involvement in an engineering club would be most significant and found the results surprising. The authors believed that students who participate in groups related to their field of study have a greater passion for their major and would therefore be more valuable to employers.

Part-Time Jobs

Since experience is one of the main components of a resume, we wanted to determine the significance of prior part-time employment in regard to a student's first-time co-op search. Does a part-time or summer job in high school really help your chance of getting an interview in an engineering role? How does a job scooping ice cream or nannying children impact your search for a first co-op? The survey results suggest that part-time jobs are only somewhat important. "For me, it's not a deciding factor if I'm going to interview this student or not" (Roundtable participant, personal communication, November 15, 2024).

TABLE 3

Poll Results: Importance of factors in granting an interview

Poll Question: how important to granting an interview is the following:	Not Important	Somewhat Important	Very Important	Average Rating
Part Time Job*	1	3	1	2
Involvement – engineering clubs	1	3	2	2.17
Involvement – non-academic clubs/ volunteering/band/sports	0	2	4	2.67
Scholarships/awards	6	0	0	1
GPA	1	4	1	2
Quality of resume	0	0	6	3
Career fair interaction	1	2	3	2.3
Referral from colleague/co-op	1	3	2	2.17

**Due to technical difficulties, only five out of the six responses were recorded.*

According to participants, part-time employment gains importance when students can communicate the skills they gained from these experiences. Did you develop customer service skills? Did you learn the art of negotiation as a nanny? Professional and people skills are still really important in the engineering field, and many of these skills are practiced in those part-time roles. "The job itself isn't that important, but it's the diversification of a person to me is very important … working in process engineering, it's part technical and part people skills" (Roundtable participant, personal communication, November 15, 2024).

Most of the participants echoed that showing what a student learned and showing growth on a part-time job is where the value is to the potential co-op employer. "That's something that's very important to me, they've been able to collaborate as a team, they've been able to learn from that experience and how that can apply to their co-op with us" (Roundtable participant, personal communication, November 15, 2024).

All is not lost if the student has no prior work experience. Showing an employer that you worked on something that mattered to the student could be equally as important. "And if they didn't have a part-time job, did they do something else?" (Roundtable participant, personal communication, November 15, 2024).

Involvement in an Organization Related to Their Major

As faculty co-op advisors, we often advise students to join student groups related to their major, such as Engineering Tribunal or American Institute of Chemical Engineers (AIChE). We advise students that it shows interest in their chosen field and is a great way to meet potential employers. However, although it's a great way to introduce yourself to employer speakers, in this case, our intuition was wrong! Employers were not as interested in whether students were merely members of an organization. Attending meetings and being a passive member of the group had little effect on the employer's decision to interview a student. "Are you actually involved? Do you do stuff with the group? Or are you just a member?" (Roundtable participant, personal communication, November 15, 2024). And "If you're involved and don't have much to talk about, that means nothing to me" (Roundtable participant, personal communication, November 15, 2024).

Instead, employers want to see leadership and active involvement in the club as well. "If they put it on their resume, they need to be prepared that somebody will say, 'Hey, you're in the car group [university automotive club], what are you doing in it?'" (Roundtable participant, personal communication, November 15, 2024).

Involvement in a Non-academic Organization

The result that surprised us the most was understanding how a student's involvement in something besides their major impacted the search. For all the roundtable participants, this type of involvement carried importance. Students sharing a hobby, sport, or volunteer service mattered to our employers. It mattered more than GPA and previous work experience, which felt counterintuitive to us. "It shows breadth and diversity, their own activities and priorities and so on. It is also an opportunity to connect with the interviewers" (Roundtable participant, personal communication, November 15, 2024). And "It shows they actually have a personality and not just an engineering brain all the time. That's important" (Roundtable participant, personal communication, November 15, 2024). Also, "Anything that will differentiate you or that you're heavily involved in and can speak a lot to. You can have some great conversations and see the depth of people's personalities in that short interview time" (Roundtable participant, personal communication, November 15, 2024).

Scholarships and Awards

The employers all agreed that scholarships and awards were the least important factor when deciding whether or not to interview a student. Scholarships can be given for all kinds of things, and don't necessarily correlate to a student's character or ability. A general academic scholarship listed on a resume does not help give a student an edge in the quest to receive an interview.

There were two factors worth noting that impacted a student positively when it came to scholarships on a resume. If a student earned the scholarship through a competition of some sort, that would positively affect the participant's decision to interview the student. The other factor was the community service that is often associated with a scholarship. Some academic scholarships at the University of Cincinnati come with a community service requirement. If a student could speak about the impact of their scholarship volunteerism requirement, that would positively impact their resume.

Grade Point Average

We asked employers: "How important is a student's GPA when deciding who to interview?"

The consensus of most of the panelists was that GPA, after a baseline (which varied), did not matter; GPA was simply a filter to reduce the number of resumes they needed to review. For some companies there was a minimum threshold below which they "rarely" hired. A participant mentioned that he would consider talking to a student who reached out personally. The student who reached out and showed through their conversation that they would work hard for him could overcome the low GPA. For example, there was a student with a 2.6 GPA who was considered for a position because they really liked his personality and experience in landscaping.

> *GPA is like a threshold; you know we very rarely hire a student with less than a 3.0, but once you've crossed that threshold, I don't really care whether it's a 3 or 3.8 or whatever … I'm going to interview you and I'm going to probe into who you are and what you do and what you like and what's important to you and so on and then I'm going to decide who to hire (Roundtable participant, personal communication, November 15, 2024).*

Students who demonstrate an interest in the company, an acknowledgment of a low GPA, and a willingness to improve can make a good impression on an employer.

Several participants mentioned that perspectives on GPA had split opinions depending on the department. Some did not care at all about GPA, while others had a firm minimum GPA requirement. One participant agreed and said that the GPA just represented that the student would have the ability to graduate from their program and that's the only criterion they are really interested in. Another said that GPA is an indicator of time management and work ethic; students should try to dig out of the hole and catch up from that.

We asked a follow up question: "What would it take for a student to get in front of you (for an interview) if they had below a 3.0 GPA?"

A participant said that a student who can do this demonstrates a growth mindset and is what he is looking for. He would choose that person over those to whom a high GPA came very easily. Another participant said that he might ask questions such as "Is there a class that you have an issue with?" Two others agreed that personality is a huge factor. They ask, "Why is the GPA low?" and "What is this student doing to improve it?"

Panelists mentioned a couple of things they did not want to see. If a student does not include GPA on the resume, they will assume the worst: that their GPA is so low, it is not worth following up on. If they meet with the student in

person, they will ask about the GPA anyway. Students should include their GPA regardless of its value. A panelist commented that eventually GPA will drop in importance on the resume as the student gains experience.

Quality of Resume

We asked employers: "How important is the quality of a student's resume when deciding who to interview?"

One panelist commented: "No errors. Period." Panelists noted that the resumes are a "piece of paper that is the only thing that makes you stand out in the pile." Attention to detail is critical. There is no excuse for not having a good resume, considering the technology today with word processing software, autocorrection, and other tools that make resumes easier. Students should adhere to a common structure including resume basics; consistency is important. Panelists agree that an "Objective" section is not needed on a resume of a college student seeking a co-op. To stand out, students should create multiple resumes, customizing each resume to a specific job application.

Career Fair Interaction

We asked employers: "How important is a student's interaction with you at Career Fair when deciding who to interview?"

Perspectives on career fair interactions varied with the companies represented. Panelists noted that this is a huge opportunity for some students. Other panelists said that career fair interactions could be "hit or miss." If students do attend, they should be very prepared for the career fair. Eye contact is important. Students should be prepared to state why they are interested in the company. Sending a follow up e-mail to the company is good practice—obtaining a business card is a test to see if the student is prepared to follow up!

One participant said when it comes to a career fair, he would be willing to work with individual students who contacted him ahead of time to let him know about class conflicts with career fair scheduling. A student could obtain contact information through their faculty co-op advisor or the event page on Handshake.

Referral From Colleague/Co-op

Panelists made the following comments regarding referrals:

- The "best way to hire is from referrals by A-players [strong employees with demonstrated success at the company]";
- A referral almost serves as a pre-screen for the position—the candidate is interested, familiar with the work and the culture;
- A company can have success interviewing referred candidates because they have a good understanding of the company, and the candidates come prepared.

(Roundtable participants, personal communication, November 15, 2024).

Other Considerations

Panelists noted that students risk creating a negative impression if their intentions are perceived as being primarily focused on the pursuit of financial gain. They also do not positively differentiate themselves when they say they chose their major by saying they were "good at math and science." Students should have another topic to talk about when it comes to why they chose their major.

Results of Larger Survey: Career Fair

The career fair survey was completed anonymously by 38 individuals, representing a variety of engineering disciplines and job roles. This anonymous survey may have included both human resource individuals and engineering professionals responsible for their organization's co-op program.

Results for "What is the minimum GPA your organization will consider when deciding to interview a student?" are shown in Table 4 below.

TABLE 4

Survey Results: Employer required minimum GPA considered for interview

MIN. GPA	NO. OF RESPONSES	PERCENTAGE
3.3	1	2.5%
3.0	15	39.5%
2–2.8	10	26%
Does not matter	12	32%

TABLE 5

Responses to "What stands out to you on a resume?"

WORD	COUNT
Experience	16 (total)
Co-op or related	3
Any (if show translatable skills)	13
Projects (personal or related to major)	8
Interest (in major)	7
Involvement (in an organization)	6
Organization (of resume)	5
Personality	4
Skills	4
GPA	2
Leadership	1
Major	1

Less than half of the responding employers needed to see a GPA above a 3.0 and nearly a third reported that GPA does not even matter. Employers provided the following comments regarding GPA: "Honestly, I never look for GPA. Interest and engagement are much more important"; "Work ethic and ability to learn is more important"; and "GPA has a minimum impact as long as a student is not failing". One career fair survey participant commented:

> *Overall interaction is what makes students stand out the most. A student who is well prepared, asks targeted questions, and is engaged throughout the conversation can overcome a lower GPA, and can stand out against students with higher GPAs who didn't come to the booth prepared. Interpersonal interaction is the best way to stand out against other students, as this is where most students are lacking (Anonymous survey data, personal communication, February 13, 2025).*

When asked what else stands out on a resume, employers filled in short phrases and sentences. To summarize the data, we looked for word count of specific items. The results are given in Table 5. According to these responses experience remains the largest single factor. When grouping projects, interest and involvement into one group, indicative of a student's interest and passion for industry, we can see that unified they become a significant factor, reinforcing the theme that there are other resume criteria more important than GPA.

CONCLUSION

The insights we learned have implications for helping hundreds of CEAS students successfully obtain interviews for their first co-op job and appropriately channel their energies in that process, ultimately reducing the unnecessary anxiety of a prolonged job search. Based on the survey data and employer roundtable discussion, we concluded that the students who receive interviews from their resumes do the following three things well:

1. Have a **clear, well-organized resume** that is one page, has an easy-to-read format, and is free from errors.
2. Showcase **meaningful experience and involvement** that includes relevant or unrelated work, personal projects, and extracurricular activities. The type of work was less important than the skills gained from that experience.
3. Demonstrate **genuine interest and personality through networking and personal outreach**. Employers look for students who demonstrate a passion for their field, curiosity, and eagerness to learn. What you have done is less important than who you are.

Deliverables

In addition to verbally sharing the outcomes of the employer roundtable during a meeting with faculty co-op advisor colleagues, the following slides (Figures 1, 2, and 3) were shared with all faculty co-op advisors advising CEAS students in CCPS. This information is intended for faculty co-op advisors to share directly with the students they are advising, and those students who are enrolled in the first-year Introduction to Co-op courses.

FIGURE 1

GPA and career fair strategies

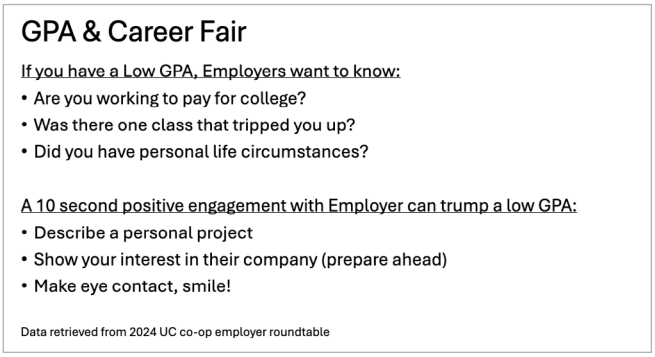


FIGURE 2

GPA and importance of networking

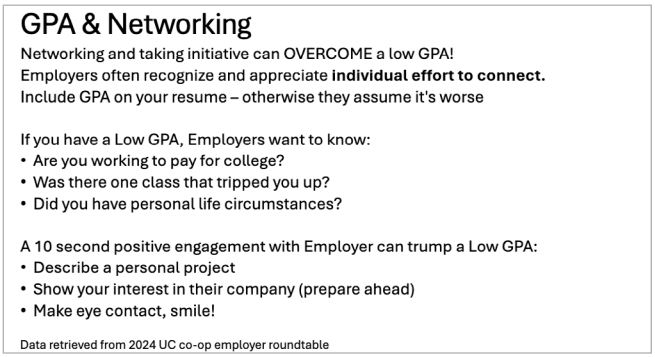
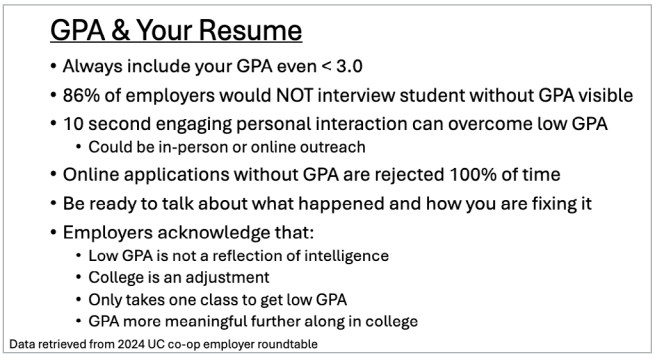


FIGURE 3

GPA and resume implications



Impact

The impact of this roundtable was felt immediately. The results of the study changed our advising and teaching practices as well as our first-semester survey courses (100+ students). We were able to more accurately and confidently speak to our students who were struggling to find a co-op position. This roundtable conveniently occurred over halfway through the semester, when there is often a lull in co-op hiring. We notice that students begin to feel a bit of burnout from the job search process at that time, based on conversations and student job search activity. But with this new information in hand, we personally felt more energized and engaged in helping our students. We now had **data and numbers to share with our engineering students**. We believe this will result in a bigger impact on our teaching. We no longer have to say, "Trust us." We can say, "Look at the data. Research shows that GPA is generally not a significant factor in the hiring process; you just need to work more strategically."

Takeaways from our study were shared with colleagues in the form of a faculty presentation and slides. The Introduction to Co-op course is taken by nearly 1,200 CEAS students every year. This study has the potential to impact thousands of CEAS students as they search for their first co-op position, leading to subsequent co-op experiences, full-time roles, and ultimately positively impacting their career path.

SUMMARY AND FUTURE WORK

Employers showed empathy for students searching for their first co-op experience. They understand how GPA can be impacted by one difficult class very early in a student's college career, or by a difficult personal situation. They understand that it is intimidating to approach an employer at the career fair and know how demanding it can be to manage a rigorous course load and a job search simultaneously.

Importantly, we learned that there is very much a "human connection" component to the job search. Employers want to know: Who is the applicant as a person? What are their other interests? What are they doing when they aren't in classes or studying? Employers emphasized these points during the roundtable discussion. They are going to be working closely with the student and want to make sure they can have a good working relationship.

This study gave us valuable feedback with potential for high impact on our teaching practices. Engineers are driven by data, which we are now able to provide in both quantitative and qualitative formats. Personally, and professionally, it was energizing to meet with our employers in this targeted way and gain a broader understanding of the co-op job search from an employer perspective, so we can better teach and advise. Our intention is to invite employer partners to present at experiential education conferences to share these findings more broadly, ensuring students have the strategies needed for success in the job search.

While our findings offer valuable insights, several important limitations should be acknowledged to guide future research and strengthen the applicability of these results. Further understanding around student success in the job search could be gained by collecting data from co-op faculty advising other engineering majors. We did not collect student demographic data other than major. This could be a future area of exploration if we wanted to explore why some students with a lower GPA were more successful. Another limitation of the study was that the size and geographical location of participating employers were not considered. Intentionally including large international organizations, and those in competitive industries like tech, defense, and space—that are known to have strict GPA requirements—would provide important perspectives to this study.

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The Influence of Collegiate Experiential Learning on New Professionals' Construction of Meaning of Work

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ABSTRACT

The pursuit of meaningful work in today's rapidly evolving professional landscape is a paramount concern for college students, higher education leaders, and employers alike, particularly within the United States. This study explores the influence of collegiate experiential learning on new professionals' construction of meaningful work. While numerous studies have showcased the skill development and economic gains associated with collegiate experiential learning, questions remain about how experiential education prepares students to construct meaning in their work after graduation. Grounded in psychological constructivism and career construction theory, this study sheds light on the potential for experiential learning to enhance holistic career development. The findings reveal that experiential learning can foster a meaningful awareness of self and work, inspire meaningful work aspirations through connections, facilitate access to meaningful employment, and empower meaningful work enactment. These findings have implications for higher education policymakers, higher education administrators, experiential learning educators, and future researchers.

SIGNIFICANCE OF THE STUDY

Amidst recent shifts in social expectations of post-secondary education, colleges must prepare students for fulfilling careers alongside technical skill development. Experiential learning, with its focus on active engagement, critical reflection, and practical application of learned insights, presents a promising pathway to enhance holistic career development. This study examines the question: How does collegiate experiential learning influence new professionals' construction of meaningful work? In answering this question, it explores the ways experiential learning activities during college might shape, inform, or contribute to the development of a sense of meaningfulness in the work lives of new professionals who have recently graduated from college.

Demonstrating the innate connection between experiential learning and meaningful work, Kolb's (1974) earliest publication on experiential learning contained "a normative model of human fulfillment [and] personal variables that can be used to understand and influence the career development process" (p.1). Since then, however, the prevailing focus of experiential learning studies has remained on the formation of hedonic career development outcomes, including knowledge, skills, self-efficacy, job satisfaction, employment rates, and income levels (Bonesso et al., 2015; Bowering et al., 2020; Burga et al., 2020; Dik et al., 2020; Ensher & Ehrhardt, 2022; Esters & Retallick, 2013; Gilbert et al., 2014; Knight et al., 2014; Lee & Sabharwal, 2016; Nevison et al., 2017; Ranta et al., 2020; Spanjaard et al., 2018; Upadyaya & Salmela-Aro, 2015). Only recently has the field begun to assess intrinsic and eudaimonic career development outcomes, such as meaningful work (Bates-Gallup, 2019; Dik et al., 2020; Steger et al., 2012). The scholars behind these growing bodies of literature unanimously stress the need for further research.

SALES ROLE-PLAY AS EXPERIENTIAL LEARNING

While there are many different approaches to experiential learning, the practice of role-play was selected for this qualitative investigation given its growing importance across

academic disciplines. To reduce variability and yield a focused investigation that allows for comparison across individual experiences, this study narrowed its scope to role plays in one discipline, sales. Sales role-play was selected as the focal form of collegiate experiential learning for the study due to its presence in sales education, its versatility of application, and its adherence to the essential components of experiential learning. For this study, sales role-play was defined as interactive training exercises where students enact sales scenarios (Cummins et al., 2020). Sales role-plays can serve as a for-credit pedagogical technique within sales and marketing classes. They can also be made available through sales programs as a campus extracurricular (Johnson et al., 2022). In both settings, sales role-plays aim to simulate real-world sales environments, offering college students a practical and immersive learning experience.

Sales role-plays incorporate essential components of experiential learning—active engagement, critical reflection, and practical application of learned insights (Billups & Poddar, 2018; Canhoto & Murphy, 2016). Students' engagement is visible in their reciprocal interaction with the buyer and "active experimentation with various selling processes and techniques" (Magnotta et al., 2020, p. 247). The individual role-playing the buyer normally gives students feedback immediately after their role-play performances, facilitating critical reflection (Pelletier & Hopkins, 2018). Sales role-plays are conventionally conducted face-to-face; however, with the rise of online learning, they are being offered through online platforms more regularly (Pelletier & Hopkins, 2018). Often, the performances are digitally recorded to allow students to review them for additional reflective learning (Mani et al., 2016). In classroom settings, students are normally given writing assignments in which they reflect on their sales role-play performances. Application of the theoretical sales cycle to a realistic, professional situation achieves the final component of experiential learning. As Magnotta et al. (2020) note, sales-role plays "bring selling scenarios to life and provide context for the theories and techniques being taught" (p. 243).

During sales role-plays, students typically follow a predefined, five-stage sales cycle: building rapport, needs identification, presentation and communication, addressing buyer concerns and objections, and close (Dugan & Lee, 2023; Loe & Chonko, 2000). They begin by introducing themselves, securing the buyer's attention and trust, and providing a meeting agenda (building rapport). Students go on to obtain a clear understanding of the customer's situation (needs identification) by uncovering the buyer's challenges or needs, the effect of those problems, the purchase criteria, and the key decision-makers for the purchase. With varying formality, students persuasively match the benefits of their product or service with the buyer's needs (presentation and communication). Presentation slides, props, and other visual aids are often utilized during this stage. The buyer is then given the opportunity to ask probing questions about the solutions presented. In response, students practice forming complete and concise answers to resolve the buyer's concerns (addressing buyer concerns and objections). Finally, to conclude the sales role-play, students provide the buyer with information about next steps, either requesting a follow-up appointment or obtaining confirmation of the sale (close).

STUDY DESIGN

Method

The selection of a predominantly qualitative methodology for this study was driven by a desire to understand the research constructs from the perspective of the participants (Gall et al., 2015; Marshall & Rossman, 2011). Narrative inquiry was chosen for its paradigmatic alignment with psychological constructivism and career construction theory, the ontology and epistemology underlying this study. Narrative inquiry is explicitly connected to the key constructs of experiential learning and meaningful work. Clandinin and Connelly (2000), influential scholars in educational research and narrative inquiry, base their assumptions about narrative inquiry on Dewey's (1938) theory of experience, which is also the underpinning for Kolb's (1984) work on experiential learning (1984). Clandinin and Connelly draw heavily on Dewey's two criteria of experience: continuity and interaction. Continuity, in narrative research, means that experiences are not isolated events; rather, present experiences grow out of past experiences and lead to future experiences. Interaction captures the interconnectedness of the personal and social dimensions of experience (Clandinin & Connelly, 2000). To enhance the research design, this qualitative study incorporated a minor quantitative component that served as a supplement to augment the qualitative findings.

Participant Eligibility and Recruitment

Valuable insights can be gained from the perspectives of new professionals on their prior engagement in collegiate experiential learning and the construction of

meaningfulness in their professional work. As such, the sample for this study was drawn from a population of U.S. new professionals who had participated in sales role-plays during college. This survey classified new professionals as individuals "who received their [undergraduate] degree in the prior 2 or 3 academic years" (National Science Foundation, n.d., para. 1), and in turn, focused on those who completed their degrees in the previous three complete academic years (i.e., 2021, 2022, 2023). Participants were recruited through participant rosters for past sales role-play events hosted at the University of Minnesota Twin Cities. Students from a variety of colleges and universities across the United States participated in these events.

Using network sampling, these professionals were contacted directly through LinkedIn, a professional networking site, to inquire about their interest in participating in the study. Once potential participants were identified, they were invited to complete a Google form with screening questions based on a set of predefined criteria.

Participants were then selected using purposive, non-probabilistic sampling (Lohr, 2022). While purposive sampling does not have a threshold for sample size, the sampling for this study aimed to capture a sufficiently large and diverse group of participants (Lohr, 2022). Given the specificity of the participant credentials and use of narrative inquiry techniques, the proposed sample size for this study was between six and 15 participants (National University Library, 2023; Sarfo et al., 2021). Those who met the criteria and expressed interest were sent a formal invitation to participate in the study, including information about the study's purpose, the nature of their involvement, and assurances of confidentiality and data protection.

Qualifying individuals were required to have participated in at least one sales role-play during their undergraduate tenure in either a curricular or extracurricular format. Finally, in order to obtain the most relevant perspectives on meaningful work, the participants were required to be engaged in full-time professional work at the time of the study (at least 35 hours per week).

Participants

The sample in this qualitative study included 13 participants, all of whom had graduated from college between 2021 and 2023. The majority (53.84%) completed their degrees in 2022, followed by 30.77% in 2023, and 15.38% in 2021. Four participants (30.77%) identified as first-generation college graduates, meaning their primary caregivers did not complete a bachelor's degree. Only one participant (7.69%) was an international student, meaning they completed their undergraduate degree in the United States but were not a domestic student.

The sample consisted of seven women (54.85%) and six men (46.15%). In terms of racial and ethnic representation, eight participants (61.54%) identified as White, three participants (23.08%) identified as Asian American, and two participants (15.38%) identified as Black. At the time of data collection, participants ranged in age from 22 to 26, with 24 being the most common age (38.48%).

The majority of participants studied business-related fields, particularly marketing or business and marketing education. Some participants pursued multiple majors in different areas of study, such as psychology and economics, marketing and Spanish, and journalism and recreational tourism. Most participants (10 out of 13) pursued careers in professional sales. The remaining worked in campus ministry, data analytics, strategy consulting, and merchandising. The most common industries of work for participants were software technology, healthcare, and manufacturing. Less commonly occurring industries included ministry, travel, logistics and shipping, and retail fashion.

Data Collection

The data collection process for this study was designed to gather work narratives and other relevant information from new professionals who participated in collegiate sales role-plays. The researcher took an emic perspective during data collection, meaning she prioritized understanding the topics from the subjective viewpoint of the participants (Gall et al., 2015). The data collection included a set of pre-interview activities and a semi-structured interview with each participant.

Pre-Interview

In advance of the interview, study participants were invited to complete a written pre-interview containing a sequence of brief questions focused on familiarizing participants with relevant concepts and prompting their memories related to these concepts prior to the face-to-face interview. The pre-interview asked participants to reflect on key terms such as professional work, experiential learning, meaningful work, and sales role-play. These were presented again at the start of the face-to-face interview to ensure a shared understanding of terminology.

Following the definitions, participants responded to the Experiential Learning and Meaningful Work Questionnaire, which contained open-ended prompts about memorable sales role-play experiences, perspectives on meaningful work, and beliefs about the origins of these perspectives. Informed by narrative inquiry pre-interview techniques (Clandinin & Connelly, 2000; Riessman, 2007), the Experiential Learning and Meaningful Work Questionnaire was designed to: 1) prime participants for the in-depth interview by eliciting memory recall and reflection on the key constructs (e.g., sales role-plays, meaningful work); and 2) identify points of alignment or divergence between the participants' definitions of these constructs and those used in this study. This section of the pre-interview encouraged participants to actively engage with their lived experiences before the formal interview process.

Participants then completed the Experiential Learning Engagement Questionnaire. This instrument was adapted from Coker et al. (2017), who examined the impact of Depth and Breadth in multiple forms of experiential learning (e.g., study abroad, internships, service-learning, undergraduate research). For this study, the questionnaire was modified to focus exclusively on sales role-plays rather than multiple forms of experiential learning.

Next, participants completed the Work and Meaning Inventory, consisting of 10 close-ended questions rated on a scale from "Absolutely Untrue" to "Absolutely True." This instrument, developed and validated by Steger et al. (2012), assessed three subscales of meaningful work: Positive Meaning (how one's work is seen as a source of personal purpose or significance), Meaning-Making through Work (how one's work is seen as a way to make sense of broader life experiences), and Greater Good Motivations (how one's work is seen as a positive contribution to others or society). The subscores for each subscale, along with the Overall Meaningful Work score (a composite of the subscores), were calculated based on the guidelines provided by Steger et al. (2012). This section of the pre-interview assessed the meaningfulness participants perceived in their current professional work.

In the final section of the pre-interview, participants were asked demographic questions about their age, gender identity, race or ethnicity, employment status, and primary field and industry of professional work.

Semi-Structured Interview

After completion of the pre-interview, the researcher scheduled semi-structured interviews with each participant, which ranged in duration from 50 minutes to nearly 3 hours, though the majority of the interviews (10 of 13) spanned between 60 and 90 minutes. Six of the interviews were conducted in person, while the remaining seven were conducted virtually. All of the interviews were audio recorded and subsequently transcribed. The researcher listened to each recording for transcription accuracy and noted verbal and non-verbal elements (e.g., pauses, filler words, intonations). These interviews served as the primary data source for this study. The interview captured the narrative accounts of the participants' sales role-play experiences and reflections on their meaning-making processes during the early years of their professional work.

The interview began with the participants' completion of a storyboard, which is a handmade arts-based research method in which participants create a series of visual panels to explore the research concepts and their personal narratives (Ball, 2020). The researcher emphasized to participants that the goal of this activity was "not to create an 'artistic,' aesthetically pleasing, linear, or complete piece of art per se. Instead, [participants were] encouraged to be as creative, messy, gestural or orderly as needed to communicate their experiences" (Ball, 2020, p. 86). Participants were given up to 10 minutes to visually represent their perspectives on work on a horizontally oriented piece of paper divided into three sections, each representing a distinct phase of their life: before, during, and after college. Collectively, these phases were deemed the participant's "work story." Once complete, participants were asked to give a verbal overview of their sketch with minimal interruption from the researcher. This exercise spurred the participants' memories, offered the researcher a holistic view of participants' work stories, served as a springboard for the following discussion, and became a visual artifact for data analysis.

After the storyboard exercise, the researcher then "zoomed in" on discrete parts of the participants' work stories with open-ended questions following the same chronological fashion: before, during, and after college. The researcher supplied the participants with printed reference materials to support the conversation, including a list of relevant definitions (e.g., experiential learning, professional work, meaningful work, sales role-plays) and an emotions wheel featuring a series of common emotion words (e.g., sad, joyful, scared, peaceful). The open-ended interview questions

covered various facets of participants' experiences and perceptions, such as their pre-college attitudes towards work, memorable learning experiences during college, and reflections on their current professional roles. Specific questions were consistently asked to all participants; however, the researcher typically asked tailored questions based on participants' pre-interview responses. The interview concluded with a verbal summary of the researcher's field notes, allowing participants to review and correct any inaccuracies, as is customary in narrative inquiry.

TABLE 1

Narrative analysis process

STEP	DESCRIPTION
1. Chronological Coding	Deductively organized the transcripts into three distinct phases: before, during (including sales role-plays), and after college using NVIVO.
2. Narrative Coding	Performed fine-grained coding of transcripts to identify psychological states, influential figures, and obstacles.
3. Labov's Narrative Structure	Produced narrative profiles for each participant with the sections: Abstract, Orientation, Complicating Action, Evaluation, Resolution, and Coda.
4. Storyboard Interpretations	Incorporated participants' verbal explanations of storyboards into profiles. Images of the storyboards were included at the end of each profile.
5. Quantitative Measures	Calculated and contextualized the Experiential Learning Engagement and Work and Meaning Inventory scores for individual participants and the sample collectively.

Data Analysis

The first stage of analysis—narrative profiles—conveys participants' individual work stories. The interview transcripts were coded and reported according to Labov's (1972) narrative structure of Abstract, Orientation, Complicating Action, Evaluation, Resolution, and Coda. As recommended by Riessman (1993), select portions of the transcripts were "re-transcribed" or coded with identifiers corresponding to the respective components of Labov's narrative structure (i.e., A, O, CA, E, R, C). The "core narrative" for each participant was then reported in a cohesive, chronological manner (Riessman, 1993).

Each narrative profile began with an Abstract containing the given participant's name or pseudonym, demographic information, a concise summary of their overall narrative, a statement about the perceived influences of sales role-plays on their life and work, and a statement about their conceptualization of meaningful work. This was followed by an Orientation to the participant's pre-college work experiences and perspectives. The Complicating Action then detailed a sequence of events from the beginning of college through graduation. The participant's Experiential Learning Engagement Questionnaire results (Overall score and subscores) were also stated in the Complicating Action. The Evaluation discussed the participant's reflections on the perceived influence of sales role-plays on their life and work overall. The Resolution described the participant's transition into the workforce and current professional role, including their job responsibilities, field, industry, and perception of meaningfulness in work. The participant's Work and Meaning Inventory results (Overall score and subscores) were also stated in the Resolution. Finally, the Coda returned to the present, representing the participant's current perspectives on work and desires for work moving forward.

Quantitative metrics gathered during the pre-interview enriched the narrative profiles. By weaving the Experiential Learning Engagement and Work and Meaning Inventory results into the narrative profiles, the study conveyed a richer, more contextualized depiction of each participant's experiences. Participants' verbal explanations of their storyboards were also incorporated into the profiles.

TABLE 2

Thematic analysis process

STEP	DESCRIPTION
1. Bracketing Transcripts	Summarized related transcript segments and digitized the summaries.
2. Inductive Coding (Open Coding)	Reread transcripts and inductively coded segments corresponding specifically to sales role-plays.
3. Grouping Codes (Axial Coding)	Compiled codes into a list and grouped them by commonalities to form themes through iterative arrangement.
4. Deductive Coding via NVIVO	Revisited the transcripts in NVIVO to deductively validate the themes across participants.
5. Integration of Themes and Narratives	Established logic between participant stories, themes, and the research question.
6. Cluster Analysis	Analyzed participants as clusters by theme, noting the presence and absence of patterns in the collected data.

Given the subjective nature of experiential learning and meaningful work, as well as the study's basis in career construction theory and psychological constructivism, it was essential to portray the data from the participants' perspectives. To achieve this, the researcher employed member checking by allowing participants to review and revise drafts of their narrative profiles. Following preparation of the data, narrative analysis entailed five steps (See Table 1).

This approach to narrative analysis ensured that the narrative profiles reflected a complete view of the participants' reflections on sales role-plays and meaningful work throughout distinct phases of their lives. With the integration of numerous qualitative and quantitative data sources, this narrative analysis laid the foundation for a valuable thematic analysis that revealed how sales role-plays influenced the construction of meaningful work for these new professionals.

The second stage of analysis—thematic analysis—centered on conducting a macroscopic view of the narratives collected. The analysis loosely followed Braun and Clarkes's (2022) six-step analysis process and employed NVIVO coding software to facilitate the process. Through axial coding, the researcher identified relationships (themes) between the initial codes as they related to the overarching research question (Strauss & Corbin, 1990). To validate the inductively derived themes, the researcher returned to NVIVO to deductively code the transcripts. Logic was then established between participant stories, the identified themes, and the study's research question. The final step of thematic analysis involved grouping participants by theme and identifying notable commonalities and inconsistencies within each cluster's data.

The results of the Work and Meaning Inventory communicated participants' perceptions about the meaningfulness of their current professional work. The mean Overall Meaningful Work score (out of 50 possible points) was 40.85 (SD = 5.86), with scores ranging from 27 to 49. Among the three dimensions, Positive Meaning (out of 20 possible points) had the highest average rating (M = 16.08, SD = 3.15). Greater Good Motivations (out of 15 possible points) had the lowest average score (M = 11.62, SD = 2.18). Meaning-Making through Work (out of 15 possible points) fell between these subscales with a mean of 13.15 and standard deviation of 1.82. These findings were incorporated when interpreting the interview data.

As with narrative analysis, thematic analysis for this study followed a systematic process. However, where the narrative analysis organized and contextualized the collected data, the thematic analysis sought to uncover, interpret, and synthesize recurring themes relevant to the study's research question. Thematic analysis entailed six steps (See Table 2).

KEY FINDINGS

The findings of this study reveal that the experiential learning practice of sales role-plays influenced participants' construction of meaningful work in four ways:

Fostering Meaningful Awareness of Self and Work

The sales role-plays served as a mirror to reveal participants' work values, preferences, strengths, and areas for growth. Their heightened awareness of self and work resulted in transformative realizations that supported their construction of meaningful work. The role plays often validated a natural alignment between participants' personal characteristics and sales, the focal profession of the experiential learning activity. The experience also exposed misalignments, prompting thoughtful pivots toward more suitable roles or industries. Whether by unveiling new pathways or reinforcing existing interests, the sales role-plays informed participants' understandings of what makes work meaningful to them.

Inspiring Meaningful Work Aspirations through Connections

Through mentorship, encouragement, validation, role models, or other forms of guidance, the relationships formed through sales role-plays can inspire current and future meaningful work aspirations not previously considered. For the participants, these role play-related relationships typically occurred with coaches and peers. Several participants formed new conceptualizations of meaningful work in response to certain influential figures. As a result, they began to prioritize newfound values, such as contributing to the societal good, promoting representation in underrepresented spaces, mentoring others, and embracing personal and professional growth. This theme illustrates the potential for sales role-plays to indirectly inspire deeply meaningful work aspirations for new professionals.

Facilitating Access to Meaningful Employment

Sales role-plays bridged the gap between education and employment, supporting participants' access to work they deem meaningful. Some leveraged role play-affiliated networking opportunities to secure internships or full-time positions, while, for others, these professional relationships continue to serve as career resources *en route* to meaningful employment. Additionally, the pre-professional work experience and interviewing skills acquired through sales role-plays enhanced certain participants' career readiness in the eyes of employers. Across all cases, sales role-plays contributed to participants' attainment of employment that is meaningful, as defined by financial security, professional growth, personal values, or a combination of these factors.

Empowering Meaningful Work Enactment

The sales role-plays cultivated a range of competencies—such as confidence, resilience, teamwork, interpersonal skills, and persuasive communication skills—which participants now apply in their daily work. Participants stressed the function of these competencies in their performance of meaningful work. The participants defined meaningful work in diverse ways, including making a positive impact, aligning with personal values, and achieving extrinsic goals like financial independence.

These four themes can be contextualized within the landscape of existing literature, connecting the findings to theoretical models and empirical studies related to experiential learning, career development, and meaningful work that undergirded the study's conceptual framework (psychological constructivism and career construction theory).

IMPLICATIONS

As this study establishes, collegiate experiential learning presents one promising mechanism through which students can achieve meaningful work. The themes of this study reinforce the findings of previous scholarship by demonstrating how experiential learning can contribute to students' development of career readiness competencies and access to employment opportunities. Uniquely, however, this study found that these competencies and opportunities can serve as pipelines to meaningful work—an under-recognized, second-order benefit of experiential learning.

To this end, the findings of this study have implications for instructional staff and faculty as well as higher education administrators, including provosts, deans, department chairs, and directors of career services or experiential learning centers. This study demonstrates that sales role-plays, as one form of collegiate experiential learning, can support the construction of meaningful work in a variety of ways—by fostering identity formation, inspiring aspirations through connections, facilitating access to employment, and empowering effective performance in the workforce. Through these mechanisms, college graduates enter the workforce prepared to actively construct meaning in their present and future work. This outcome extends remarkably

beyond the conventional targets of post-secondary career development. By cultivating an institutional culture that values experiential learning, administrators can successfully promote holistic career development for students and alumni. Administrators should consider the accessibility of experiential learning to ensure at least some exposure for all students.

Although this study focuses on sales role-plays, the findings are likely applicable to a broader range of experiential learning contexts. The specific experiential learning task—such as pitching a product—may be less important than the experiential learning principles embedded in the activity. When students participate in real-world or simulated experiential learning—whether in the form of sales role-plays, service-learning, or job shadowing—they are often prompted to reflect on their values, preferences, strengths, and growth areas, fostering the self-awareness described in the first theme. The second theme's emphasis on intentional guidance from faculty, staff, and peers, for example, applies across disciplines and formats, including case studies, clinical experiences, and study abroad programs. The third and fourth themes, which highlight links between experiential learning, competency development, and employment outcomes, are also evident in a wide array of experiential learning models. Students may attach meaning to these outcomes in ways similar to the participants in this study, even when the precise context differs. While sales role-plays provided a useful lens through which to examine the construction of meaningful work, the underlying mechanisms identified in this study are transferable for experiential learning across higher education. The activities can help students uncover aspects of professional work that align—or misalign—with their interests, values, and strengths. Educators should begin by clearly conveying the value of experiential learning to students.

Another finding from this study is the need for experiential learning to authentically represent the realities of professional work. When students are exposed to an accurate portrayal of a profession, they can better assess their own alignment with it. Also emerging from this study is the importance of variety in experiential learning. Whether team-based or individual, industry-specific or interdisciplinary, virtual or in-person, all formats of experiential learning were found to aid in meaningful work construction. A diversity of experiences allows students to explore many professional contexts and, oftentimes, identify multiple career pathways that align with their values, preferences, strengths, and aspirations. Thus, educators are encouraged to embed variety into their use of experiential learning.

In light of the changing workforce, experiential learning should be designed to reflect emerging industry trends. The cluster analyses revealed that experiential learning played a strong role in facilitating access to employment specifically in software sales. By incorporating exposure to both established and emerging industries, educators can better prepare students to pursue meaningful work opportunities in an evolving job market.

Overall, the findings reveal that experiential learning can foster a meaningful awareness of self and work, inspire meaningful work aspirations through connections, facilitate access to meaningful employment, and empower meaningful work enactment. These findings have implications for higher education policymakers, higher education administrators, experiential learning educators, and future researchers. Through the aforementioned recommendations, there can be a more thoughtful integration of experiential learning practices into educational systems in ways that better prepare students for meaningful work.

To read the full dissertation, visit this link.

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Expanding the Classroom: A Global Health Immersion in Ghana

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ABSTRACT

This narrative reflects on a field-based experiential learning journey to rural Ghana, designed to deepen student understanding of global health systems, oral health disparities, and the socio-cultural determinants of health. The experience fostered critical reflection on healthcare access, cultural humility, and interdisciplinary collaboration through immersive engagement with community health workers, local leaders, and educational institutions. Anchored in the principles of experiential education, the narrative emphasizes how structured reflection and community-based learning can expand traditional public health pedagogy and prepare students for ethical, equity-centered practice in global contexts.

Keywords: experiential education, global health systems, healthcare delivery, faculty reflection, cultural humility.

This immersion builds on a growing body of global health education literature that emphasizes the need for field-based, reflexive learning experiences to prepare students for ethical and effective practice. Experiential education has been shown to foster cultural humility, systems thinking, and interdisciplinary collaboration, skills increasingly emphasized by public health competency frameworks and accreditation bodies. (Blenner et al., 2021; McKinnon et al., 2016) Moreover, scholars argue that transformative experiences, especially those that challenge positionality and power, are critical to developing globally engaged health professionals. (Kheirkhah Abkenari, 2025; McKinnon et al., 2016)

METHODOLOGICAL FRAMING: A PEDAGOGICAL DESIGN FOR IMMERSION

This field experience was part of a structured undergraduate global health course with experiential education as its core methodology. The design integrated Kolb's experiential learning cycle (concrete experience, reflective observation, abstract conceptualization, and active experimentation) and Mezirow's transformative learning theory, which emphasizes critical reflection and perspective change through disorienting dilemmas (Kolb, 2014; Mezirow, 1997).

The program unfolded in three stages: (1) a pre-departure module that explored global health ethics, systems thinking, oral health equity, and cultural humility; (2) a two-week in-country immersion involving field visits, collaborative learning, and nightly debriefs; and (3) a post-trip synthesis through reflective assignments and peer dialogue. The course intentionally emphasized nonlinear, affective, and dialogic learning processes over content mastery.

As a faculty member observing students, I had not previously taught, my liminal role allowed me to witness the pedagogical design in action without the burden of assessment. This distance sharpened my awareness of how students engaged with uncertainty, discomfort, and meaning-making. I observed how they moved through Kolb's cycle in real time, feeling disoriented by unfamiliar clinical settings or cultural practices, then journaling or unpacking these moments in group discussions, and ultimately reframing their understanding of health systems and their own professional identities.

Importantly, the methodological structure of the program left room for unplanned learning to emerge. A student who

initially fixated on biomedical protocols later reflected on the value of traditional oral hygiene tools made from tree bark. Another questioned the metrics we use to define "successful" health interventions. These shifts signaled that learning was taking root, not as facts memorized, but as worldviews reexamined.

By scaffolding experience with intentional reflection and ethical framing, the program fostered transformative growth. It offered not just a lesson in global health, but a model for how to teach and learn when the classroom has no walls.

INTRODUCTION: EXPANDING THE CLASSROOM THROUGH IMMERSION

In July 2024, I joined a field-based experiential learning program in rural Ghana. I wasn't the lead instructor, nor did I know the students beforehand. That distance, unusual for faculty, offered something rare: a chance to observe learning as it unfolded—unfiltered, unforced, and deeply human. Each day revealed layered stories about health systems, resilience, and the ethical entanglements of bearing witness in a place not your own.

The program itself was thoughtfully designed, grounded in experiential education theory and shaped by a belief that the field is not an add-on to the classroom, but an extension of it. Students completed pre-departure modules on cultural humility, social determinants, and interdisciplinary health frameworks. Still, nothing fully prepares you for the moment you meet a rural healthcare worker treating patients without electricity, or watch a teacher explain menstruation with no materials but her hands. These moments became the real curriculum.

As a faculty member, I entered this space expecting to teach or at least support. Instead, I found myself learning—quietly, humbly, and often unexpectedly. It became clear that immersive education is not about exporting knowledge, but expanding one's capacity to listen, to notice, and to sit with discomfort. The classroom had no walls here. And in its place was something much more alive: shared inquiry, ethical presence, and moments of transformation—for the students and for me. My experience was grounded in the pedagogical belief that students learn best by doing, particularly when challenged to reflect critically on social and structural determinants of health.(Frenk et al., 2010; Lasker, 2016b) The immersion began with daily observations and reflections that intentionally linked place, practice, and pedagogical purpose.

GHANA'S HEALTHCARE SYSTEM: STRUCTURES, GAPS, AND LIVED REALITIES

Ghana's healthcare system is decentralized and organized into a three-tiered model: primary care delivered through Community-based Health Planning and Services (CHPS) compounds, secondary care via district hospitals, and tertiary services at regional and teaching hospitals. While this structure is designed to promote access across rural and urban populations, it remains vulnerable to inequities rooted in geography, staffing shortages, supply chain gaps, and sociopolitical instability. Ghana has made measurable gains in maternal and child health indicators, yet persistent challenges in oral health and chronic disease care reflect broader global disparities in what counts as "essential" healthcare.(Aikins & Koram, 2017; Sakeah et al., 2023)

These structural realities became palpable during our site visits. Oral health clinics often lacked basic infection control measures, anesthesia, and functioning equipment, forcing reliance on manual tools and improvisation. For patients with chronic diseases such as hypertension or diabetes, continuity of care was compromised by logistical barriers and erratic medication availability. Despite these limitations, local providers displayed remarkable resourcefulness, innovating through community partnerships, mobile outreach, and culturally grounded health education. These gaps, particularly in oral health and chronic disease management, revealed how field-based learning allows students and faculty to witness the disjuncture between policy frameworks and lived experience. It was in these spaces that experiential education catalyzed deeper engagement with the ethics of intervention, the politics of visibility, and the power of local knowledge.

This field experience highlighted the fragmented nature of care, particularly in the areas of oral health and preventive services. Health workers frequently voiced frustration over insufficient training and limited allocation of resources to CHPS sites, many of which lacked essential infrastructure such as electricity or diagnostic tools. Observing these realities through a systems lens enabled students to appreciate how national goals such as Universal Health Coverage (UHC) are experienced unevenly on the ground. During visits to local clinics and hospitals, students reflected on the ingenuity of staff working under constraint and the fragility of systems that depend on improvisation.

Oral health emerged as a powerful entry point for analysis and dialogue. Many individuals used traditional cleaning

methods such as chewing sticks, charcoal, or shared toothbrushes, practices rooted in both necessity and cultural identity. These observations provoked discussions about the meaning of prevention, the intersections of education and access, and the importance of embedding oral health within broader public health priorities.(Marmot et al., 2008; Organization, 2022; Watt et al., 2019)

EXPERIENTIAL ENCOUNTERS: COMMUNITY, CLASSROOM, AND THE EMBODIED CURRICULUM

Through home visits, health assessments, and dialogues with community health workers, I gained insights into challenges such as sanitation, HIV/AIDS, and nutrition. One particularly memorable interaction involved learning about the "fish for sex" practice in a coastal village, an economic and gendered phenomenon that illuminated the intersection of survival strategies and public health risk. This transactional dynamic, where women engage in sexual relations with fishermen in exchange for access to fish or livelihood opportunities, has been documented in several sub-Saharan African contexts.(Kyei-Gyamfi et al., 2025) While often rooted in economic precarity, it reflects deeper structural inequities related to gender, power, and informal economies. This practice contributes to heightened vulnerability to sexually transmitted infections, including HIV, particularly in areas with limited access to preventive services and condoms.(Khalifa et al., 2025) As one health worker shared, "Many women depend on this for survival. But it comes at a cost they often have no power to negotiate protection." Witnessing these lived realities prompted students to interrogate the intersection of poverty, gender, and health access, and raised critical questions about how public health frameworks might respond to such embedded practices without pathologizing communities. This encounter underscored the value of experiential education in helping learners understand how sociocultural norms shape health risks in ways not easily captured in curricula or policy briefs. These engagements provided material for reflective journaling and group debriefs that deepened our shared learning. (Lasker, 2016a)

At local schools, the experiential learning took on new dimensions. Conversations with students and teachers exposed menstruation-related stigma and the absence of hygiene infrastructure, while also revealing children's joy, resilience, and curiosity. In one junior high classroom, a teacher admitted that many girls stay home during their periods due to lack of access to pads or clean bathrooms. A student quietly shared that she used pieces of cloth and feared teasing from boys if they noticed a stain. Despite this, the atmosphere was not one of despair. Girls were eager to learn, asked candid questions about menstruation, and smiled shyly when we discussed hygiene products. Their resilience and curiosity underscored the duality of vulnerability and strength so often present in under-resourced school settings. These visits emphasized how structural inequities affect education and health outcomes and encouraged pedagogical strategies that blend observation with advocacy.(Sommer et al., 2015)

INTEGRATIVE IMPACT: REFLECTION, PARTNERSHIP, AND PROFESSIONAL GROWTH

Reflection was central to the experience. Whether visiting spiritual trees revered for their symbolism, listening to a village chief discuss leadership, or participating in local meals, each moment invited critical thinking about culture, power, and positionality. Journaling, nightly group discussions, and structured prompts helped bridge experience with analysis, aligning with Kolb's experiential learning cycle and Mezirow's transformative learning theory.(Kolb, 2014; Mezirow, 1997)

Collaboration with the University of Cape Coast's Population Health Department underscored the importance of sustainable, bidirectional partnerships. Joint discussions focused on integrating oral health into primary care and the need for curriculum development that reflects local priorities. These exchanges were informative and helped model ethical engagement and co-learning.(Nguyen-Truong et al., 2018) For example, during a discussion with the University of Cape Coast's Population Health faculty, our team shared a visual case study on oral health screening in rural Ecuador. Rather than simply presenting findings, we paused to ask whether similar methods could be adapted locally in Ghana. A Ghanaian faculty member responded by sharing a parallel effort led by nursing students, highlighting the importance of community oral health days in CHPS zones. This mutual sharing, where both sides brought knowledge, listened with care, and refrained from prescribing solutions, embodied co-learning in action. It was not about imposing a "global best practice," but about asking, "What works here, and what do you want to build?" That shift in posture from expert to partner was deeply instructive.

Students emerged from the experience with a heightened awareness of global health inequities and a deeper appreciation for community-based health work. The fieldwork

promoted key competencies such as cultural humility, systems thinking, and reflective practice skills that are increasingly valued in graduate education and global health careers. For instance, after visiting a rural clinic that lacked running water and basic instruments, one student reflected, "I used to associate quality care with technology. Now I see it's also about adaptability and trust." Another, during a debrief, questioned their assumptions about traditional oral hygiene methods, noting, "People here have been caring for their teeth with sticks and charcoal for generations. Maybe prevention looks different in different contexts." These reflections illustrate how immersive learning facilitated not just awareness but deeper epistemological shifts in how students viewed health systems and global equity. Importantly, participants reported an increase in their confidence when engaging with diverse populations and navigating ethical complexities in real-world settings.(De Visser et al., 2020; Rodríguez et al., 2021)

STUDENT REFLECTIONS AND TRAJECTORIES

Throughout the program, students were encouraged to document daily reflections, drawing connections between their observations and broader themes of global health justice, resource distribution, and human dignity.

- "The CHPS clinic visit opened my eyes. I always thought of healthcare as sterile, clinical, and detached—but the midwife there knew everyone by name and family. It was healthcare as a relationship," noted a public health major, junior.
- One student noted, "Being in Ghana challenged the way I thought about what healthcare access really means. I realized it's not just about medicine or infrastructure, it's about trust, community, and listening."
- Another pre-dental student, a senior aspiring to become a public health dentist, reflected on how seeing traditional oral hygiene practices reshaped her understanding of prevention and cultural competence, and shared, "I had no idea what oral health access looked like in rural settings until I watched someone use charcoal and a twig to clean their teeth. That moment stayed with me."
- "When I saw a girl get teased for having her period at school, I felt ashamed, not for her, but because I'd taken menstrual products and privacy for granted my whole life," said a nursing student, a sophomore, feeling emotional at that time.
- Another global health minor, senior, said, "At first, I felt helpless! What could I possibly contribute here? But then I realized my role wasn't to fix, it was to witness, to learn, and to carry stories home."

The trip had a lasting impact beyond the field experience. Several participants have since pursued international public health internships, global health minors, or capstone projects addressing health equity. One student began developing a research proposal on integrating oral health into maternal health frameworks, while another co-authored a campus presentation on menstruation equity in global contexts. These student-led trajectories underscore how experiential education fosters not just awareness, but tangible academic and professional development rooted in equity and advocacy.

ETHICS, FACILITATION, AND FACULTY REFLEXIVITY

Participating in this immersion as a faculty observer and not the primary instructor offered a rare pedagogical vantage point to observe student learning from the margins. This liminal role afforded distance from evaluation and control, enabling me to engage in what is described as a pedagogy of presence, being with learners rather than above them.(Vygotsky & Cole, 2018) Unencumbered by facilitation duties, I became attuned to subtle cues: how discomfort manifested, how curiosity unfolded, and how meaning was constructed in situ. The experience reminded me that faculty development, like student growth, is ongoing, relational, and often nonlinear.(Dumas & McNeish, 2017)

Several moments prompted critical reflection on my own assumptions and pedagogical habits. At times, I felt the urge to contextualize complex issues, such as HIV stigma or traditional oral health practices, for students. Instead, I chose to observe how they processed these encounters independently. During one debrief, a student voiced concern about a clinic's limited infection control. Another gently countered, "Maybe we should ask what the clinic does have before we judge what it lacks." That exchange was humbling, not only for them, but for me. It underscored the peer-generated pedagogical power that arises when faculty step back.(Narayan, 2011)

This experience also reshaped my understanding of what counts as learning in field-based education. In academic settings, we often privilege articulation, clear arguments, verbal reflections, and written assessments. Yet in Ghana, I witnessed learning that was embodied, emotional, and at times unspoken. One student wept after a school visit and

remained quiet for two days. When she finally shared, her words were raw, yet deeply profound. As faculty, we must honor such affective and nonlinear modes of knowing and build pedagogies that allow them space to emerge.

As I return to designing and teaching global health courses, I carry these lessons forward. I plan to integrate more structured, ethically grounded reflection activities, not only for students, but also for co-faculty. We, too, must journal, debrief, and name the tensions we encounter. As an observing faculty member, my experience was uniquely enriched by informal debriefs with the lead faculty who directly guided student learning. These conversations offered a powerful mirror: while I witnessed student transformation from the margins, she navigated its orchestration in real time. In one evening dialogue, she shared how she managed emotional intensity among students after a particularly difficult school visit. In contrast, I had been quietly observing how they coped without intervening, learning to let silence speak. These reflective exchanges deepened my insights into liminality: neither student nor lead, I was navigating an observational space that required ethical restraint, attunement, and shared vulnerability. We did not always see the same things, but our dialogue surfaced multiple truths, each shaped by role, lens, and pedagogical proximity. Ultimately, field-based education offers a mirror: it asks not only what we teach, but how we listen, how we interpret, and how we grow. (Fedesco et al., 2020)

Ethical engagement in immersive learning is both a pedagogical and logistical commitment. In this program, structured reflection was facilitated through pre-travel workshops on cultural humility and power dynamics, daily evening debriefs during the field stay, and guided prompts embedded in journaling. Reflection questions included: "What assumptions did you bring into this encounter?" and "How do your observations challenge dominant narratives about global health?" One student shared, "Today I felt overwhelmed watching a midwife do so much with so little. I wanted to ask questions but also didn't want to intrude. It made me question how I define professionalism; it looks different here, and maybe better in some ways."

As a faculty observer, I noted how essential it was to allow for both silence and dialogue to create room for discomfort without rushing to resolve it. As one student noted, "During the debrief, I realized I'd been focusing on what the clinic lacked instead of what it offers the community. That shift felt uncomfortable, but necessary."

Reflection was not only about what students saw, but how they came to see it: whose voices they prioritized, what systems they questioned, and which truths they centered. My mental notes echoed, "I thought reflection would be easy; I've done it in class before. But here, it feels heavier. There's no 'right answer' to what I'm seeing."

Ethical facilitation also required constant attention to community relationships: ensuring introductions were respectful, feedback was reciprocal, and data collection, where applicable, was non-extractive. One student mentioned, "I assumed our way of doing things was more advanced, but honestly, their community relationships felt more human than our tech-heavy clinics back home."

These intentional design choices framed reflection not as an afterthought, but as a core method for cultivating ethical awareness, humility, and sustained engagement in global health practice.

RELEARNING IN THE FIELD

This structured immersion not only catalyzed transformative learning for students but also for me as a faculty member. Positioned as an observer rather than a traditional instructor, I experienced a kind of pedagogical unlearning, one that reintroduced me to the emotional and intellectual vulnerability that often defines authentic learning. The reflective structure of the program, grounded in experiential education theory and critical pedagogy, created a scaffold for ethical discomfort, humility, and personal growth, not just for students, but for faculty as well.

In witnessing students wrestle with inequities, navigate cultural tensions, and reflect aloud in evening debriefs, I found myself revisiting fundamental questions about power, positionality, and what it means to "know" in a global health context. At moments, I was reminded that facilitation is not synonymous with control, and that stepping back can reveal more than stepping in. The field became a shared learning space, one where my faculty title was secondary to the shared labor of meaning-making.

This experience reaffirmed the value of immersive, reflective global health education not as a tool to teach about communities, but as a process for all participants, including faculty, to continually reexamine their own assumptions, roles, and educational philosophies. As universities deepen their commitments to experiential education, faculty must be supported not only as designers or facilitators but also as reflective learners who are shaped, challenged, and renewed by the very experiences they help create.

CONCLUSION: TOWARD A PEDAGOGY OF PRESENCE AND EQUITY

This Ghana field immersion exemplifies the transformative potential of structured experiential education in global health. The design and delivery of this program, anchored in reflection, cultural humility, and community engagement, fostered student growth not only in content knowledge but in empathy, systems thinking, and ethical reasoning. These skills are essential for navigating the complexities of healthcare systems and social determinants that characterize 21st-century global health practice.

More significantly, this experience highlighted the role of faculty not merely as content experts, but as co-learners and reflexive practitioners. Participating in the field as an observer allowed for a reengagement with the pedagogical foundations of experiential education, including the cultivation of discomfort, the value of silence, and the nonlinear nature of transformative learning. It became evident that faculty, too, benefit from structured immersion—not just to assess student learning, but to renew their own perspectives, challenge their assumptions, and embody the reflective practices they seek to instill in others.

In expanding the boundaries of the classroom into a global field context, this program offers a model for interdisciplinary, equity-driven, and ethically grounded experiential learning. It underscores the imperative for institutions to support faculty not only in facilitating global experiences but in participating in them as reflective learners. Such engagement deepens the relational and epistemological foundations of experiential education, ultimately shaping more compassionate, contextually aware, and socially responsive health professionals and educators.

BEYOND THE CLASSROOM, BEYOND THE TRIP

Months after returning, the experience in Ghana continues to echo through my teaching. I find myself redesigning syllabi with more room for discomfort, dialogue, and emotional processing, hallmarks of the field that are often absent in classroom settings. When I speak to students about equity or global systems now, I do so with greater humility, carrying the weight of stories shared in clinics, schools, and village homes. Ghana did not just shift what I teach, it shifted how I listen, how I notice, and how I hold space for complexity. That, more than any learning outcome, may be the most enduring gift of immersion.

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Leveling Up Experiential Learning: Integrating Coursera and LinkedIn Learning Micro-Credentials into Cooperative Education Courses and Alternative Work Experiences

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ABSTRACT

This case study and practical applications article examines embedding Coursera and LinkedIn Learning micro-credentials into a professional development course for Information Technology and Cybersecurity undergraduates in preparation for cooperative education (co-op) rotations. Additionally, this article examines how to integrate micro-credentials into alternative experiential programs, such as game-development simulations. It documents student feedback and implementation strategies from the University of Cincinnati, and offers practical, scalable recommendations for integrating competency-focused, employer-aligned micro-credentials into curricular and co-curricular experiential education.

INTRODUCTION

Preparing students for the rapidly evolving fields of Information Technology and Cybersecurity requires more than technical expertise. Employers consistently emphasize the importance of career-readiness skills, including adaptability, critical thinking, and professional communication, alongside domain-specific competencies (National Association of Colleges and Employers [NACE], 2023). Yet, higher education often struggles to align curriculum with employer expectations, leaving students underprepared for the demands of cooperative education (co-op) rotations and internships. For Information Technology and Cybersecurity undergraduates, this readiness gap is especially pronounced given the pace of technological innovation, the complexity of compliance frameworks, and the growing sophistication of cybersecurity threats.

By combining classroom instruction with real-world application, experiential learning fosters skill development, professional confidence, and industry-aligned competencies. Co-op is a cornerstone of this approach and demonstrates strong outcomes in employability and career preparedness (Brown et al., 2023; Towhidi & Pridmore, 2023). Research highlights that work-integrated learning not only strengthens technical abilities but also builds essential career competencies, such as teamwork and leadership, that employers consistently rank as critical (NACE, 2023). As Information Technology and Cybersecurity roles evolve, experiential education must adapt to reflect emerging workforce needs and industry standards (Towhidi & Pridmore, 2023).

One promising innovation in this space is the integration of micro-credentials. Micro-credentials, often offered through platforms like Coursera and LinkedIn Learning, provide

short, competency-based certifications validating mastery of targeted skills. Unlike traditional degrees, micro-credentials allow for rapid upskilling and highly specific alignment with employer demands (Ahsan, et al., 2023; Brown, et al., 2023). For Information Technology and Cybersecurity students, micro-credentials not only offer documentation of evolving technical skills such as ethical hacking or cloud security but also signal initiative and career readiness to employers (Gamage & Dehideniya, 2025). A growing body of research suggests micro-credentials enhance employability, expand access for diverse learners, and serve as a scalable complement to traditional academic programs (Islam et al., 2025; Gamage & Dehideniya, 2025). However, questions around standardization and quality assurance remain (Brown, et al., 2023; Alenezi, et al., 2024).

This article examines the integration of Coursera and LinkedIn Learning micro-credentials into the University of Cincinnati's Introduction to Cooperative Education professional development course (PD 1010) and the Experiential Explorations Program (EEP). These programs embed competency focused, employer-aligned micro-credentials into professional development curricula, preparing Information Technology and Cybersecurity undergraduates for co-op rotations while also piloting alternative experiential pathways such as project management and game development. Drawing on student feedback, implementation strategies, and course outcomes, this article provides practical recommendations for embedding micro-credentials into curricular and co-curricular experiential education.

BACKGROUND

Micro-credentials and Career Readiness

Micro-credentials are short, competency-based recognitions of learning that are increasingly being used to validate industry-relevant skills and signal job readiness alongside traditional degrees (Varadarajan et al., 2023). Research syntheses find that a well-designed micro-credential ecosystem can accelerate upskilling, strengthen employability, and complement curricular learning when institutions align them with quality assurance and stakeholder needs (Ahsan, et al., 2023; Brown, et al., 2023; Varadarajan, 2023). In practice, Coursera micro-credentials offer structured sequences mapped to high-demand skill areas (e.g., cloud, analytics, cybersecurity) and culminate in performance-based assessments that make competencies visible to employers. Benefits of technology certifications include enhancing skills, especially for learners starting in Information Technology, boosting salaries and improving job prospects, while costs include the time and money they take to study and complete certification exams (Coursera, 2025). When embedded in professional development and experiential courses, these credentials can help students document specific technical abilities while also demonstrating initiative and self-directed learning attributes employers consistently value (Ahsan, et al., 2023; Brown, et al., 2023; Varadarajan, 2023).

The National Association of Colleges and Employers (NACE) career-readiness framework identifies eight cross-cutting competencies that employers expect from new graduates: critical thinking, communication, teamwork, professionalism, technology, leadership, career & self development, and equity & inclusion (NACE, 2024). Recent NACE job outlook data indicate problem solving, teamwork, and written communication remain top attributes sought on new graduate resumes (NACE 2025a, 2025b).

Persistent misalignment between academic preparation and workplace expectations is well documented in cybersecurity workforce studies. The NICE (National Initiative for Cybersecurity Education) workforce framework for cybersecurity (NIST SP 800-181s1) provides a common lexicon of tasks, knowledge, and skills that curricula can target to improve program-to-job fit (NIST, 2020). Meanwhile, the ISC2 2024 cybersecurity workforce study reports nearly 60% of professionals say skills gaps significantly impair their organization's security posture, underscoring the urgency of better-aligned preparation and verified skills for entry-level talent (ISC2, 2024). Embedding micro-credentials that are explicitly cross-referenced to NICE task/skill statements can help programs close these gaps by making graduate competencies clear to employers and co-op supervisors (NIST, 2020; ISC2, 2024).

Institutional Context—University of Cincinnati Cooperative Education Model

The University of Cincinnati (UC) pioneered co-op in 1906 and remains nationally recognized for co-op (UC News, 2025). University of Cincinnati reports a Top 5 national ranking for co-op/internships and emphasizes extensive employer partnerships across sectors. In 2024-2025, UC students in paid co-op roles earned a collective $94.19 million, a 6% increase over the prior year's total, reflecting both program scale and strong employer demand (UC News, 2025). These outcomes underscore the institution's capacity to integrate credentialed learning with authentic, paid work experiences at scale (UC News, 2025).

The University of Cincinnati's co-op model is particularly salient for Information Technology and Cybersecurity students who typically complete multiple semesters of full-time, paid placements before graduation. By layering Coursera and LinkedIn micro-credentials into UC's professional development course and alternative experiential learning pathways, students can present a combined portfolio: verified micro-skills, plus documented workplace performance from co-op. This dual evidence base of competency artifacts and supervisor feedback strengthens students' candidacy for co-op rotations and full-time roles, while giving employers clearer, standardized indicators. When institutions communicate NACE competency growth alongside technical badges, they begin to address both sides of the readiness equation that employers highlight in job outlook surveys (NACE 2024; NACE, 2025a, 2025b; NIST, 2020; ISC2, 2024; UC News, 2025).

Rationale

Given the accelerating pace of technological change and the documented skills gap, UC's mature co-op infrastructure provides an ideal proven ground for scalable micro-credential integration. Coursera and LinkedIn micro-credentials, aligned with NACE competencies and the NICE framework, offer a practical mechanism to target specific technical capabilities demanded by employers, build and assess career competencies, and generate portable evidence students can showcase on resumes and in co-op/interview settings. Embedding these credentials in professional development coursework and extending them to alternative experiential learning opportunities closes the loop between learning outcomes and assessment, and labor market indicators can be tightened while honoring UC's longstanding commitment to work-integrated education (Ahsan, et al., 2023; Brown, et al., 2023; Varadarajan, 2023; NACE, 2024; NIST, 2020; ISC2, 2024; UC News, 2025). The next section presents the first case study use of micro-credentials in an academic course.

CASE STUDY 1: PD 1010 INTRODUCTION TO COOPERATIVE EDUCATION COURSE INTEGRATION

Course Overview

The primary objectives of PD 1010: Introduction to Cooperative Education at the University of Cincinnati are to introduce students to the co-op model and prepare them for successful participation in the UC Professional Practice Program. By engaging in this course, students build a foundational understanding of the history, policies, and procedures of co-op while also developing the professional skills necessary to secure and succeed in experiential learning opportunities. Key learning outcomes include self-assessment for personal growth, resume and portfolio creation, proficiency in interview strategies, and familiarity with the theory and practice of co-op as a high-impact learning model.

The target student population for PD 1010 is first-year and transfer/transition undergraduate students majoring in Information Technology and Cybersecurity. These students often enter the program with some technical skills but require structured support in developing career readiness competencies such as communication, professionalism, and intercultural awareness, to complement their technical capabilities. By tailoring professional development topics to their specific disciplinary context, the course ensures students are well prepared to translate their academic learning into workplace success while navigating the unique challenges of the Information Technology and Cybersecurity industries.

Within the course structure of PD 1010, Coursera micro-credentials and LinkedIn Learning modules play a critical role by extending students' learning beyond the classroom and offering access to high-quality, industry-aligned content. Co-op faculty integrate Coursera modules into PD 1010 to reinforce and expand technical and career readiness topics, providing students with flexible, self-paced opportunities to deepen their skills and earn industry-recognized micro-credentials. By blending Coursera and LinkedIn Learning's global learning resources with course-specific activities like resume development and interview preparation, students can make connections between universal professional competencies and the expectations of the co-op program. This integration not only diversifies the modes of instruction but also encourages students to take greater ownership of their learning and career preparation.

Implementation Process

A distinctive feature of PD 1010 is the integration of choice-based micro-credentials through both Coursera and LinkedIn Learning, allowing students to personalize their professional development experience. Rather than prescribing a single sequence of online modules or micro-credentials, the course invites students to select content most relevant to their career interests and professional goals. This flexibility

reflects the diversity of pathways within Information Technology and Cybersecurity and underscores the importance of student agency in shaping their learning journey.

In Coursera, students can pursue extended learning tracks closely aligned with technical career pathways in their field. These tracks provide in-depth, industry-recognized learning experiences complementing students' academic coursework while preparing for co-op roles requiring specialized skills. By working through modules, students not only strengthen their technical expertise but also gain credentials signaling readiness to potential employers. In parallel, LinkedIn Learning micro-credentials focus on professional and career readiness skills, addressing areas equally vital to success in the workplace. Learning pathways such as Professional Soft Skills, Develop Your Creative Thinking and Innovation Skills, and Develop Your Communication Skills and Interpersonal Influence reinforce competencies like collaboration, critical thinking, and effective communication. Additional modules on Mental Health at Work, Organizational Skills, Generative AI Productivity, and Succeeding in Remote Work reflect contemporary challenges and opportunities in the professional landscape. Collectively, these resources support students in developing the holistic skill set necessary to thrive in dynamic and interdisciplinary Information Technology and Cybersecurity careers.

PD 1010 instructors help students recognize the value of micro-credential experiences beyond simply fulfilling course requirements. Because students have choice, instructors act more like coaches and mentors, providing encouragement and support in aligning micro-credential choice with career goals. To support students in completing their chosen Coursera or LinkedIn Learning micro-credential, PD 1010 instructors include a structured sequence of upskilling assignments designed to provide accountability, reflection, and steady progress throughout the semester.

- **Upskilling Survey (5 points**): Early in the semester, students complete a survey to select their preferred Coursera or LinkedIn Learning modules. This assignment encourages students to reflect on their career goals and align their choice of micro-credentials with their intended co-op pathway.
- **Upskilling Progress Updates x 4 (10 points each x 4)**: To ensure steady engagement with the material, students submit four progress updates across the term. Each update prompts students to document their advancement through their chosen modules, reflect on developing skills, and making connect between skills and career readiness goals. A regular check-in structure reinforces student accountability while also allowing instructors opportunities to provide timely feedback and encouragement.
- **Upskilling Certification Completion (10 points)**: The final assignment requires students to provide evidence of completion for their selected Coursera or LinkedIn Learning modules. In addition to uploading certificates, students reflect on how the new knowledge and skills could be applied in their upcoming co-op experiences and long-term career development.

The scaffolded assignment structure emphasizes consistency and reflection, ensuring students not only complete their chosen micro-credential but also engage in metacognitive thinking about how their learning connects to their professional identities. This structure aligns with Kolb's (1971, 1984) experiential learning theory, which describes learning as a process that occurs through four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation. With instructor guidance and built in course assignments, students are encouraged at the end of the course to integrate their learning into past coursework such as resume development, interview preparation, and professional narratives like elevator pitches, ensuring micro-credential experiences translate into meaningful career preparation.

Student Feedback

While students are encouraged to choose from a wide variety of Coursera and LinkedIn Learning pathways, clear trends emerge in the types of micro-credentials they pursue. On Coursera, the most common completions are the IT Support and the Cybersecurity Professional certificate programs. Similarly, on LinkedIn Learning, the most frequently selected tracks include Advance Your Skills as an IT Help Desk Specialist, Explore a Career in IT Support, Become an IT Security Specialist, and Cybersecurity Fundamentals. These patterns reflect students' desire to strengthen foundational technical skills directly relevant to their initial co-op placements, where help desk, IT support, and entry-level cybersecurity roles are common starting points. Engaging with these micro-credentials can give students a concrete understanding of the types of roles available in Information Technology and Cybersecurity, helping them to better envision their future careers while also building marketable skills.

In the Upskilling Survey assignment, students are required to answer simple questions before starting their upskilling work, one of which is "Why does this Upskilling work interest you and how do you think it will help you get a future co-op?" Student survey answers recognize the value of micro-credentials in enhancing their competitiveness in the co-op search process. Several students note completing micro-credentials gave them an advantage when communicating their readiness to employers, particularly in interviews for early career roles. As one student reflected, "By finishing this upskilling work, I'm improving my technical skills and earning a professional credential that will increase my appeal to prospective co-op employers that are searching for applicants with current, useful skills."

Another student echoed this sentiment, explaining, "Hopefully skills I learn in this pathway will prove useful in demonstrating myself during co-op interviews." Students also highlighted how having a recognized certificate provided credibility beyond their limited work experience, one saying: "Having a certificate on IT support would allow me to show employers that I am capable of providing IT support backed by a certificate not just prior experience." These perspectives suggest students view micro-credentials not only as a way to build technical proficiency but also as tangible signals of employability resonating with industry expectations of early career talent.

Overall, students who successfully complete PD 1010 leave the course with career-ready materials, such as polished resumes, updated LinkedIn profiles, and strengthened interviewing skills, alongside industry-recognized micro-credentials earned through Coursera and LinkedIn Learning. Together, these outcomes position students to enter the co-op search process with both the technical expertise and professional competencies employers value. By combining traditional career preparation with stackable micro-credentials, the course effectively prepares students to compete for highly competitive opportunities at leading technology companies such as Microsoft, IBM, Google, and other industry innovators. The next section examines a second case study of micro-credentials in alternative co-op experiences.

CASE STUDY 2: EXPERIENTIAL EXPLORATIONS PROGRAM INTEGRATION

Course Design and Purpose

The Experiential Explorations Program (EEP) at the University of Cincinnati stands out as a vital component of the co-op curriculum for Information Technology and Cybersecurity students. The EEP offers a flexible alternative to traditional co-op rotations, meeting diverse student needs and supporting those not yet ready for a standard co-op experience. Within this program, students develop skills through simulation-based experiential learning, a pathway designed to enhance technology skills and career readiness for the dynamic workforce. While some advanced students opt to create Custom EEPs to earn industry credentials, younger or less experienced students find value in the structured approach offered by tracked/pre-designed EEPs.

Through EEP, students not only cultivate technical skills but also develop essential soft skills such as time management, accountability, and communication. This immersive experience fosters independence and professional growth, preparing students to navigate the complexities of industry with confidence. Additionally, EEP ensures student progress and industry relevance through a series of key deliverables, including:

- Start of EEP Survey
- Final EEP Showcase Presentation
- Proof of EEP Completion
- End of EEP Survey

These deliverables act as checkpoints throughout the EEP, helping students stay on track, demonstrate their progress, and reflect on their learning which prepares them to succeed as well-rounded professionals in the dynamic field of technology.

Coursera Integration

When UC's College of Cooperative Education and Professional Studies partnered with Coursera in 2024, the Information Technology and Cybersecurity co-op advising team quickly embraced the opportunity to significantly enhance EEPs with the integration of the Coursera platform.

Students accessed simulation-based industry-relevant curriculum and practical experiences through Coursera's technology-centric courses and certificates. Faculty customized pathways for students based on their majors and interests, leveraging Coursera's resources to align with curriculum and co-op requirements.

The introduction of the IT Support EEP and Cybersecurity EEP pathways is designed to establish foundational concepts, methodologies, and skills essential for students new to the Information Technology and Cybersecurity domains. Through college-funded opportunities, students obtained industry-relevant micro-credentials, such as the Google IT Support and Google Cybersecurity certificates, at no personal cost. These credentials bolster their professional profiles and provide essential technology skills for career advancement.

Throughout the semester, students are granted autonomy to navigate the credential pathway with co-op faculty advisors monitoring progress metrics in the administrative side of Coursera (e.g. number of videos watched or time invested in the track) to identify any potential learning gaps or obstacles hindering advancement. This proactive approach facilitates swift resolution of challenges when students seek guidance or raise concerns with co-op faculty advisors, ensuring a collaborative effort to address issues effectively.

Following the successful launch of the initial EEP Coursera pathways, the co-op faculty advisor team responded to student feedback and demand for more specialized skill development tracks by introducing three additional pathways: the Artificial Intelligence EEP, Game Development EEP, and IT Project Manager EEP. These tailored pathways, now integral components of the suite of tracked EEP pathways available to Information Technology and Cybersecurity students during co-op rotations, cater to students' evolving educational needs and aspirations for acquiring niche skill sets.

Student Impact

In the inaugural year of integrating the EEP and Coursera, 138 Information Technology and Cybersecurity learners enrolled in one of the five available pathways. The top five skills assessed within the first 30 days of the Fall 2025 semester were SQL, data security, computer programming, communication, and data ethics, which are skills deemed essential for success in a technology-driven workplace environment. During this same time, students actively engaged with 24 to 55 distinct learning modules depending on their chosen track, with an average of 79.2% of student assessments being practice-based, providing enhanced experiential learning and career development opportunities. Students are empowered to offer feedback on course content directly to Coursera, with 11 students taking advantage of this opportunity, resulting in an impressive average satisfaction rating of 4.7 out of 5 across all pathways.

Delving deeper into the tangible outcomes, a student in the Cybersecurity program successfully completed the Cybersecurity EEP, obtaining their Google Cybersecurity certificate in Summer 2025. This achievement not only enhanced the student's skills and practical experience but also bolstered their resume, helping them secure a traditional co-op position in Infrastructure and Cloud Technology at 84.51, a Kroger company, for the Fall 2025 semester. In reflecting on their experiences, another Cybersecurity student highlighted the strengths of consistency and time management cultivated during the EEP semester, emphasizing the dedication and meticulous planning that contributed to a seamless workflow: "One strength was consistency; I got on and did 5 hours of work every day and sometimes even worked on the weekends. Another skill I demonstrated was time management; I planned out almost the whole summer just to make it that much easier and it made the [EEP] flow smoothly."

Another student who completed the IT Support EEP shared their growth in confidence and the importance of collaboration in achieving collective project goals efficiently, recognizing the value of leveraging others' expertise for mutual success: "As I gained confidence, I had a tendency to want to own a task completely. I plan to improve by consciously seeking opportunities to collaborate and split components of larger projects, trusting others; expertise to achieve a collective goal more efficiently."

The integration of EEP with Coursera has not only transformed the learning experience for Information Technology and Cybersecurity students but has also paved the way for concrete skill development, industry-relevant certifications, and improved workplace readiness. Through personalized pathways, valuable feedback mechanisms, and real-world application of acquired knowledge, students have not only refined their technical abilities but have also nurtured essential soft skills, boosting their confidence and preparedness for the dynamic demands of the technology industry. This innovative approach to experiential learning has truly empowered students to excel and thrive in their academic and professional pursuits.

RECOMMENDATIONS FOR PRACTICE

Course Instructors and Alternative Work Experience Leaders

The University of Cincinnati's School of Information Technology (SoIT) offers undergraduate programs in information technology, cybersecurity, and software application development. Information Technology majors choose from three curriculum tracks: game development and simulation, networking/systems administration, and data technologies. All full-time students, regardless of track, must complete a co-op. Most students enter co-op after one year of coursework, though some bring prior learning from high school, industry experience, or industry-recognized credentials. To support this range of preparation, co-op faculty advisors developed beginner and intermediate level Coursera micro-credentials, aligning upskilling pathways with the SoIT curriculum, student interests, and industry and market trends.

The hiring market is continuously changing, and micro-credentials are a way that course instructors and alternative work experience leaders can respond to changing demands. According to Handshake, an online career networking platform, technology internship postings declined by 30 percent between January 2023 and January 2025 (Handshake, 2025). From industry, skills are also changing. According to industry, the skills needed to be competitive in the technology job market are rapidly changing (World Economic Forum, 2025). Coursera's job skills report (2024) identified the top ten technology skills, of which half are cybersecurity skills, yet 3.4 million cybersecurity jobs go unfilled worldwide (Coursera, 2024). Coursera micro-credentials can be intentionally mapped to competencies (e.g., technology plus critical thinking via labs/assessments, and communication plus professionalism via reflection artifacts) thereby strengthening students' employability narratives and providing evidence that directly matches employer expectations (NACE, 2024; NACE, 2025a, 2025b).

As noted earlier, students are allowed to opt into one of five faculty-designed EEP Coursera tracks or customize their own. Students who secure experiences only partially fulfilling EEP requirements, such as part-time or project-based work, are also permitted to select specific Coursera programs. For example, a past student who secured a part-time co-op experience wanted to improve their programming skills, so supplementing part-time work with Microsoft's Python Development program was ideal. Not all EEP participants choose the program due to difficulty securing a traditional co-op. Some, having already secured post-graduation employment, use EEP to customize their experience with Coursera programs aligned to their future roles.

This model of flexibility and customization can be duplicated at other universities by aligning micro-credential pathways with existing curricula, industry needs, and student career goals. By offering both structured options and customizable experiences, institutions can address gaps caused by shifting labor markets while also enhancing students' employability and career readiness quickly through micro-credentials vs. changing university curriculum, which is usually a lengthy and laborious process.

Career Education Practitioners

Career education professionals face increasing pressure to prepare students not only with theoretical knowledge but also with practical, industry-relevant skills. Digital skills training programs, including micro-credentials and competency-based modules, have emerged as a powerful mechanism to bridge the gap between academic curricula and employer expectations (Baker, 2020; Feija et al., 2021). By engaging students in structured digital learning pathways, even if your institute can't afford toolkits like Coursera, career education professionals can enhance student readiness for technology-driven roles, ensuring graduates possess both the technical expertise and applied competencies valued by employers.

One key benefit of digital skills programs is their alignment with industry standards and workforce needs. Unlike traditional coursework, these programs often focus on specific, high-demand skills such as data analytics, cybersecurity, software development, and digital collaboration (Brynjolfsson & McAfee, 2014). When students complete these programs, they frequently earn micro-credentials or digital badges that serve as verifiable indicators of proficiency. These credentials provide tangible evidence (e.g. certificate, digital badge) students can apply knowledge in real-world contexts, bridging the traditional divide between academic performance and workplace competence (Oliver, 2019). Moreover, integrating digital skills programs into co-op and work-integrated learning (WIL) pathways has been shown to improve student engagement and adaptability, particularly in rapidly changing work environments, as highlighted during the COVID-19 pandemic (Alanson et al., 2020).

Furthermore, micro-credentials and digital certifications enhance student visibility to potential employers. As hiring

practices increasingly leverage digital recruitment platforms (e.g., applicant tracking systems), students who hold recognized certifications can be identified more readily as qualified candidates for internships, co-op placements, and full-time positions (Tamoliune et al., 2023). For career education professionals, integrating digital skills programs into institutional advising and experiential learning initiatives not only increases student employability but also reinforces the institution's reputation for producing workforce-ready graduates.

The integration of digital skills training and micro-credentialing into higher education curricula offers significant benefits for students and institutions alike. These programs equip students with industry-relevant skills, provide validated evidence of competence, and enhance employability in competitive job markets. Career education professionals play a critical role in facilitating access to these opportunities, ensuring that graduates are prepared to meet evolving employer expectations and succeed in technology-driven careers.

Institutional Leaders and Administrators

The rapid evolution of technology and digital platforms has reshaped the landscape of higher education, creating both opportunities and challenges for institutional leaders seeking to prepare students for the workforce. Among these challenges is the integration of digital upskilling pathways into traditional co-op curricula and the connection to careers. Kolb (1984) said, "the experiential learning model pursues a framework for examining and strengthening the critical linkages among education, work, and personal development" (p. 14). Although this initiative may seem daunting amid growing public pressure on U.S. higher education to deliver results, it is essential to align experiential learning with modern career demands and ensure students receive a strong return on their investment in a degree. Co-op and work-integrated learning (WIL) are undergoing a profound transformation, moving beyond the traditional model of alternating academic and work terms to embrace broader, more flexible forms of experiential education (Coll & Zegwaard, 2018; Alanson et al., 2020). In this evolving context, administrators must thoughtfully consider innovative approaches to co-op that respond to the dynamic needs of students and employers alike.

A critical first step for institutional leaders is the adoption of intentionally flexible policies that redefine the parameters of co-op or WIL. Traditional, narrowly defined criteria for acceptable program formats can inadvertently constrain innovation, forcing faculty and administrators into rigid interpretations that may no longer reflect the realities of modern professional practice (Jackson, 2015). Instead, higher education institutions should embrace policies that account for iterative changes in the WIL landscape. As society increasingly integrates artificial intelligence, digital collaboration tools, and other emergent technologies into the workplace, experiential learning models must also evolve. Ten years from now, the definition of co-op is likely to diverge significantly from today's understanding, underscoring the need for foresight and adaptability in policy development (Gault, Leach, & Duey, 2010).

The global landscape of digital skills programs has expanded dramatically in recent years, creating a highly competitive and rapidly evolving industry. Institutions now pay to have access to a wide range of online platforms, micro-credentialing systems, bootcamps, and modular programs developed by universities, private companies, and international organizations (Baker, 2020; Radermacher & Walia, 2021). These opportunities vary in price depending on the number of users and content accessibility. This growing ecosystem offers opportunities for students to acquire in-demand skills in areas such as cybersecurity, data analytics, software development, and digital literacy, often with flexible delivery formats accommodating diverse learner needs. However, the proliferation of programs also introduces significant challenges for administrators tasked with evaluating quality, relevance, and alignment with institutional goals.

Educational leaders must carefully vet potential digital skills programs to ensure they fit both the mission and the resources of their institution. Factors for consideration include program credibility, alignment with labor market demand, faculty capacity to integrate digital content into existing curricula, cost-effectiveness, and technological infrastructure requirements (Oliver, 2019; Radermacher & Walia, 2021). Without a deliberate and research-based selection process, institutions risk investing in programs that fail to meet the educational needs of students or produce meaningful workforce outcomes. Strategic partnerships with reputable providers and evidence-based evaluation metrics can mitigate

these risks, enabling administrators to adopt digital upskilling pathways that are both innovative and sustainable.

The competitive environment of digital learning platforms further underscores the urgency for higher education institutions to invest in digital upskilling initiatives. When effectively integrated, these technologies can transform traditional workflows, enabling faculty and staff to deliver more personalized, competency-based learning experiences while simultaneously tracking and demonstrating student outcomes (Brynjolfsson & McAfee, 2014). However, successful adoption requires more than technological infrastructure—it demands leadership committed to cultural change, professional development, and strategic alignment across academic and administrative units (Baker, 2020).

Institutional leaders must also recognize the strategic value of partnerships with employers and industry stakeholders. By aligning digital skills programs with workforce needs, institutions can provide students with relevant, experiential learning that directly enhances employability (Ferns & Neill, 2018). These partnerships enable a feedback loop in which emerging skills trends inform curriculum development, ensuring that co-op remains both current and impactful. Moreover, embedding digital upskilling into co-op pathways can foster equity by broadening access to high-demand skills for diverse student populations, including those who may face barriers to traditional work-term placements (Oliver, 2019).

Overall, the integration of digital skills programs into higher education co-op curricula represents a complex but essential evolution. By adopting flexible policy frameworks, leveraging emerging digital platforms, carefully vetting programs for quality and alignment, and fostering industry partnerships, institutional leaders can ensure WIL remains responsive to the changing demands of the workforce. In doing so, higher education can position itself as a catalyst for both student success and societal advancement, preparing graduates not only for the jobs of today but for the rapidly evolving careers of tomorrow.

CONCLUSION

This case study and practical applications article demonstrates how embedding Coursera and LinkedIn Learning micro-credentials within co-op and alternative experiential programs meaningfully enhances student preparation for evolving workforce demands. In the two case studies presented, students not only gained technical proficiency and professional competencies but also acquired verifiable credentials serving as tangible evidence of employability. Importantly, the choice-based design of UC's implementation fostered learner agency, personalization, and deeper engagement. Equally significant was the integration of micro-credentials into existing curricular structures, which ensured accountability, reflection, and coherence without imposing substantial additional workload on faculty.

At an institutional level, this initiative underscores the importance of policy flexibility, strategic partnerships with reputable providers, and intentional scaffolding of digital learning within established experiential frameworks. These elements collectively illustrate how institutions can scale micro-credential integration in ways both sustainable and pedagogically sound. The broader implications for higher education extend beyond Information Technology and Cybersecurity. As technological, economic, and social forces accelerate change across disciplines, micro-credentials offer a portable and adaptable mechanism to keep experiential learning current with labor market realities. Moreover, their use can advance equity by expanding access to industry-aligned skills for students who face barriers to traditional placements.

Moving forward, we encourage faculty and administrators to work together to pilot, adapt, and rigorously evaluate micro-credential integration, with particular attention to student outcomes, employer feedback, and instructional practices. While still an emerging practice, micro-credentials hold considerable promise as a complement to experiential learning across fields. By adopting them strategically, institutions can strengthen their role in preparing graduates across all majors who are not only workforce-ready but also equipped for resilience and lifelong learning.

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