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Career preparation is the bridge between higher education, post-graduation success, and the evolving workforce. As the spotlight on career outcomes in higher education intensifies, institutions have a growing need to make data-informed decisions about where to invest their time and resources in preparing students for careers after graduation. The first special edition in this series focused on key foundations in assessing career preparation programs and outcomes (Yousey-Elsener & Mann, 2025). It then explored various ways institutions can move beyond first job and salary data to dig deeper into an institution's impact on career outcomes. This second special edition delves into how organizations and higher education institutions shape career success pathways.

Career preparation is at the heart of many challenges facing higher education today. Whether that challenge is the public perception of the value of higher education (Heckman et al., 2023; Tomlinson, 2019), student success outcomes (Dumford & Miller, 2017; Strada, 2022a), addressing social justice and equity issues (Clayton & Torpey-Sabie 2021; Jackson & Reynolds, 2013; Yousey-Elsener, 2024), mental health (Dryda, 2019; Redekopp & Huston, 2018; Tang et al., 2021) or the impact of student loans on student success (Lightcast 2023; Strada 2021; Strada 2022b), well implemented and evaluated career preparation programs play a key role in addressing them.

The authors in this special edition have developed innovative models for advancing the assessment of career preparation at both the institutional and program levels. Our second special edition first explores strategies used at the institutional level through a model of creating and implementing a data-informed university-wide strategy. It next delves into embedding the assessment of career preparation into existing institutional data strategies. Then, we examine the impact of specific career experiences and interventions on student success. These articles connect career development programs, such as AI, micro-courses, internships, career search skills, site visits, and networking events, with assessment methods like interviews, course assignments, and measures of career confidence and career self-efficacy. Pairing strategies with assessment allows practitioners to learn more about effective career readiness approaches and how to assess their effectiveness. We hope this edition provides career and assessment professionals with valuable tools to enhance their practice.

Through these two special editions of JSAIII, we have aimed to bridge the work of career and assessment professionals, fostering stronger alignment to enhance student career

outcomes. Now, we challenge you to take the next step. What insights will you apply from the research, strategies, and perspectives shared by our contributors? Which collaborations have been most effective on your campus? How does assessment already shape your career initiatives, and how can deeper integration between the two fields strengthen both?

These issues have connected rigorous research with practical strategies, offering a foundation for meaningful change. We hope they inspire new collaborations, future research, and transformative approaches that ultimately empower the students we serve.

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The Double-Edged Sword of AI in Career Development for GenZ and Future Generations

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Abstract: This article explores the implications of Generation Z (Gen Z) and future generations using Generative AI tools in their career searches, highlighting how these tools can benefit and harm job seekers. We critically analyze the advantages and pitfalls of Generative AI, focusing on issues such as voice, bias, industry trends, privacy, personal development, and decision-making. By understanding these dynamics and providing assessment strategies, we aim to offer actionable recommendations to better equip career educators and job seekers to thrive in a rapidly changing job market and prepare for the future of work.

Keywords: generative AI, career education, future of work, Gen Z, lifelong learning

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The integration of generative AI or artificial intelligence (AI) tools into the job search ecosystem has transformed how individuals approach career development, especially for the digitally native cohort Generation Z (Gen Z; born between 1997 and 2012). Gen Z is the first generation to grow up in a world defined by limitless information and constant digital connectivity. However, being pioneers in the digital age brings challenges, as Gen Z must navigate a rapidly evolving landscape without the guidance of previous generations (Katz et al., 2022).

With the open release of Generative AI in November 2022, students, general job seekers, and career educators are quickly realizing these tools can enhance productivity by automating routine tasks and streamlining various aspects of career development—including résumé building, job exploration, and interview preparation, offering unparalleled efficiency and a level of customization previously unattainable by the average job seeker (Duan & Wu, 2024). For example, students can input their interests and skills and have an AI recommend dozens of jobs they may never have known existed (Lang & Catrino, 2023). Similarly, suppose a job seeker is preparing for an interview. In that case, they can input the job they are interviewing for into an AI and do a practice interview for that specific job, while getting real-time feedback on their answers and recommendations to improve their responses.

However, the significant benefits of Generative AI are accompanied by substantial challenges, such as perpetuating biases embedded within their training data (Hacker, 2024), privacy and security concerns (Acquisti et al., 2016), a potential degradation of

critical thinking and interpersonal skills, and a decrease in in-person interactions (Khechine & Lakhal, 2018), which is often what actually lands people jobs (Asher, 2010).

Born into a digital age, Gen Z is quick to embrace new technology to automate tasks, rapidly analyze data, and find work (Chan & Hu, 2023). According to a 2024 Salesforce survey, 70% of Gen Z reported using Generative AI, and 52% of respondents believed it helped them make informed decisions (Salesforce, 2025).

Guidance and support must be provided to safely and effectively utilize this new, powerful technology. It is imperative that Gen Z, future generations, and career educators recognize the double-edged sword of using Generative AI tools in a career search: these tools can be immensely beneficial while also causing inadvertent harm and, when not used properly, limiting instead of expanding future possibilities.

Current State of AI in Career Development

The current state of AI in career development is elusive, characterized by rapid and continuous evolution. AI is transforming college career services, particularly in areas such as job matching, résumé optimization, and personalized career guidance. Recent studies indicate that AI-driven tools are integral to modern human resource management, with significant advancements in digital job-matching platforms and algorithmic fairness (Bankins, 2021). However, challenges related to transparency, bias, and the ethical use of these technologies persist (Albaroudi et al., 2024). By understanding both traditional and Generative AI, career professionals can better address these evolving challenges while leveraging the transformative potential of these technologies.

Traditional AI has long been embedded into career development processes through digital job-matching platforms, résumé scanning software, and algorithm-based personalized career guidance. These applications focus on optimizing existing processes and improving efficiency. In contrast, Generative AI represents a newer frontier, offering dynamic capabilities such as generating tailored résumés, automating resume screening, simulating interview scenarios, and offering hyper-personalized career advice, such as creating personalized career strategies based on nuanced inputs. These systems use sophisticated algorithms to analyze large datasets, enabling them to make recommendations for job seekers based on patterns in both internal company data and external sources like social media (Bujold et al., 2023). The excitement of experimenting with Generative AI is comparable to unveiling a new technological gadget, brimming with potential and promise. When functioning effectively, Generative AI enhances efficiency and can yield impressive outcomes, such as matching job seekers with ideal roles or enabling companies to identify top talent quickly (World Bank, 2023). However, Generative AI outcomes are not always predictable, and success largely depends on how AI is implemented and monitored. Career educators are uniquely situated to educate and equip students to use these powerful tools to their advantage instead of their detriment.

Navigating the complexities of AI requires adaptability, skepticism, and a commitment to ongoing learning. As technology advances, it is imperative to strike a balance between human-driven learning and machine-assisted processes (Khechine & Lakhal, 2018).

Generative AI is a powerful tool, but it is not a solution for all the challenges career development professionals face. Practitioners must approach these technologies critically, ensuring that AI is used ethically and responsibly (Bujold et al., 2023). Staying informed about the latest advancements is crucial, but equally important is maintaining a critical perspective on emerging trends to safeguard against the unintended consequences of Generative AI (Laberge et al., 2020).

The future of Generative AI in career development will be shaped by how effectively career educators and job seekers navigate and manage these tools. Embracing uncertainty, taking risks in innovation, and learning from successes and failures will be key to successfully integrating Generative AI into career development practices. As the landscape continues to evolve, adaptability will remain the most valuable asset for professionals in the field (Westman et al., 2021).

A Path Forward for Career Educators

By critically examining both the potential advantages and the inherent risks associated with Generative AI technology and proposing key assessment strategies, we aim to improve job seeker's success, advance the field of AI-driven career education, and offer a balanced perspective to guide career educators and job seekers to leverage Generative AI effectively while remaining cognizant of the need to maintain and enhance their skills and judgment. Approximately 50% of job seekers currently utilize AI tools like ChatGPT to generate their CVs and cover letters, increasing the volume of applications but potentially lowering their quality (Navarra, 2023). Through this exploration, we hope to illuminate how Generative AI can be utilized judiciously, ensuring it serves as a complement to, rather than a substitute for, human capabilities in the journey of career education and development.

This section offers six recommendations for career educators and job seekers. We seek to comprehensively equip career educators and Gen Z job seekers with the insights necessary to navigate the complexities of a technology-driven job market, fostering a more informed and strategic use of AI tools in their career development strategies. In doing so, we aspire to help strike a balance between embracing technological advancements and retaining the irreplaceable value of human analysis, reflection, and personal perspectives in one's professional journey.

Mitigating Bias in AI Outputs

Given that Gen Z is one of the most racially and ethnically diverse generations to date, their engagement with Generative AI raises critical questions about bias in algorithms and the representation of their identities in AI outputs, which directly impacts their trust and reliance on these tools (Fry & Parker, 2018). Generative AI has many risks in career development, including significant concerns about over-reliance on AI algorithms that perpetuate biases inherent in their training data. Generative AI models, such as ChatGPT and other career-focused AI tools, are trained using massive datasets composed of publicly available text, curated sources, and, in some cases, proprietary content. These models learn by identifying patterns in the data, allowing them to generate responses, recommend jobs, or optimize résumés. However, suppose the training data contains

biases, such as underrepresenting certain demographic groups or historical hiring inequities. In that case, AI outputs perpetuate historical biases in their training datasets, leading to discriminatory practices in job matching and candidate selection processes (O'Neil, 2016). Economic biases that exist worldwide, such as the gender and racial pay gap and unequal hiring practices, can become exacerbated and magnified when companies use AI systems trained and built on biased or incomplete data sets (Arora et. al, 2023).

Disturbingly, seemingly minor discrepancies in training data can lead to amplified outcomes in complex systems, like AI algorithms, thereby magnifying minor biases present in training data with the potential for significantly unfair results (Ferrara, 2024a; Ferrara, 2024b). These biases can manifest in multiple ways in the career exploration journey, including resume screening bias, job recommendation algorithms, interviewing tools, salary prediction and negotiation bots, career exploration and development, and networking and mentorship suggestions.

Résumé Screening Bias

AI-driven applicant tracking systems (ATS) are widely used to screen résumés and rank candidates before a human sees them. Suppose these systems are trained primarily on data from successful candidates with similar demographic traits, such as gender or race. In that case, the AI may inadvertently favor candidates who fit this profile, excluding equally or more qualified candidates from different backgrounds. For instance, if historical hiring data shows a preference for candidates from certain prestigious universities, the AI might deprioritize or filter out résumés from candidates who attended less well-known schools, regardless of their qualifications. Recent studies have shown that AI résumé review systems are biased, significantly favoring White-associated names in 85.1% of cases and disadvantaging Black males in up to 100% of cases (Wilson & Caliskan, 2024).

Job Recommendation Algorithms

Many online job platforms use AI to suggest positions to users based on their previous searches, applications, and profile information. If these algorithms are biased, they might recommend jobs that reinforce existing career stereotypes, such as suggesting technical roles predominantly to men and administrative roles to women, thereby limiting exposure to opportunities that could have resulted in a better fit based on skills and interests (Ozer et al., 2024).

Interviewing Tools

AI-powered interviewing tools that analyze candidates' speech patterns, facial expressions, or body language may discriminate against individuals based on accents, speech impairment, or physical disabilities (Harwell, 2022). Such biases can disadvantage candidates who do not conform to the specific models of "ideal" communication or behavior that the AI is programmed to identify as successful, disproportionately affecting those from diverse backgrounds or with neurodiverse conditions (Albaroudi et al., 2024).

Salary Prediction and Negotiation Bots

AI systems designed to guide or automate salary negotiations may use historical salary data that reflects gender or racial pay gaps. If not carefully adjusted, these systems could perpetuate wage inequalities by suggesting lower salaries to women or minority groups based on biased historical payment data on gender, age, and/or previous title (Aaijaz et al., 2024).

Career Exploration and Development

AI tools used within organizations to suggest potential career paths to employees can limit professional growth by perpetuating a "glass ceiling" that already exists for women and minorities, as these systems are trained on data sets of people already in power, who are often male and white (Buolamwini, 2023). For example, a system might suggest career advancements more frequently to employees of a certain demographic, ignoring the potential and aspirations of others not recognized due to biased training data, which can contribute to professional disparities that disadvantage minority groups (Kordzadeh & Ghasemaghaei, 2021).

Network and Mentorship Suggestions

Algorithms that drive many online social and connection tools, like social media, are already susceptible to homophily, where users of similar backgrounds and viewpoints are grouped together and more often appear in each other's feeds (Weber et al., 2022). Platforms using AI to connect users with mentors or professional networks could exhibit bias by favoring matches based on demographic similarities, such as connecting individuals of the same race or gender. Such biases may restrict diverse networking opportunities for people in underrepresented groups.

Hiring Bias

On the employer side, recent studies have highlighted the persistence of bias in Generative AI systems across various sectors, including recruitment. For example, researchers at the MIT Media Lab have demonstrated that algorithms can develop biases based on the data they are fed, often mirroring societal prejudices related to race, gender, and socio-economic status (Mitchell et al., 2019). Particularly concerning in the context of job applications is where such biases could result in qualified candidates being overlooked due to inherent prejudices in the AI's decision-making process (Cai et al., 2024), such as the infamous Amazon hiring scandal where women résumés were screened out due to a predominantly male training data, which led the AI to "prefer" male candidates (Dustin, 2018). Without addressing these biases, Generative AI systems risk reinforcing structural inequalities in the hiring process (Albaroudi et al., 2024). To combat these issues, it is imperative for career educators to encourage students to adopt a multifaceted approach. Remaining "the human in the loop" is one of Mollick's (2024, p. 52) imperative principles for living and working with AI; Mollick (2024) cautions that we must remain vigilant and constantly refine and adapt AI-generated output.

In other words, human oversight is crucial; job seekers and career educators must resist delegating everything to AI and recognize that AI tools have weaknesses and blind spots. We suggest career educators support job seekers in actively seeking diverse perspectives

and integrating human oversight into the AI output review process to detect and correct potential biases. To support this process, we provide suggestions and recommendations on human oversight and audits in the final section of this paper. We also suggest seeking out platforms and tools known for their commitment to diversity and inclusion, as these companies are more likely to employ algorithms audited for bias. For example, platforms like LinkedIn, Pymetrics, and Eightfold AI have integrated bias-reduction measures in their algorithms to promote fair hiring and career development (Karthikeyan, 2023). On the employer side, HR professionals must review Generative AI recommendations to ensure fairness and consider contexts that AI might miss. Having a dual approach can help mitigate potential biases introduced by AI, ensuring that one's career exploration journey is not solely based on, and therefore limited by, algorithmic output (Shahriar et al., 2021). As AI continues to evolve, continuous vigilance and adaptation of these strategies ensure that AI aids rather than hinders fair employment exploration and practices.

Reinforcing Mollick's principle to be "the human in the loop" (2024, p. 52) and the imperative to seek out diverse perspectives and integrate human relationship building and input into a career education process, a successful job search can be supported, but not entirely implemented by Generative AI tools.

Preserving Authenticity in AI-Assisted Communications

The authenticity of communication—whether in résumés, cover letters, or LinkedIn profiles—plays a pivotal role in how potential employers perceive a job candidate (Song et al., 2020). The integration of AI tools in creating such content, while beneficial for enhancing structure and grammar, presents a risk: the dilution of the personal narrative that uniquely defines each candidate. AI technologies can negatively influence perceptions of job seekers' warmth, social competence, social attractiveness, and hiring desirability (Weiss et al., 2022). When AI systems generate content based largely on general data and common templates, the resultant documents might lack the personal touch that resonates with human recruiters, potentially resulting in less engaging and less credible applications.

To address this issue, career educators should encourage job seekers to build a strong foundation for their professional documents by drafting documents independently of AI. Starting with their work allows individuals to infuse their unique voice and personality into their applications, establishing a tone that authentically represents their personal brand and professional ethos. Once the foundation is laid, AI tools can then be employed to refine content by enhancing language, adding clarity, correcting grammatical errors, and suggesting alterations for impact, ensuring that the narrative remains true to the candidate's voice while benefiting from the precision and efficiency of AI (Cardon et al., 2023a).

Furthermore, the process of revising AI-assisted outputs should be iterative, involving multiple rounds of feedback from a career educator, trusted mentors, or peers. Feedback is essential as it provides external perspectives on how well the AI modifications align with the candidate's intended message and personal style. It also offers an opportunity to identify where AI might have inadvertently introduced generic phrases or concepts that detract from the individual's unique characteristics. Career educators can encourage job

seekers to engage in iterative revisions with AI while maintaining control over the narrative, ensuring each iteration brings the content closer to the optimal balance of authenticity and professionalism. Such an approach not only preserves the personal touch but also maximizes the effectiveness of AI tools, leveraging technology to enhance human-driven content rather than replace it (Cardon et al., 2023b).

By adhering to these practices, career educators can teach students how to utilize AI to their advantage without compromising the authenticity of their communications. Strategically using the technology ensures their applications not only stand out for their high quality but also for their genuine representation of the candidate's individual journey and professional aspirations.

Ensuring Personalization Through Specific & Iterative Input

Due to their reliance on extensive and often generalized datasets, Generative AI systems may default to producing generic outputs that do not capture a job seeker's unique attributes and fail to adequately distinguish one person, or job seeker, from another (Pratama et al., 2023). To counteract this, detailed customization of inputs is essential to ensure outputs truly represent the candidate's unique skills and experiences. Career educators must encourage job seekers to customize their interactions with AI tools by inputting detailed, personalized information (Zavalevskyi et al., 2024). Providing specific prompts to the AI generates outputs that more accurately reflect the individual's unique professional qualifications and career aspirations.

To enhance personalization, career educators can help job seekers define and then write about their specific interests and skills, formal and informal education, and specific items from their résumé, and/or industry-specific keywords. Once they receive an AI output, career educators can coach job seekers to continuously refine their AI inquiries to receive more nuanced, personalized output specific to their goals. Consistent interaction allows for increasingly refined customization and more personalized AI assistance (Mollick, 2024). Increased personalization can also lead to higher quality job matches as résumés go through ATS, as more personalized applications are more likely to pass through ATS and catch the attention of hiring managers (Holm, 2020; Novaković & Dražeta, 2024).

Recent advancements in AI, particularly in Natural Language Processing (NLP) and adaptive machine learning models, have significantly enhanced the personalization capabilities of AI tools. NLP technologies now enable AI systems to interpret complex aspects of human language more effectively (Carrasco, 2024). These developments are particularly pivotal in the context of career development, as personalized input and output can substantially impact a job seeker's success and ensure more nuanced matching between job descriptions and applicants' résumés. Deeper textual analysis helps in identifying not just keywords but also the context and implied qualifications, leading to more accurate job recommendations (Carrasco, 2024).

Adaptive machine learning models have also enabled AI systems to learn from user feedback and interaction history. AI models adjust their algorithms based on the changes users make to AI-generated recommendations, thereby improving their accuracy over time

(Belle et al., 2024). For instance, if a job seeker consistently modifies suggestions in a particular way, the AI learns to incorporate such preferences in future outputs. Li et al. (2023) found that Large Language Models (LLMs) have a grasp of emotional intelligence, and their performance can be improved with emotional prompts. Continuous learning from interaction ensures that AI tools become increasingly effective at tailoring their assistance to meet individual needs and preferences (Belle et al., 2024), making the job search process more efficient and customized. When discussing AI in the job search, it is important to recognize that a variety of tools exist beyond the commonly known ones, such as ChatGPT. Each tool is designed for different aspects of the job search process. For instance, LinkedIn's AI-driven job recommendations personalize listings based on a user's profile and activity. At the same time, Resume Worded provides AI-powered feedback on résumés and LinkedIn profiles by analyzing industry and recruitment trends. Paradox's AI recruiting assistant supports job seekers by automating interview scheduling and providing real-time feedback. Platforms like Eightfold AI also leverage deep learning to assess career trajectories, understand workforce development trends, and suggest opportunities based on evolving user behavior. By strategically and intentionally integrating these tools, job seekers can enhance their search with AI that continuously adapts to their needs.

Prioritizing Privacy and Data Security in AI Tool Usage

Using AI for a career search often involves sharing personal and sensitive information, like work history, salary expectations, skills, certifications, personality assessments, social media profiles, location, and career goals. While these details enable more tailored job recommendations, they also raise privacy concerns if the data is mishandled or shared without consent, highlighting the need for secure data management and transparent practices to protect users' information. However, research suggests Gen Z is relatively unconcerned about data collection agreements. A 2022 McKinsey & Company study found that Gen Z is the most likely generation to allow apps and websites to collect their data without fully understanding how it will be used. Even when aware of these practices, many still proceed, as over 40% reported granting access to personal information in exchange for perks like discount codes or free services. This willingness to trade personal data for convenience underscores the importance of educating Gen Z job seekers on digital privacy and ensuring AI-driven platforms maintain ethical data practices.

If a platform's data handling policies are inadequate, personal data can be exposed and misused (Albaroudi et al., 2024). As the use of Generative AI in recruitment and career services continues to grow, concerns about how personal data is stored, shared, and potentially exploited have and will continue to become more pronounced (Bankins, 2021). Career educators must encourage job seekers to strike a balance between providing enough information for personalized recommendations, like one's work experience, skills, and career goals, while protecting their privacy and remaining cautious about uploading any sensitive information, such as one's home address, exact salary history, detailed financial goals, or highly specific certifications that could be misused, like security clearances. By adopting these precautions, individuals can safeguard their data and personal information in the increasingly AI-driven job search landscape.

Integrating AI with Real-World Connections and Experiential Engagement

While Generative AI tools in job searching offer the convenience of speed and scalability, they inherently operate within the confines of their programmed algorithms and data sets. These tools categorize and recommend opportunities based on specific, often static criteria such as keywords, qualifications, and previous job titles. In addition, since AI models are trained on historical data and updated periodically, they may not accurately reflect real-time developments in certain fields (Brynjolfsson & McAfee, 2022). In rapidly changing sectors, outdated recommendations can arise, limiting job seekers' access to a comprehensive range of potential career paths, especially in emerging or rapidly evolving fields (Davenport & Kirby, 2020).

In addition, despite their ability to process large datasets, AI algorithms often lack the nuanced understanding required for significant career choices, particularly when considering individual preferences, aspirations, and the unique factors involved in career paths (Schemmer et al., 2023). Over-reliance on AI may lead to decisions that are misaligned with personal goals or market realities. To mitigate such risks, career educators can help job seekers integrate their judgment with AI-generated outputs and additional career assessment tools, such as interest inventories and personality tests. Career educators can serve as a sounding board and reference to support the job seeker to reflect and connect with industry experts who can provide personalized insights, which is more likely to lead to successful and fulfilling outcomes than basing one’s career decisions on data alone (Rodgers et al., 2023).

In the realm of career development, over-reliance on AI for important decisions can result in a disconnect between personal preferences and the objective data provided by algorithms. AI, while useful for generating suggestions, may not account for an individual’s unique career aspirations or the subtleties of specific industries, nor will it ever replace the experience of shadowing or conducting an informational interview, which can unearth realities of a job that might be missed when only searching online.

Many college career centers including Tulane University, Bowling Green State University, Trinity College (CT), Johns Hopkins University, University of Delaware, and Dartmouth College utilize a "life design" approach to career exploration, teaching a creative, iterative, human-centered problem-solving methodology that can be applied to navigate change and transition throughout life (Lang, 2021). The field of “life design” highlights the power of prototyping, or building an experiment to test out an area of interest, as the idea of a job or how it is written on paper or framed on the internet might be very different than experiencing what that job is like firsthand (Lang, 2021). While AI can be a great starting point for exploration of potential career pathways, it will never replace the lived experience of shadowing someone on the job or conducting a career conversation (or informational interview). Therefore, it is essential to complement AI recommendations with personal insights, professional consultation, and real-world experience via shadowing or having a career conversation with someone in a desired field (Burnett & Evans, 2016).

To counteract the limitations of AI, career educators can help job seekers map out and adopt a more holistic approach to career decision-making. By balancing AI use with

experiential learning, job seekers can ensure a more holistic approach to career development. This involves blending AI tools with more traditional and proactive job searching methods, including engagement in industry-specific events, utilization of personal networks, active participation in professional associations, and volunteering and internships.

Engagement in Industry-Specific Events

Participating in conferences, workshops, and seminars relevant to one's field provides valuable learning opportunities and opens doors to networking with industry leaders and peers. Such events often serve as a platform for companies to scout for talent and may offer job opportunities not advertised widely (Asher, 2010). Seeking the expertise of industry professionals provides up-to-date insights that are more tailored and contextually relevant than the information generated by AI systems (Oancea et al., 2023). Combining AI-driven insights with real-time information from these sources ensures that individuals remain well-positioned to adapt to the dynamic landscape of their chosen fields.

Utilization of Personal Networks

“Employee referral hiring” refers to organizations leveraging social networks to fill job openings with new hires, a method that remains popular among many employers (Schlachter & Pieper, 2019). A 2022 Aptitude Research survey found that 82% of U.S employers use employee referrals to source, identify, and shortlist candidates (Laurano, 2022). Engaging with one’s network can also uncover hidden job opportunities through referrals or inside information about upcoming openings (Stenken & Zajicek, 2009). Active engagement in industry events and networks leads to expanding one’s network through building individual relationships, which is what ultimately lands people jobs (Asher, 2010). Industry experts can also provide personalized, human insights that a job seeker might miss if only utilizing AI tools in their search.

Active Participation in Professional Associations

Membership in professional associations can provide access to industry-specific resources, career advice, mentorship programs, and exclusive job listings. Some organizations find and filter candidates by their respective professional affiliations (Kehoe et al., 2022). These associations often have internal job boards or newsletters that feature opportunities not available elsewhere.

Volunteering and Internships

Engaging in volunteer work or internships, especially in desired industries, can significantly enhance one's professional network and increase visibility to potential employers. These roles sometimes lead to full-time job offers and are excellent ways to demonstrate commitment and gain practical experience (Galbraith & Mondal, 2020). The National Association of College and Employer’s (NACE) 2024 Internship and Co-op report found that 85% of responding employers indicated internships are the top recruiting method for their investment of time and money, far ahead of career fairs (9%), on-campus visits (3%), and participating in campus panels (3%; Gatta et al., 2024).

Maintain Human Oversight

AI can offer valuable support in career decision-making, but it will not replace human judgment. Adopting these diversified strategies allows job seekers to access a broader array of opportunities, thereby considering a wider variety of career options that AI might overlook and enhancing their prospects in a dynamic job market. These in-person, human-centered approaches ensure job seekers discover roles more closely aligned with their career aspirations, skills, and values, rather than predetermined by their past accolades and job titles. Moreover, such an approach helps build a robust professional network that offers support and guidance throughout one's career. By maintaining human oversight, career educators and job seekers remain “the human in the loop” (Mollick, 2024), deepening and fine-tuning AI output in a way that would be entirely missed if students relied solely on AI for all their career decisions.

Furthermore, over-reliance on AI for career guidance can impede personal and professional growth by discouraging independent problem-solving and decision-making, both of which are critical in today’s job market (Bostrom, 2022). While AI offers useful recommendations, job seekers must actively engage in self-directed learning and critically evaluate the content provided by AI tools. Adopting such an approach, individuals can develop the necessary cognitive and analytical skills to thrive in their respective fields. Additionally, real-world experiences like internships and hands-on projects can complement AI-driven insights and contribute to more comprehensive skill development (Chiekezie et al., 2024).

Career educators can guide students in leveraging AI to enhance their career search while also encouraging them to build professional networks, attend industry conferences, seek guidance from experts closely connected to real-time developments, engage in self-reflective processes, and resist outsourcing all the “work” to AI. By combining AI-driven insights with up-to-date advice from industry professionals, this approach ensures that students receive both cutting-edge information and practical, relevant guidance for informed career decision-making.

Assessing AI’s Impact in Career Development: Measuring the Double-Edged Sword

Our final recommendation is that job seekers and career educators supporting the career search embrace a culture of critical reflection and continuous assessment. Just as we teach job seekers to critically evaluate job offers and career paths, we must equip them with the skills to evaluate the tools that are supposed to aid them and thereby gauge the effectiveness and fairness of AI in their career search. To navigate the complexities of AI in career development, it is essential to implement robust assessment strategies, ensuring these tools enhance, rather than hinder, student success. The methods below provide career centers with frameworks for measuring the effectiveness of AI tools and mitigating potential biases.

Conduct Bias Audits to Unveil Hidden Prejudices

Research has found AI-based hiring tools disproportionately favor white male candidates in résumé screening, often due to biases embedded in training data (Wilson & Caliskan, 2024). Inspired by the work of Buolamwini (2023) and Maudslay et al. (2019), we

recommend that career centers conduct regular, rigorous audits of AI tools to identify and mitigate biases by testing outputs across diverse student personas (e.g., varying names, genders, institutions). A bias audit could include inputting identical résumés with different names (e.g., male vs. female, ethnically diverse names) into AI résumé screening tools; comparing job recommendations for students with similar qualifications but different demographic backgrounds; or analyzing whether AI recommends diverse career paths or reinforces traditional gender and racial career stereotypes. For example, AI-based job-matching tools have been found to steer women toward administrative roles and men toward STEM careers, perpetuating historical labor market inequalities (Özer et al., 2024). Career educators should assess whether and how AI tools expand or limit student career possibilities.

Assessing Student Engagement with AI in Career Services

To gauge the impact of AI tools on student confidence and efficacy, career centers can assess:

- Frequency of AI use, including how often students use AI tools such as ChatGPT, LinkedIn AI, or résumé optimization software.
- Types of AI interactions, including what career-related tasks (e.g., résumé building, interview practice, job search) students used AI for.
- Perceived value of AI guidance, including whether students find AI-generated career advice useful, misleading, or biased.

Surveys can be designed using Likert-scale questions and open-ended responses to track qualitative and quantitative shifts in student engagement (Westman et al., 2021). A sample question might include: “How prepared do you feel for interviews after using AI simulations?” To understand further, qualitative methods such as focus groups and one-on-one interviews can provide deeper insights into how AI shapes students' career exploration. Facilitators can ask questions such as: “How has AI influenced your career decisions? What challenges have you encountered when using AI for job applications? Do you feel that AI has improved your job search effectiveness?” These discussions can help career educators assess whether students are over-relying on AI tools and/or struggling with interpreting and acting on AI output. By analyzing shifts in self-reported confidence and perceived preparedness, career educators can fine-tune their training programs to better align with student needs and aspirations.

Tracking AI Tool Engagement Metrics

Many career service offices already offer AI-powered platforms, such as VMock for résumé review and Quinncia, Big Interview, or others for mock interviews. Any center using an AI-powered platform can track:

- Engagement metrics, including how frequently students interact with AI-driven career tools.
- Completion rates, including how many students complete AI-recommended résumé revisions or interview preparation steps.
- Outcome-based engagement: correlating AI use with improved résumés, cover letters, interview performance, and successful hires.

By analyzing these data, career educators can determine whether AI tools enhance career readiness or whether students disengage due to frustration, misinformation, or bias (Laberge et al., 2020).

Tracking Internship and Job Placement Outcomes

Tracking the correlation between AI tool engagement, support, and actual employment outcome is crucial. Key metrics career centers can track include:

- Interview conversion rates: Do students who use AI résumés and job-matching tools secure more interviews?
- Job placement rates: Are AI-assisted job seekers more likely to receive offers?
- Student confidence levels: Do AI-enhanced job seekers report greater confidence in the application process?

Kaashoek et al. (2024) warned that "applicants could become indistinguishable as everyone turns to generative AI to create their materials" (p. 6), raising concerns about homogeneity and a loss of individual differentiation. Similarly, Weiss et al. (2022) found that AI-driven interview feedback may improve applicant responses but often lacks contextual understanding of emotional intelligence and nonverbal cues, which remain critical in hiring. As such, testing the effectiveness of AI platforms, from resume builders to interview preparation tools, is crucial to understanding if their usage leads to increased job placement. Taking this a step further, career centers could partner with institutional research offices to compare placement rates of students who used AI tools versus those who did not, while controlling for variables like GPA and major.

Conclusion

Using AI tools in tasks like résumé building, job exploration, and interview preparation has revolutionized the way that the digitally native generation Gen Z approaches career progression, and the integration of Generative AI into career development offers unprecedented opportunities for efficiency, personalization, and innovation in job searches (Lang & Catrino, 2023). AI's potential lies in its ability to automate and streamline processes, providing job seekers with personalized recommendations based on vast datasets. While these technologies provide significant advantages, their implementation is not without challenges and limitations. Issues such as algorithmic bias, data privacy concerns, and the risk of over-reliance on technology underscore the need for a balanced, human-centered approach. To ensure effective and useful AI output, job seekers must actively engage with AI tools by providing specific, detailed inputs and continuously refining their interactions. Furthermore, the importance of human insight cannot be overstated. Personal judgment, industry expertise, and interpersonal interactions remain crucial elements in making well-rounded career decisions.

Career educators play a vital role in helping Gen Z students and future generations engage in self-directed learning and critically assess AI-generated recommendations; this strategy will not only enhance one's career search but will also teach students how to engage with AI in other contexts, thereby cultivating skills needed for long-term success. Through strategic implementation of assessment strategies, career educators can effectively navigate the double-edged sword of AI in career development. Only by

remaining vigilant and continually refining one's approach based on data-driven insights and ethical considerations can AI fully empower Gen Z and future generations in their career journeys, fostering a future where technology enhances rather than diminishes human capabilities.

The future of career development depends on striking the right balance between embracing technological advancements and maintaining the irreplaceable value of human judgment, personal growth, and ethical responsibility. To fully harness the potential of Generative AI, it is essential to tailor resources and support for Gen Z and future generations, emphasizing AI literacy, including understanding bias, ethical considerations, and strategies for maximizing its applications, which can empower these generations to utilize AI effectively while being mindful of its limitations. Career educators and job seekers must remain vigilant to the ethical use of AI, address biases, and ensure privacy and data security. By integrating AI with human oversight and leveraging traditional methods, such as networking and professional development, individuals can navigate the rapidly changing job market while remaining in charge and in control of their personal development and ultimately, their forward professional pathway.

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Measuring Developmental Career Readiness

A Cross-Campus Imperative

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Abstract: There is growing research that career success is a key motivator for students pursuing higher education, yet career development often exists in a silo on campus, and there are increasing calls for a more integrated approach. In this case study from Smith College, career development professionals have collaborated with institutional research to work toward systematic measurement of career learning prior to graduation and first-destination outcomes. This allows for real-time data on competency gaps over a student's developmental journey and the opportunity for more targeted use of programmatic interventions.

Keywords: career development, institutional research, career competencies, career learning, data-driven

Growing research shows that career success is a key motivator for students pursuing higher education (The Career Leadership Collective, 2022; Gallup & Strada, 2018). In response to new institutional imperatives to demonstrate return on investment, many career centers are moving to implement career readiness competencies. Yet, assessing these career competencies is less common (NACE, 2025). Across many institutions, the focus of assessment is still on job outcomes rather than competency building. This sentiment is noted in an American Association of State Colleges & Universities (AASC&U) 2021 report entitled, *Integrating Career Advising for Equitable Student Success: A Higher Education Landscape Analysis*. The report emphasizes the importance of progressive career competency development versus post-graduation outcomes alone: “Career outcomes are a part of equitable student success and must not be reduced to only the first job, or salary measurement” (AASC&U, 2021). This paper explores an attempt to deliver cross-campus assessments of students’ perceived career readiness to support targeted real-time interventions for students before graduation and first-destination outcomes.

Broadly speaking, we define career readiness as demonstrated preparedness to successfully enter the workforce and advance in one’s career. The National Association of Colleges and Employers (NACE) describes it as “a foundation from which to demonstrate requisite core competencies that broadly prepare the college educated for success in the

workplace and lifelong career management" (NACE, 2024). NACE further describes a set of eight core competencies supporting career readiness: career and self-development, communication, critical thinking, equity and inclusion, leadership, professionalism, teamwork, and technology. Further research has established relationships between career readiness and learning processes such as connecting to resources for career navigation, identifying and following through on career planning steps, and networking with mentors (The Career Leadership Collective, 2022).

Measuring the development of career readiness competencies throughout a student's academic journey is essential to recognizing equity gaps, identifying needed interventions, and ensuring that the institution effectively meets the goals of a student's career planning while they are still on campus. If we know, for example, that a certain subpopulation has historical barriers to job entry, it is important to consider a set of related questions early and often, such as: To what degree do students in this population have access to career resources? Are there structural barriers to their development of career readiness competencies? What levels of engagement do they have with various career support resources, and how does this change over time? When we know more about how students perceive their career readiness over time, we are better equipped to provide research-supported, targeted interventions while they are still at the institution.

This learning-oriented approach to career readiness assessment is important amidst institutional imperatives to demonstrate the return on investment of a college education (The Career Leadership Collective, 2022; Gallup & Strada, 2018). To effectively demonstrate degree value, colleges need to adopt data-driven tools to intervene with targeted skill-building well before graduation, rather than waiting for post-graduation surveys.

Challenges of the Current Approach: Data Gaps and Information Silos

While campuses may perceive that they are adequately tracking career development, most are not. In their Career Advising Integration Survey, AASC&U found that nearly 42% of campuses believed that they are tracking students in their career development over time (AASC&U, 2021). However, when asked about the underlying data, respondents mostly referenced event attendance and career advising appointments, with very few integrating indicators such as career networks, career decidedness, or career confidence, and only 15% of campuses reported correlating career engagement data with retention rates, graduation rates, or career mobility over time (AASC&U, 2021). This represents a gap in our understanding of the qualitative experience of student career learning, which is only magnified when taking an equity focus. If our goal is to understand the full impacts of identity on learning outcomes and career mobility, gap analysis needs to go beyond simply cross-tabbing engagement with demographic information.

When thinking about career-related data collection, campus partners often assume that this is an effort of the career center, perhaps with support from institutional research for an annual first-destination survey of recent graduates (NACE, 2016). However, there is already a much broader ecosystem of offices collecting independent data related to career

readiness across most campuses, ranging from alum engagement to experiential learning and more. Some key units may include:

- Academic Advising
- Alum Relations
- Campus Employment
- Experiential or Service Learning
- Faculty-driven capstone and research projects
- Financial Aid and Payroll
- Multicultural Affairs or Equity and Inclusion Offices
- Student Engagement
- Study Abroad / Study Away

Too often, these departments do not collect data in a centralized data system for unified reporting, which creates barriers to comprehensive strategic planning and would require large, expensive institutional commitments in order to redesign and organize data sources. It may take time for institutions to move in this direction, so we propose that existing cross-campus surveys be leveraged to better address questions related to career learning. Given the institutional importance of career outcomes and the existing structures for surveying and analysis within institutional research, we see a natural, largely untapped opportunity to work jointly toward systematic measurement of career learning throughout a student's time at our institution.

This article focuses on one institution's efforts to integrate and analyze career data collection across campus to support equitable student outcomes. We intend to broaden a cross-institutional dialogue about how to center developmental career learning across campus data collection, supporting strategic interventions well before the first-destination survey.

Our Context at Smith College

Smith College is a private, nonprofit liberal arts institution in Western Massachusetts, with over 2,500 undergraduates and 300 graduate students. One-third of the undergraduate student body are students of color, 13% are international students representing 68 countries, and 17% are first-generation college students, with 60% of undergraduates receiving need-based aid (Smith College Institutional Research, 2025). Under the Carnegie Classification of Institutions of Higher Education, Smith is profiled as a four-year, full-time, more selective, and lower transfer-in. The vast majority of students choose to live on campus for all four years in 41 self-governing house communities that accommodate between 10 and 100 students each. Smith is among the largest women's colleges in the United States, with students from 46 states and 78 countries. Smith's campus culture places a high priority on equity and inclusion, community, and leadership (Smith College, 2025).

Mutual Benefits of Collaboration

As colleagues at Smith College's Lazarus Center for Career Development and Office for Institutional Research, we have worked collaboratively to identify four core learning

outcomes to assess career readiness and developed four survey questions to measure those learning outcomes. Additionally, we leveraged existing institutional survey deployments to evaluate learning outcomes across a student's developmental journey, from prior to their first class through the spring term of their senior year. As a result, we have identified how collaboration between career development and institutional research can benefit other institutions in streamlining data to improve the measurement of career development.

Pre-existing institutional surveys at Smith College have a much higher response rate than new surveys deployed for the first time. Students are over-surveyed in higher education, which leads to lower participation over time (Porter et al., 2004). It takes time to normalize a new survey instrument and convince students that it is worth their attention. Even a highly regarded national survey, the National Survey of Student Engagement (NSSE), has response rates that vary across institutions with an average response rate of just 28% in 2019 (NSSE, n.d.). By contrast, surveys deployed by our institutional research office at Smith regularly see response rates between 40-80%, which means they can produce data that can be more generalizable across the student body. The higher response rates allow for disaggregation between minority groups without concerns of re-identification, the process of breaking confidentiality by reporting on an individual's response as opposed to multiple responses combined, due to small group sizes. It is important to identify strategies and resources for enhancing educational equity for subpopulations within the student body (Teranishi et al., 2020).

Collaboration is essential for a productive institutional research office. Fostering relationships with other offices enables institutional research to understand the nuances of information and analysis that will further contribute to strategic planning and decision-making (Howard et al., 2012). Institutional research offices are more efficient when partners across the institution can identify predictable outcomes that align with their department's goals. Using key performance indicators to assess these goals creates a framework for more consistent and meaningful results. Establishing these measurements helps track progress and enables the institutional research office to provide higher-value analyses in the future and, in this case, reduce the overall survey burden on students, ultimately contributing to more effective strategic planning and improved institutional performance.

Identifying Key Constructs and Developing Survey Items

When inserting questions into pre-existing surveys, there are constraints to be aware of, most centrally that it is not possible to collect data on every area of interest. Survey fatigue is a key risk factor that can reduce statistical power (Fass-Holmes, 2022) and potentially bias selection even when a representative sample initially chooses to participate (Le et al., 2021). Many departments across campuses are understandably interested in taking advantage of the benefits of collaboration, so space on an institutional survey is at a premium. As such, it is important to identify a few core priorities for which additional data can lead directly to actionable interventions and to make a clear case for why these data are relevant to the institution as a whole rather than just a single office. Institutional

research offices administer these surveys, so the first steps of our partnership centered on the collaborative development of survey questions to address these priorities.

We relied on a combination of our knowledge of the literature on career development and the expertise of our career advisors to determine four key constructs, measured using a 5-point Likert scale from Strongly Disagree to Strongly Agree.

Awareness of Career Resources on Campus

Our most foundational priority was understanding whether students were aware of the resources that already exist on campus to support their career learning. The prompt "I know where to get help with my career goals at Smith" also allowed us to better interpret engagement and attendance data. When students do not use the Career Center, it is helpful to understand whether that is because they do not know who we are or what we offer, which points toward a communications-type solution, or some other challenge, which could point toward content-based solutions.

Career Planning

The inclusion of this construct was informed by the work of The Career Leadership Collective and their framework developed from the National Alumni Career Mobility survey (The Career Leadership Collective, 2022). We also heard anecdotally from career advisors that the idea of career planning can be overwhelming and stressful for students, particularly first-generation college students, so we chose language that would be accessible by drawing from literature on goal setting (Locke & Lathan, 2019). The resulting survey item, "I think about the next steps I need to take to reach my career goals," was designed to reflect key elements identified in the goal-setting literature, including the importance of conscious attention, relevant knowledge, and specificity.

Ability to Leverage Professional Networks

Social capital and the ability to access informal channels of job searching are highly relevant to career outcomes (Flap & Boxman, 2001; Martin et al., 2020; Schwartz et al., 2023). In particular, there is a connection between inequitable access to social capital and differential outcomes for first-generation students, as skills like networking are often part of higher education's "unwritten" curriculum (Schwartz et al., 2018). The item "I understand how to grow my professional network" was also informed by an internal strategic priority at Smith College related to increasing engagement between current students and alums. Therefore, it lends itself to future targeted interventions.

Self-Efficacy and Confidence

Self-efficacy is a construct in the social sciences that connects expectations of success with behavioral change (Bandura, 1977; Bandura, 2023; Hussain & Khan, 2022; Schunk & DiBenedetto, 2021), and has been applied specifically to the career literature through the Career Decision Self-Efficacy Scale, which was developed to inversely correlate to career indecision (Betz et al., 2005; Taylor & Betz, 1983). The prompt "I am confident that I will obtain the career outcomes important to me" also responds to anecdotal feedback from career advisors who reported that they had been seeing higher levels of insecurity and imposter syndrome from students in recent years.

Implementation

As a member of The Consortium on Financing Higher Education (COFHE), Smith College participates in its suite of surveys, which provide a comprehensive examination of the undergraduate experience. COFHE is an unincorporated, voluntary, institutionally supported organization of highly selective, private liberal arts colleges and universities committed to meeting the full demonstrated financial need of admitted students (https://web.mit.edu/cofhe/). The four constructs were added as local items to three COFHE surveys.

The COFHE Survey of New Students (SNS) collects background data, including diversity and high school experiences, that are not typically available through administrative sources. It also explores students' college goals, academic interests, and preparations. The SNS is administered every other summer. The COFHE Enrolled Student Survey (ESS) assesses student engagement, satisfaction, progress toward learning goals, advising, and well-being. Smith administers ESS to all undergraduates every other spring semester. The COFHE Senior Survey gathers feedback from graduating students about their college experience, personal progress, and future plans. Smith administers this survey every spring to all graduating seniors.

These questions were also added as local items to the CIRP Freshman Survey (TFS) administered by the Higher Education Research Institute (HERI) at UCLA (https://heri.ucla.edu/). TFS gathers data on incoming students' backgrounds, high school experiences, and expectations for college. TFS is administered every other summer to incoming first-year students at Smith College, alternating with SNS. Table 1 summarizes each survey that included our four questions, along with the time period for data collection and response rate.

Survey responses were collected via unique links, allowing for disaggregation of the data by a student's official information system record, including class standing, academic major, racial identity, first-generation status, international status, and Pell eligibility. We found that

Table 1. *Data Collection Timeline*

Survey	Target Population	Collection Period	Response Rate
COFHE Enrolled Student Survey (ESS)	All undergraduate students	Spring 2023	51%
CIRP First-Year Survey (TFS)	Incoming first-year students (alternates years with SNS)	Summer 2023	80%
COFHE Senior Survey	All graduating seniors	Spring 2024	53%
COFHE Survey of New Students (SNS)	Incoming first-year students (alternates years with TFS)	Summer 2024	86%

the samples of respondents were generally representative of the student population for all four surveys. Due to the operational nature of these surveys, the results are not intended for formal empirical research, which leads to limitations to the generalizability of our specific findings, which will be discussed later. The full analysis of our findings is out of scope for this paper, so we will now focus on how these data tangibly benefited students.

Positive Impacts from Our Findings

By measuring these four constructs at multiple developmental milestones on pre-existing surveys with strong response rates, we started to identify the moments in a student's journey where they may need additional support and where interventions could be scaled and implemented more broadly. The measurement allowed for real-time data on competency gaps and the opportunity for targeted use of resources and programmatic interventions to support career readiness across all student populations.

A key learning gap identified at Smith was students' perception of networking readiness. Less than half of respondents across class years responded favorably to the question "I know how to grow my professional network." Although data from peer schools also show lower networking confidence, these responses were concerning in light of the established importance of social capital for career mobility. As a result, the learning gaps identified using these data were a key factor in securing institutional support for three key initiatives to help grow our students' social capital and networking competencies.

First, Smith invested in Career Launch, a research-based curriculum focused on developing social capital and networking confidence. We have now facilitated this program annually since 2023 for multiple cohorts of first-generation students over the three-week winter term, helping students learn how to network and access the hidden job and internship market. After participating in this program, all students reported more confidence with networking, and a large majority reported an increased sense of belonging at Smith based on pre- and post-program assessment surveys. Although the program was successful, it was offered to a limited number of students. We realized that developing trained faculty partners who are familiar with the importance of network development and ready to serve as ambassadors to resources was essential to bringing the program to scale. Now, discussions are underway on building an asynchronous curriculum that faculty advisers across all disciplines can recommend and draw from in their advising interactions, as well as reference throughout coursework.

Second, Smith invested in technology to support scaled networking interactions. Smith had already developed a substantial repertoire of networking resources for alums, powered by Salesforce. We sought to complement this with a companion resource focused on students. PeopleGrove is a student-alum networking platform that powers Smith's new student-alum connections hub, featuring predictive mentor matches, a range of connection opportunities, and asynchronous learning engagements. Based on back-end data, over half of the Smith student body created user profiles in the first year of engaging the platform, and over 2,500 alums signed up as mentors. Currently, our focus is on engaging faculty as ambassadors for the program. We have also enlisted three academic

departments to pilot the integrated use of the tool for their targeted alum engagement, and we seek to evaluate and scale this effort soon.

Finally, Smith committed to major capital investments to support enhanced networking hub spaces for students. Smith is nearing completion of building a central career center, proximate to admissions and the campus center, and is co-located with a leadership center on campus. While fundraising was well underway for this capital project at the time of the cross-campus survey, the data on networking helped to drive targeted donor investments. For example, spaces for employer engagement were added, allowing for enhanced opportunities for students to interact with visiting employers. Private bookable rooms were also added so that students could schedule private spaces for mentoring interactions and informational interviews. The new career center space will also be the first stop on admissions tours, showing in real time a vibrant space where students develop career connections.

In addition to addressing networking gaps, we also used this survey data to focus our early intervention strategies. For example, we wanted to see improvement in self-reported first-year student knowledge of career resources. We added targeted programming during first-year orientation and implemented partnerships with both first-year academic advisers and the class dean's office, which led to substantially increased first-year engagement with career advising.

These are just two examples, but more broadly, this survey data helps us more compellingly tell the story of career development programming to campus partners, administrators, current students, prospective students, and current/potential donors. Through this initial cross-campus survey, we have seen how key data points help us focus our initiatives on resourcing students in targeted ways. We can also empirically support the anecdotes we previously relied on to tell the whole story.

Future Plans for Collaboration

As colleagues, we see this collaboration as an indicator of the efficacy of cross-unit collaboration and a marker of future work to be done. We see three key areas for collaboration moving forward. First, we seek to add another data collection point at major declaration, asking students to answer the four key questions again and log their top career industries of interest. The survey will serve several purposes: 1) to update our understanding of student career interests, which are collected on entry but change over time, 2) to target our outreach to students in more sophisticated ways, and 3) to enhance faculty and departmental collaborations based on shifting student indicators of career interest.

Second, we are moving toward viewing institutional research surveys and surveys primarily facilitated by the career development office as part of a collaborative portfolio rather than independent projects. We are planning an evaluation process to determine whether certain questions currently on the institution's senior survey could be better suited to the career center's first-destination survey due to their respective timelines and the needs of institutional partners. For example, as a liberal arts institution, many students do not have

an accurate picture of their postgraduate career plans when our senior survey is administered, just before graduation. By formally move career satisfaction and outcomes questions to the career office's first-destination survey that runs 6+ months after graduation, we can 1) help combat survey fatigue by avoiding duplicative questions, 2) collect better data by asking questions only at the most appropriate time for the audience, and 3) develop a shared methodology to maximize the usefulness of all collected data across the institution.

Finally, we seek to use students' self-reported career readiness competencies to enable more individualized targeting of relevant resources at each developmental moment. Several examples of this relate to networking, as described above. Beyond this, we are working cross-institutionally to better support students with resource navigation, including career planning resources. We have established a working group with members from the Provost's Office, the Deans' Office, and research and learning centers to look at how to provide clearer communications and navigation tools matched to class years, divisions, and special interests.

Taken together, these three next steps involve deeper collaboration, extending beyond the Career Center and Institutional Research and employing the Registrar, Provost, Academic Deans, Faculty Advisers, and others in joint efforts toward data-driven decision-making and developmental interventions.

Generalizability, Limitations, and Areas for Future Research

We hope this case study will be valuable for career and data professionals across the post-secondary space; however, the specifics of this work will not apply to all institutions. Most centrally, institutional context and culture will heavily impact the success of any potential partnership between career development and institutional research. For example, our collaboration was extremely "in the weeds" because our career office benefits from the expertise and bandwidth of a dedicated data staff person. This could look very different for career offices with less experience writing valid surveys and working with larger data sets, or on campuses with a more siloed institutional research department. Regardless of these challenges, this case study demonstrates the benefits of exploring collaborative projects between career development and institutional research.

When dealing with potentially ambiguous constructs such as "career planning," there is always some risk of students interpreting our language differently than intended, and more broadly, self-reported data has some drawbacks compared to observational data (Gonyea, 2005). We would have preferred to go through processes established in the academic literature for developing and empirically validating our survey items rather than the approach outlined earlier (Clark & Watson, 2019). However, this would have required a large survey burden on our students and long timelines involving ethics approval from the institutional review board. With our main goals being operational, we determined that it was better to avoid further survey fatigue and instead focus on integrating the theoretical and practical resources available to us to address any validity concerns given these constraints.

In addition to the operational next steps described above, there is a clear opportunity for future research to explore the impact of various programs on the career readiness constructs identified. For example, there is good large scale data on the correlation between experiential learning and career outcomes (NACE, 2019; Sattler & Peters, 2013; Strada, 2024), but it would be useful to investigate what kinds of experiential learning are most effective, and refine our understanding of the experiences we want to encourage (student employment, internship funding programs such as Praxis, study abroad, on-campus and off-campus research, etc.) These data, collected over many cycles, should also present the opportunity to assess the success of investments such as Career Launch and PeopleGrove, because it will allow us to determine changes in career readiness for students who engage with these interventions.

Final Thoughts

We look forward to continuing our analysis of these questions over the next few years. As of Spring 2027, we will have a full set of data for a graduating class of students, from their incoming student survey through their senior survey. We will also continue to monitor responses to the networking questions in the short term to assess the impact of the interventions outlined above.

This case study demonstrates how career and institutional research offices can collaborate to support data-driven interventions, while addressing the wider industry calls to better measure student career readiness prior to first-destination outcomes. We invite those reading this paper to explore how they may adapt this approach to their contexts and to prioritize collaboration that integrates the measurement of career readiness throughout their institutions.

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Increasing Social and Cultural Capital Through Internships

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Abstract: Utilizing graduate employability capitals, this article tests an internship program designed to eliminate barriers to access internships and to build college students' social and cultural capital. The primary components of the program were: 1) financial support, 2) social and cultural capital resources provided by the college and the employer, 3) institutional support during the intern-site matching process, and 4) support to build graduate employability capitals throughout the internship. The program increased students' social and cultural capital and created a model to improve how colleges share institutional resources with students to improve students' social mobility.

Keywords: internships, graduate employability, social capital, cultural capital, social mobility

Increasingly, students pursue college degrees expecting success in their postgraduate job searches and a boost in social mobility (Chan, 2016) or the ability to move up in social class and socioeconomic status (SES). However, recent economic analysis calls into question the efficacy of a college degree in moving graduates from lower SES to higher SES (Chetty et al., 2020). Only a few colleges are able to reliably move their lower SES students to a higher SES postgraduate outcome (Chetty et al., 2020). The Pew Research Center supported the finding that college degrees do not always provide students with equal access to social mobility, noting that first-generation college students lag behind their second-generation peers in income after graduation, earning significantly less in median family income in 2021 (Schaeffer, 2022).

The national conversation on college degrees includes the expectation that all colleges produce strong career outcomes for students. The expectation operates from a skills-to-jobs framework that ignores human decision-making in the hiring process (Holmes, 2013; Hora, 2017). Employers do not hire based on degrees alone. Instead, deciding which candidates to hire based on network connections and cultural "fit" (Hora, 2017; Hora, 2020; Rivera, 2012). Hiring based on connections and fit often privileges college students from higher SES backgrounds with access to connections from their family of origin (Hora, 2020; Rivera, 2012; Stuber, 2009). Students who start life with more connections and access within society continue to experience the benefits throughout college and after (Stuber, 2009).

Internships have been touted as one of the best methods available for colleges to improve students' postgraduate outcomes, regardless of the connections a student has when they start college. The benefits of internships for postgraduate career outcomes are widely established. Internships are one of the American Association of Colleges and Universities

(AAC&U) recognized High Impact Practices (AAC&U, 2023), and an internship related to one's career goals is a high-impact career practice from the National Alumni Career Mobility Report (The Career Leadership Collective, 2022). Using their Job Outlook 2023 data, the National Association of Colleges and Employers (NACE) reported that employers view an internship as the deciding factor among two otherwise equally qualified candidates (NACE, 2023b). The power of internships was also confirmed in a causal experiment in Europe, where researchers sent identical resumes with and without internship experience to open positions and found that those with internship experience received 12% more invitations to interview (Baert et al., 2021).

Internships are an established intervention to promote and improve postgraduate career outcomes, but internships also have significant barriers preventing students from accessing them (Hora et al., 2021). Based on results from the The National Survey of College Internships (NSCI) 2021 Report, Hora et. al (2021) reported that the primary barrier for students to access internships is a lack of knowledge on how to find an internship. Conducted by the Center for Research on College and Workforce Transitions (CCWT) at the University of Wisconsin-Madison, the NCSI surveyed over 12,000 students across 17 campuses, including public and private, in 2021 (Hora et al., 2021). Two-thirds of students surveyed wanted to take part in an internship but were not able to. Respondents shared additional barriers to participation that included the need for paid work and lack of transportation (Hora et al., 2021). In 2023, NCSI relaunched as a partnership with Strada Education Foundation and released a dashboard in Spring 2023 based on a survey of 2,603 students. In addition to pay and transportation, 67% of students named "no opportunities" as a factor in preventing them from completing an internship (National Survey of College Internships, 2023). Internships are an important experiential learning opportunity that provides a path to careers after graduation, but many students are being left behind due to a lack of access.

Is there a way to build an internship program that eliminates barriers to access and increases students' network connections and 'fit' for postgraduate career outcomes? This study explores the design, execution, and results of an internship program designed to do both.

Theoretical Framework

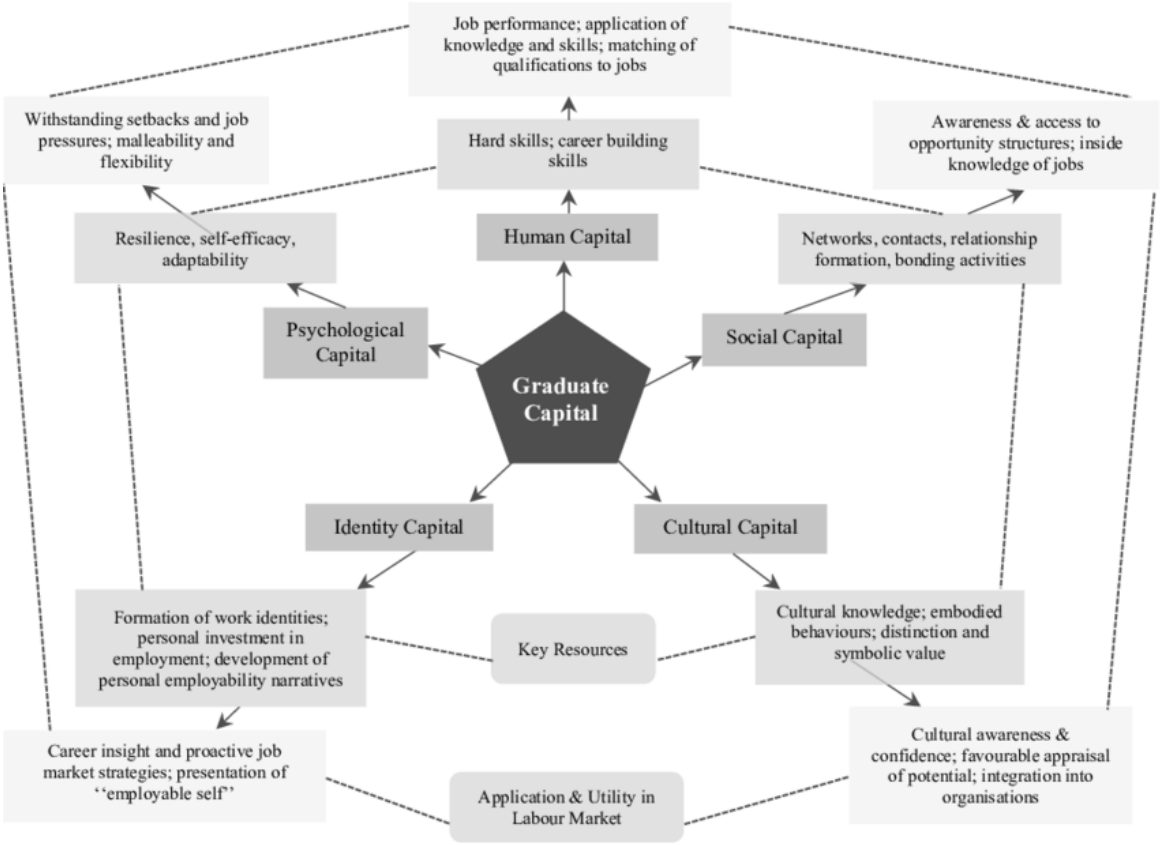
We have all heard, "it's not what you know, but who you know," a phrase often repeated when referring to the job search process. The phrase refers to the social networks that individuals have around them that provide access to resources, including information and people. These networks and resources, known as social capital, provide college students greater access to opportunities throughout the job search process and beyond (Bourdieu, 1986; Museus & Neville, 2012). Based on the NSCI data (2023), 32% of students surveyed who had completed internships found them through informal networks, and 36% found their internships with help from their Career Center, both forms of social capital. The field of career education has begun to recognize the importance of social capital, as evidenced by the recent inclusion of social capital in the NACE definition of internships released in 2023 (NACE, 2023a):

> An internship is a form of experiential learning that integrates knowledge and theory learned in the classroom with practical application and skills development in a professional workplace setting (across in-person, remote, or hybrid modalities). Internships provide students the opportunity to gain valuable applied experience, develop social capital, explore career fields, and make connections in professional fields. In addition, internships serve as a significant recruiting mechanism for employers, providing them with the opportunity to guide and evaluate potential candidates.

In addition to social capital, Tomlinson (2017) offered a theory of graduate employability comprising five capitals: human, social, cultural, identity, and psychological. College educators can use these five capitals to prepare graduates for employability after completing a degree.

Figure 1 demonstrates the relationship of the five capitals to generate graduate employability capital in the service of postgraduate outcomes. Tomlinson (2017) defines human capital as the job-related skills transmitted through education, which is central to the skills-to-jobs assumption. Social capital is the "sum of social relationships and networks that help mobilise graduates' existing human capital" (Tomlinson, 2017, p. 342) and draws

Figure 1. *The Five Graduate Capitals*



Note. The graphic representation in Figure 1 was developed by Nghia et al. (2023) to illustrate the five graduate capitals developed by Tomlinson (2017).

on the importance of group membership for success. Social capital helps students source potential opportunities for internships and jobs after graduation through their relationships and networks. Tomlinson (2017) then identifies cultural capital as needed for entry into a particular field or industry, including graduates learning the norms and behaviors expected within that industry. For example, a manufacturing company is likely looking for cultural signifiers that are different from those of a technology company. Most often, when employers refer to 'fit,' they are referencing cultural capital (Hora, 2017; Tomlinson, 2017). Identity capital and psychological capital are internal capitals that graduates build throughout their time in college and through experiential learning; these capitals help students determine a career of interest and maintain resilience in the face of changing labor markets, as well as when faced with bias and discrimination (Tomlinson, 2017).

This study utilized Tomlinson's (2017) framework, specifically on social and cultural capital, to create an internship program to increase students' social and cultural capital. Internships are immersive, time-limited interventions where students temporarily become employees in new organizations. A long-term experience in a new industry may increase cultural capital as students learn the norms and behaviors expected of employees in that field (Hora, 2017). It is also likely to increase social capital as students meet new people and create connections at their internship organization. Internships provide a good opportunity to measure growth in social and cultural capital through an external immersion experience.

The University of North Carolina Asheville Internship Program

In 2024, the University of North Carolina (UNC) Asheville Internship program launched using Tomlinson's conceptual framework. It was intentionally designed to eliminate barriers to access, strategically share social capital, and support students during the internship to build cultural capital in their chosen industry.

The UNC Asheville Internship program's first component was to increase students' access to internships. To ensure all internships were paid, the program required that for-profit organizations offering internships provide adequate hourly compensation. For nonprofits and government organizations lacking the funds to pay an intern, the UNC Asheville Internship Assistance Fund was used to provide compensation for those internships through a $1500 scholarship for the duration of the internship. Every UNC Asheville Internship Program participant was paid by using one of these two funding sources. Additionally, students did not have to 'spend' current social and cultural capital to gain access to the program. Students did not need to ask for references, write an essay, interview, or provide additional proof of current social and cultural capital to be eligible. Instead, to participate in the program, students needed to be among the first 50 students to sign up.

The program's second component, sharing social capital, involved the intentional development of internship sites by staff at UNC Asheville. College internship programs often require students to use their own networks to find internship opportunities (Hora et al., 2021; Stuber, 2009). The UNC Asheville Internship Program did not require students to have or use pre-existing personal and family networks to source an internship site. Further,

the UNC Asheville Internship Program built social capital for students over the duration of the internship. To be a part of the UNC Asheville Internship Program, an organization had to agree to provide regular supervision to develop a relationship between the student and a member of that organization and agree to introduce the student to at least one other person in their industry of interest at another organization. Through the introductions, students gained relationships with professionals beyond their internship to expand their professional network and social capital.

The third component of the program focused on institutional support for students and sites during the internship-site matching process to share connections (social capital) and prepare students for internships (cultural capital). The Career Center could not place students at participant internship sites due to professional ethical guidelines from NACE. To ensure equity of access to opportunity, positions must be advertised to all students who meet the qualifications for the position (NACE, 2020). Therefore, all internships set aside for the UNC Asheville Internship Program were shared with all students within the program. Students selected which sites in the program they wanted their application materials sent to, and the sites then determined who to interview and offer an internship. The UNC Asheville Internship Program provided students with preparation workshops that covered expectations in written application materials, interviews, and general on-site behavioral expectations during the internship (timeliness, communication, etc.). When resumes were sent to sites for review during the internship matching process, the internship program manager and director in the Career Center supported students and sites to ensure that all students who signed up for the program secured an internship at a participating organization.

Finally, and most importantly, the fourth component of the internship program was to build social and cultural capital during the internship. All students and site supervisors in the UNC Asheville Internship Program received a check-in interview via Zoom or in person and support from the Career Center at UNC Asheville over the semester-long internship experience. Students and site supervisors were prompted via email with topics listed in Appendix A for discussion during weekly supervision meetings that focused on building social and cultural capital and directly addressed the validated graduate capital scale items from Tomlinson et al. (2022). Support included having a Career Center staff member readily available for emails and phone calls throughout the program whenever students and supervisors had questions about challenges that arose during the internship.

The four components served as the foundation for the UNC Asheville Internship Program, making it one of the only internship programs in the nation to focus on removing the need for students to use financial, social, and cultural capital for access, be open to any major, and include a curriculum to grow students' social and cultural capital during the experience.

Research Design

This study included three measures to understand the impact of the UNC Asheville Internship Program on the development of students' social and cultural capital. The

measures included a pre-post survey, check-in interviews during the internship, and student reflection essays. Methods utilized a mixture of quantitative and qualitative techniques grounded in Tomlinson et al.'s (2022) definitions of social and cultural capital.

Tomlinson et al. (2022) developed a scale to measure the 'employability' of college graduates based on the five graduate capitals. The pre- and post-surveys utilize the employability scale's social and cultural capital portions (Tomlinson et al., 2022). These surveys were given to interns to measure growth in these two capitals from the beginning to the end of the internship program. The surveys were built in Qualtrics and administered via email at the beginning and end of the internships. The data collected is a six-point Likert Scale to be compared between pre- and post-surveys. Therefore, the data analysis utilized t-tests to determine if there was a statistically significant difference between social and cultural capital before and after the internship experience. In addition, the pre-survey included questions on demographics and to identify what made the program appealing to the students. The post-survey included a question about concrete job outcomes from the internship program, including job offers. These questions were analyzed using descriptive statistics.

Students also completed a final reflective essay to support and seek nuance in the quantitative outcome data collected via the pre- and post-surveys. Prompts were designed to ask students to provide specific examples of growth in their social and cultural capital and share the next steps they have identified for their career after completing the internship. The data collected through students' final reflective essays was analyzed using a priori coding found in Appendix B, with predetermined codes aligned with the descriptions of the graduate capitals defined by Tomlinson et al. (2022).

During the internship, check-in interviews provided an additional measure of social and cultural capital. The check-in interviews were semi-structured and conducted separately with the internship site supervisor and the student intern. The check-in interviews were completed over Zoom, with the internship program manager or director of the Career Center leading the meeting. The check-in interviews included yes/no, numerical, and open-ended response questions. The open-ended response questions were analyzed using the coding found in Appendix B.

Participants

Participants in the UNC Asheville Internship program included students from UNC Asheville and employers recruited by the internship program manager. From application to internship completion, 28 students participated in the UNC Asheville Internship Program in Summer 2024. To be accepted into the program, students had to be currently enrolled at UNC Asheville, have completed 60 credit hours, including transfer credits, and not have completed a prior internship. Participants included nine sophomores, 16 juniors, and three seniors. Self-identified genders included 18 female students, nine male, and one non-binary. Majors included music, mass communication, business, accounting, new media, sociology, psychology, philosophy, mechatronics, environmental studies, and computer science. Student participant demographics showed that 54% had an average family

income of less than $100,000, and 37% had parents/guardians who had not yet attained a four-year degree, making them first-generation four-year college students.

Twenty-six individual employers matched with a student intern, and 24 of the employers were local to the Asheville metro region. Twenty-four sites had one intern, while two sites had two interns. Two organizations from other parts of North Carolina participated, including one in Winston-Salem with one intern and one in Charlotte with two interns working in different parts of the organization under different site supervisors. Thirteen of the sites were for-profit, and 13 were nonprofit, representing a range of industries, including education, law, logistics, communications, banking and finance, science testing and research, music/events, hospitality, and human services.

Internships

The internships had a range of pay and hours, as pay and hours are almost impossible to standardize across industries and internship sites. 13 of the internships were paid by the employer, representing the for-profit companies. UNC Asheville paid 15 internships via the internship scholarship associated with the UNC Asheville Internship Program, representing the nonprofit employers in the program. Students paid via the UNC Asheville Internship scholarship earned a flat rate of $1500 for the summer, while students paid by their site ranged from $12 an hour to $20 an hour. Hours working on-site during the internship program varied, with some students working as many as 40 hours per week and others working as few as five hours per week. The UNC Asheville Internship Program recommended that students work 100 hours on-site over the summer, especially those paid via scholarship, so their pay rate would average around $15 an hour. Most of the internships took place in person, with 72% of students reporting their work was fully in-person (13 students) and two reporting hybrid work for a total of 83% (15 students) with in-person contact at their sites. Students worked a wide range of hours (from 5 to 40 hours per week) during their internships, with a median of 16 hours per week and an average of 17.5 hours per week.

Results

The results discussed here include qualitative results from the check-in interviews and final reflections coded for social and cultural capital, quantitative results from a dependent means t-test to test for statistical significance in changes in social and cultural capital from beginning to end, and a comparison of pre- and post-survey question frequencies.

Check-In Interviews

Twenty-two of the interns and 18 of the site supervisors took part in the check-in interviews. At the time of the check-in interviews, 55% of students and 56% of site supervisors (12 students and 10 site supervisors) reported regularly utilizing the weekly topics during supervision. The check-in interviews reminded site supervisors to begin using the topics if they had not yet.

Social Capital

The first three a priori codes are associated with social capital: employers, jobs, and connections (Appendix B). The social capital code Connections, as seen in Table 1, had the most transcript excerpts assigned for site supervisors (21) and interns (26). A few weeks into the internship, most of the site supervisors reported that their intern had met all or most of the employees at their site. Interns in externally facing positions had met more people outside of their organization than interns with internally facing responsibilities. Several students talked about getting to know people outside of their organization through events the organization was running, including partnerships with associations. For some interns, external events were part of their jobs, but for others, the invitation to attend external networking events came through their site supervisors.

Like their site supervisors, interns did not discuss the employer code in detail during their check-in interviews. As seen in Table 2, for the interns who mentioned the employer code (6), the growth ranged from knowing who to talk to for more information, how their organization fits within an industry, and wanting to stay at their current internship site after the internship ended. Students spoke more about jobs than their site supervisors did, with 17 transcript excerpts assigned across 12 student interviews. Interns mentioned that site supervisors, coworkers, and volunteers at their site all played a role in employer and job knowledge growth and career exploration for interns.

The check-in interviews reminded site supervisors to introduce the intern to someone who works in the field outside of their organization. Some site supervisors discussed their strategy for future introductions, including identifying a person to introduce the intern to or

Table 1. *Employer Check-In Interviews Social Capital Codes*

A priori code	Participants contributing (*n*)	Excerpts assigned (*n*)	Sample quote
Connections	15	21	“I've set up some meetings for her. She's probably gotten to meet 50% of the staff so far, and both in social settings as well as in, you know, more formal work, one-on-one settings.”
Jobs	4	4	“I've told her, if she wants a job after her internship, we would take her in a heartbeat.”
Employer connections	3	3	“She's not sure if she was kind of interested in the nonprofit path, so, you know, we've talked about that versus the government.”

Note. *N* = 18.

Table 2. *Student Intern Check-In Interviews Social Capital Codes*

A priori code	Participants contributing (*n*)	Excerpts assigned (*n*)	Sample quote
Connections	18	26	"Five or six partners, and they come to events, and they come and help out whenever they can, so they come in and out, and I've met them and talked with them, and they've told me some of what they do, and I've helped them out."
Jobs	12	17	"I now know I can kind of break into commercial lending. I know what it looks like. I know what the kind of goals are with it."
Employers	6	6	"I like the idea of working as like an environmental specialist in a lab setting, but I guess I just, I don't really know what the options are in water quality testing."

Note. *N* = 18.

asking the intern what type of person they would like to meet. One student said of their site supervisor:

> She's like, really putting me in contact with [industry connection] so that I can continue and kind of work with them in the fall a little bit. So she's really helping us with, like, what we're interested in and where we want to go.

For most interns, the site supervisor served as their most important connection at their internship site, with students reporting that they viewed them as the person most able to open doors and create introductions to others within and outside the organization.

For students working with coworkers in addition to their site supervisor, the relationship building in the downtime/quiet time between work projects offered deeper learning about the industry and field. One student mentioned building a relationship with a temp at their site who had connections in their field to learn more about the industry and connect with the professionals on LinkedIn. Another talked about deepening a relationship with someone subbing in for the primary person they work with on projects and learning about that person's years in the industry. At one site, an alumna from UNC Asheville made a special effort to get to know the two interns, taking them out to lunch and showing a special interest in them. Both interns highlighted the connection with the alumna during their check-in interviews. The relationships built on-site made a difference in the interns' building social capital.

Cultural Capital

The second three a priori codes are associated with cultural capital: personal development, cultural fit, and confidence. Table 3 shows that site supervisors spoke more

Table 3. *Employer Check-In Interviews Cultural Capital Codes*

A priori code	Participants contributing (*n*)	Excerpts assigned (*n*)	Sample quote
Cultural fit	16	31	"Most of our staff is kind of like head down, work hard, you know, kind of take care of things. And she fits in really well with that. So behaviorally, yeah, we communicate that kind of, this is the expectation. This is the standard that we have."
Personal development	8	9	"I think like she's growing in that realm of just like the knowledge of what tools people in these fields are using, and in what ways, and how can I utilize that for myself."
Confidence	6	6	"She wanted to work on feeling confident speaking in front of people, and I think that our Saturday time together, facilitating outside has made [Student Name] a more comfortable facilitator."

Note. *N* = 18.

about cultural fit (31), and considerably less about personal development (9) and confidence (6). Site supervisors talked about their expectations for interns on communication and attire, with one site supervisor discussing the nuance of dressing professionally for a job outdoors and in rivers. Two site supervisors shared that their interns prompted them to explain their behavioral expectations at the start of the internship, and that the questions during the check-in interviews helped site supervisors think about what they needed to share with their interns.

Several site supervisors talked about the behaviors that students brought with them as assets to the organization, without having to be shared as an expectation of the internship. Examples included interns being "proactive," "inquisitive," "punctual," "intentional," "an active listener," "detail-oriented," "hardworking," and engaging in "formal communication." Some site supervisors talked about their interns' behavior in vague language, such as "appropriate" and "professional," without defining what those words mean in the context of their organizations. The best example of talking about cultural fit without being clear came from a site supervisor about their approach to the interview with the intern:

> I was just telling [Student Name], like, some of the stuff about interviews and expectations. I was like, in all of my experiences, I said, I really think it's like a vibe fit. I said, you can have your resume match up, but you interview with the place and you guys aren't the same vibes.

The 'vibe fit' example illustrates how much cultural capital is often implicit rather than explicit and potentially difficult to communicate and learn.

Site supervisors talked less about confidence and personal development, which may be because it can be difficult to observe and share where someone other than yourself has experienced a change in confidence or personal development. The themes shared here centered around interns' growth in skills during the internship and observable instances of interns taking initiative.

The analysis from the interviews also showed that interns spent more time discussing all three aspects of cultural capital more than their site supervisors (see Table 4).

Students expressed personal development regarding skills currently mastered and skills they want to learn during and after the remainder of their internship. Interns mentioned soft skills, including how to prioritize and organize work projects. The interns shared that the adjustment to the internship itself was viewed as personal development, well-captured in this quote:

> I've learned that I have a tendency to take whatever prompt they give me and try to bring it 1000 miles further regardless of whether they wanted me to do that or not. And at first I thought, oh, that's great. They'll love that I'm doing so much more work, until I spent, I think, three days, no so, two and a half days last week where I got no sleep because I was putting so many hours into making sure I got this project done, which they did not want me to do. So I think that was something I've been again, slowly piecing together.

Table 4. *Student Intern Check-In Interviews Cultural Capital Codes*

A priori code	Participants contributing (*n*)	Excerpts assigned (*n*)	Sample quote
Personal development	16	21	"Learning different software here and there, and the best ways to like go about getting certain work done and learning, like, how to prioritize. Like, okay, like this should come first before I do this project and that sort of thing."
Cultural fit	16	26	"I'd say there is a bit of an expectation to have, like the ability to learn things very quickly and pick up on instructions quickly and not have to constantly look at written directions. And I feel like I've been doing pretty well at that so far."
Confidence	13	18	"Another success I would say is I feel like I've gotten pretty comfortable with, like, emailing other people in foundation that are not just like in the communications department."

Note. *N* = 18.

Students described growth in cultural fit in terms of learning the unspoken expectations on the job through trial and error. Many talked about being nervous at the beginning of the internship, compared to the check-in interview completed a few weeks into their time on site. Students also talked about learning how their internship environment differs from a school environment: “It's more like, when people get into the field, the corrections can be made at the last minute. And so that's something I've kind of had to retrain my brain on, coming from a school environment to a work one.” Another intern had been unsure if they would like their internship and was pleasantly surprised at how much they loved it. The adjustment from classroom to work was an important theme within the cultural capital codes for students.

Confidence Overlap. Confidence notably overlapped with the learning expressed in personal development and cultural fit. Students talked about personal development and skills learned, noting increased confidence when building those skills. Students also talked about gaining confidence on-site when learning how to follow the spoken and unspoken expectations of the site. Confidence was coded separately, but it became difficult to determine where the overlap between the cultural capital codes leaned towards confidence rather than personal development or cultural fit. An example here: “Another success I would say is I feel like I've gotten pretty comfortable with, like, emailing other people in the foundation that are not just like in the communications department.” The excerpt, also used as an example in Table 4, is coded as confidence because of the emphasis on growing in comfort, but knowing how to email other people could also be cultural fit or personal development. One student did a nice job of summarizing what growth in confidence looked like for many of the responses from the check-in interviews: “I think I've learned, like, it's easy to kind of doubt yourself when you're starting something new, but like, having faith in my own abilities.” The check-in interviews showed that cultural capital is nuanced and implicit and grew for interns in the first few weeks of the UNC Asheville Internship Program.

Student Final Reflections

In early August 2024, students were asked to complete the final reflection via written answers or an online interview utilizing Big Interview software. Of the 13 students who completed it, six completed it via recorded interviews, and seven completed it via written answer format. The final reflections were coded utilizing the same a priori codes used for the check-in interviews in Appendix B. Results can be found in Table 5.

Similar to the check-in interviews, connections had the most transcript excerpts assigned, with 18. Students spoke about the depth of connections made with site supervisors and colleagues at their sites. The students noted the time and attention given by professionals at their sites who demonstrated a strong interest in helping with their careers:

> [Site supervisor] has had a huge impact on my future career. She has helped me to explore my passion for reading and writing by offering me experience in her field. She even took it a step further and helped me brainstorm what possible careers I might like to pursue in the future. She encouraged my potential and has given me great hope for the future of my career.

Table 5. *Final Reflection A Priori Codes for Student Interns*

A priori code	Participants contributing (*n*)	Excerpts assigned (*n*)	Sample quote
Confidence	12	17	"I have really opened up a lot more and built more confidence in myself."
Jobs	10	14	"I've just learned a lot of really great lab procedures that have really prepared me to work in a water testing lab or any lab in general."
Connections	10	18	"I was able to meet, actually, like 14 different people through this [site name] partnership. And so I've really built up those connections."
Cultural fit	10	17	"The skills I've gained during my internship have definitely been like those one-on-one conversation skills, so I think the biggest skill is definitely learning to talk to managers and learn about management and how to have those conversations. And it was way easier than I expected."
Personal development	8	8	"I also learned a lot of skills within the company, like marketing, business, graphic design, so I would love to further those skills as well."
Employers	6	7	"After this internship, I've realized that environmental monitoring is really the field for me. I loved working within a small team, and for a nonprofit organization, you can really see the difference that your work makes."

Note. *N* = 18.

In addition to site supervisors, interns discussed coworkers, volunteers, and community members they came in contact with during their internships who impacted their next career steps. Interns also shared that the process of meeting people and creating new relationships with professionals in their field inspired them to continue to reach out to build their career networks. The increase in social capital through their internships created confidence in interns to continue the practice after the internships, potentially bolstering the efficacy of internships in building social capital after the program has ended.

For the cultural fit and confidence codes, interns talked about fitting in at their sites, growing communication skills, and gaining confidence in their new field and industry, as well as in themselves and their ability to navigate what comes next for them professionally.

Learning how they fit in at their sites helped interns gain confidence in new settings. One student illustrated the way confidence and cultural fit are entwined:

> I've gained a lot more confidence in myself and my abilities to navigate a more professional setting, as opposed to working in more of a retail setting. Everyone I had a chance with to interact over the course of my internship definitely influenced and impacted how I feel about working in a professional setting and just having that confidence to be open in communication and willing to have that kind of dialog. I think that I've learned that's the most important part of any job or career setting in general, no matter where you work. So really, everyone in general that I had the chance to interact with impacted me.

All of the students who completed the final reflection assignment discussed growth in social and cultural capital due to their internship experience.

Pre- and Post-Survey

Interns in the UNC Asheville Internship Program received the pre-survey in May 2024, and 24 students completed it. The post-survey was administered in August 2024, and 24 interns completed it. Nineteen interns completed both the pre- and post-surveys. The first seven questions aligned with social capital, and the second seven questions aligned with cultural capital. Each set of seven questions was run as a separate dependent t-test to isolate each type of graduate capital.

For the 19 students who took the pre- and post-surveys, dependent t-tests were run using the statistical software SPSS to determine if the UNC Asheville Internship Program affected social and cultural capital. A dependent t-test is used to compare two similar groups to determine if there is a statistically significant difference between the means. In this case, the tests compared the means of the students' social and cultural capital scores before and after the internship.

The first research question for this analysis was "Does the UNC Asheville Internship Program affect social capital outcome scores?"

> The null hypothesis is: $H0: \mu1 = \mu2$
>
> The alternate hypothesis is: $H1: \mu1 \neq \mu2$

The pre-survey social had a sample mean of 30.42 (SD = 3.37) and the post-survey had a sample mean of 33.57 (SD = 4.22). The dependent samples t-test indicated that the means were significantly different for the pre- and post-survey ($t = -3.203$, $df = 18$, $p = .005$). Thus, the null hypothesis that the UNC Asheville Internship Program does not affect social capital is rejected at the .005 significance level. The effect size d was -.73. Using Cohen's guidelines, this is a moderate effect.

The second research question for this analysis is "does the UNC Asheville Internship Program affect cultural capital outcome scores?" The result of the dependent t-test will help us understand if the UNC Asheville Internship Program was an improvement for interns' cultural capital.

> The null hypothesis is: $H0: \mu1 = \mu2$
>
> The alternate hypothesis is: $H1: \mu1 \neq \mu2$

The pre-survey had a sample mean of 34.05 (SD = 3.61) and the post-survey had a sample mean of 35.42 (SD = 3.56). The dependent samples t-test indicated that the means were significantly different for the pre- and post-survey (t = -2.269, df = 18, p = .036). Thus, the null hypothesis that the UNC Asheville Internship Program does not affect cultural capital as measured by the pre- and post-surveys is rejected at the .036 significance level. The effect size d was -.520. Using Cohen's guidelines, this is a moderate effect. The pre- and post-survey dependent t-tests on social and cultural capital showed that the UNC Asheville Internship Program positively affected students' social and cultural capital.

Additional Questions

The pre-survey included a question asking students why they chose to participate in the UNC Asheville Internship Program. Students could "select all that apply" and fill in an "other" answer. Over half of the 24 students who completed the pre-survey selected guaranteed pay (62.5%), and the majority selected Career Center support (75%) and expanded career network (87.5%). 8.33% chose "other" and wrote: "The program seemed like a great opportunity to obtain professional experience in a more career-related setting" and "Felt it was a very good opportunity to get experience with the support of the Career Center." The desire for Career Center support aligns with the findings from national internship surveys that students find it challenging to source their own internships, especially students without high levels of social and cultural capital (Hora et al., 2021).

The pre-survey also included a "select all that apply" question asking interns what they hoped to gain from the UNC Asheville Internship program. The post-survey asked a mirrored question for interns to "select all that apply" for what they felt the primary outcomes from the UNC Asheville Internship Program had been for them. From these two questions, we can compare what interns intended to gain from the program with their perceived outcomes. The answers to these questions were measured by frequency. The options for selecting all the questions that apply can be mapped to the social and cultural capital from Tomlinson et al.'s (2022) graduate capitals. Improve resume, job skills, and interview skills mapped to cultural capital. Increase career network, understand the hiring process, and understand day-to-day job, mapped to social capital. Table 6 shows the percentages of responses in the pre-test and the post-test.

The survey questions cannot tell us an effect size or a true comparison between the six outcomes, but we can learn about what interns went in hoping to get out of their internship, and what they saw as the primary outcomes of the internship. As seen in Table 6, interns shared that increasing their career network was a primary outcome of the internship (95.45%), further supporting the findings on social capital as a benefit of the UNC Asheville Internship Program. Interview skills are a form of cultural capital, and it was the second-highest reported primary outcome of the internship at 90.9%. The results from the two select-all-that-apply questions support the finding that the UNC Asheville Internship program increased students' social and cultural capital.

Finally, the post-survey included a question asking if interns received a job offer at their internship site after their internship. Ten interns reported receiving an offer to continue at

Table 6. *Comparing Pre-survey and Post-survey Student Reported Internship Outcomes*

Outcomes of the internship	% Hoped (pre-survey)	% Reported (post-survey)
Understand the day-to-day work of the job	91.66	81.81
Improve job skills	81.81	81.81
Increase career network	79.16	95.45
Improve interview skills	54.00	90.09
Understand hiring process	45.83	54.54

their internship site, with 9 of those offers being part-time (the 10th student did not specify full or part-time), presumably because the majority of students are returning in the Fall 2024 semester for coursework at UNC Asheville (25 underclassmen and 3 seniors) and unable to work full-time yet. Around half of the students accepted the offers they received to continue working at their organization. Overall, 5 of the 24 who completed the post-survey continue to work at their internship site after August 2024.

The quantitative and qualitative measures for the UNC Asheville Internship Program showed that students gained social and cultural capital during their internships. Students made new connections at their internship sites both internally and externally to their organizations, increasing social capital. For cultural capital, students learned how to fit within the behavioral expectations of their job site and communicate with supervisors and coworkers. The results provide career educators with opportunities for discussion on the ways in which internships increase social and cultural capital and recommendations for practitioners who run internship programs.

Discussion

The results raised a few areas for discussion, including a closer look at the subtopics within social capital with the fewest codes assigned from coding the check-in interviews, supervisor buy-in on the curriculum of social and cultural capital weekly supervision topics, and the challenge of making cultural capital explicit.

Social Capital

The check-in interviews demonstrated that students were building social and cultural capital as intended during the internship. The codes with the least assigned transcripts across all evaluations were jobs and employers, which fall under social capital. Students grew in the connections part of social capital, but did not make the same gains in knowledge of jobs and employers. While it makes sense that in the first third of the internship hours, when check-in interviews took place, the site supervisor and students would not yet have focused on what employment the intern may seek after completing their internship. However, if this learning occurred in the second two-thirds of the

internship, the assigned transcript codes would have been higher in the final reflection interviews. The lower number of social capital transcript excerpts coded for jobs and employers shows that students may still need help identifying next steps following an internship. The results suggest that the current iteration of the UNC Asheville Internship Program is doing well in building connections (networks) but not helping students utilize those networks to source job and employer information. It may be because that will happen in the months and years following the internship, as the intern utilizes the connections made during the internship, as connections come before knowledge and information sharing. It will be important to continue to study future iterations of the UNC Asheville internship program to determine the point at which information sharing becomes a part of the students' social capital.

Supervisor Use of Weekly Topics

The weekly topics are intended to make social and cultural capital building an explicit part of the internship. The use of the weekly topics with interns and supervisors showed that at the time of check-in interviews, 45% of site supervisors were not yet using the weekly topics. Most site supervisors expressed a desire to start using the weekly topics when asked during the check-in interview, but shared either having forgotten or not having had time yet. It is unlikely that site supervisors would share a lack of buy-in because of the desire to maintain a good relationship with the internship program manager and director of the Career Center. Therefore, we cannot know the level of buy-in. It is also possible that weekly emails are not the best method for every site supervisor to be prompted on the topics.

Conversations with site supervisors outside of the check-in interviews may provide an opportunity to discuss the best way to embed the supervision topics into their internships, as the best method will likely vary from site to site and supervisor to supervisor because of the unique differences in people and organizations. It is beneficial to share the weekly topics with students in addition to site supervisors, as several students reported prompting the conversation on topics with their site supervisors. However, the responsibility of initiating the topics cannot rest solely with student interns, as the relationship with their internship site supervisor is unequal, with the supervisor holding more authority than the intern. It may be difficult for interns with less confidence and experience on the job to initiate conversations with supervisors about the weekly topics or even other topics, an important dynamic for practitioners to consider in all internship programs. A closer look at the timing, method of sharing, and topics included in the supervision curriculum will be important to increase buy-in and usage of a curriculum focused on building social and cultural capital.

Challenge of Making Cultural Capital Explicit

The results showed that despite the weekly topics, site supervisors still struggled to make the behavioral expectations of the internship explicit outside of the words like "professional" and "appropriate." These findings suggest that the cultural capital needed for students to demonstrate 'fit' at an organization is not easy for supervisors to communicate and, therefore, potentially difficult for career educators to teach and for students to learn outside of an internship experience. Students expressed gains in cultural

capital through long-term exposure to their industry norms at their internship sites, with growth in all of the codes associated with cultural capital, in addition to statistically significant growth. To uncover more nuance to this growth, it may be useful to ask students in the future which aspects of the internship experience contributed the most to learning about their industry's behavioral norms. A greater discussion is needed between hiring managers and career educators on how colleges can better prepare students for the cultural norms of specific industries, rather than assuming everyone understands what 'professional' means across industries and that a vague understanding of 'professionalism' is all that students need to demonstrate 'fit' in the hiring process.

Implications for Practice

For practitioners who wish to increase social mobility for students and fulfill the promise of higher education (Chan, 2016), I offer the following recommendations: 1) Develop foundational knowledge of the difference between the graduate employability capitals (Tomlinson, 2017; Tomlinson & Anderson, 2021; Tomlinson et al., 2022), and how to build each one. The UNC Asheville Internship Program focused on social and cultural capital. Still, practitioners must become familiar with all five graduate employability capitals to create programming to increase social mobility. 2) Commit to a high-touch process that offers interns and site supervisors support before and throughout the internship to benefit all participants. These recommendations drove the success of the UNC Asheville Internship Program and can guide practitioners to create effective programs to grow students' graduate employability capitals.

Foundational Knowledge of Graduate Employability Capitals

Most internship programs are currently grounded in the belief that human capital is all that students need to be successful in the job market (Hora, 2017; Hora, 2020). As practitioners, we must recognize social capital, as NACE has (NACE, 2023a), and acknowledge that students need more than just connections and skills to land jobs. The site supervisor who discussed "vibe fit" in interviews gave a perfect example that hiring is more than just skills and connections. As the literature on hiring demonstrates, students need to be able to speak the language of their chosen industry and demonstrate the behaviors desired by that industry (Chua & Mamanian, 2020; Hora, 2017; Rivera, 2012; Tomlinson, 2017).

Following the essential belief that hiring is more than just a skills-to-jobs framework, practitioners need to expand into the full definitions of all five graduate employability capitals defined by Tomlinson (2017). Social and cultural capital are covered at length in this research for the role they play in the hiring process and student access to opportunities on campus and beyond (Chua & Mamanian, 2020; Hora, 2020; Martin, 2009; Rivera, 2012; Stuber, 2009; Tomlinson, 2017). Not studied here are two additional graduate employability capitals: identity capital and psychological capital (Tomlinson, 2017; Tomlinson & Anderson, 2021). These two capitals offer higher education practitioners across colleges, not just those in career education, an opportunity to focus on aspects of personal growth that can help students define their identity and develop skills for psychological resilience in their careers to promote strong postgraduate outcomes long-term.

Committing to the recognition of all five graduate employability capitals provides practitioners with many more options to improve students' postgraduate outcomes than the singular focus of developing job skills (human capital). The graduate employability capitals provide a framework for practitioners to strengthen internship programs.

Commit to High Touch

The UNC Asheville Internship Program addressed a desire from students for more support in internships (Hora et al., 2021). While pay is a serious issue preventing students from participating in internships (Hora et al., 2021; NACE, n.d.), students have reported a desire for greater support in sourcing and completing internships, as evidenced through the pre-survey for the UNC Asheville Internship Program. Site supervisors also shared the desire for and appreciation of support from colleges during internships and check-in interviews. The human aspects of the UNC Asheville Internship Program are its greatest asset, even as scaling will necessarily require technology to automate some parts of the program. Remaining committed to a high-touch, human-centered program is essential in growing graduate employability capitals through an internship program structured like the UNC Asheville Internship Program. The UNC Asheville Internship Program demonstrated two critical points in the internship process where high touch yields strong outcomes: the preparation process prior to the internship and check-in interviews during the internship.

Preparation Process

Prior to the internships, the program provided support during the matching process, including preparing students to create application materials and interview, which site supervisors spoke of highly during check-in interviews. Supervisors shared that students in the program were more prepared than students from other internship programs, meaning that the preparation may have contributed to growth in students' cultural capital even prior to the internship. More research is needed to determine the aspects of the preparation that were most impactful in helping students feel prepared to interview for internships and demonstrate 'fit' with internship sites. However, there are still lessons for practitioners from this process.

The high-touch preparation process included every student having a point person to ask questions as they prepared, a four-hour hands-on workshop to create application materials, and an overview of what the application and interview process entails. When considering how to scale, ensuring students feel supported through the preparation process is a key component of remaining high-touch. While practitioners may incorporate technological elements in the preparation, such as AI interview practice, technological components must complement rather than eliminate a human mentoring resource for students during their preparation.

Check-In Interviews

Check-in interviews served as a data collection point and an important high-touch component of the internship program. During the internships, site supervisors discussed appreciating the check-in interviews as an opportunity to share about the internship and ask questions they may not have thought to ask about without that touchpoint. Students also appreciated the check-ins and asked questions about how to handle situations on site

that they may not have reached out to ask otherwise. The check-in interviews gave dedicated time for students and supervisors to address challenges during the internships that could have hindered the growth of social and cultural capital. The check-in interview conversations also provided an opportunity for practitioners to ensure that the internships were focused on building more than just human capital.

It may be tempting for practitioners to forgo this touchpoint and assume students and site supervisors will reach out with any questions, especially as an internship program grows in the number of participants. However, as the researcher learned, students and site supervisors hold on to small questions or concerns and only express them when presented with the time and opportunity to do so. The check-in interviews also gave an opportunity for the internship program manager and researcher to deepen relationships with students and site supervisors, ensuring that both viewed the college and career center as a resource in the future. These relationships provided an ongoing opportunity to continue the growth of the current interns' graduate employability capitals, and to develop strong employer partnerships to host future internships.

Despite the time involved in meeting with each program participant, most conversations were less than twenty minutes, and practitioners may be able to share the check-in load with colleagues across the college as internship programs increase in size. It is also possible to consider a format other than many one-to-one conversations that still allows for relationship building and space for questions; practitioners may explore meeting with students and supervisors simultaneously on the same call or meeting with several students and several site supervisors. The check-in interviews are an important high-touch practice. While they may evolve to include different formats, the researcher recommends practitioners remain committed to the check-ins as they yield promising results.

Through these recommendations for practitioners, higher education professionals across the nation can consider what type of internship program design will have the greatest impact on students' graduate employability capitals on their campus. UNC Asheville remains committed to improving the current internship program design. With these recommendations, other designs for internship programs may also prove effective in growing students' graduate employability capitals and making good on the promise of social mobility for college students.

Limitations of the Study

The findings from the first implementation of the UNC Asheville Internship Program have two primary limitations to be considered: sample size and type of university. 28 students completed an internship as part of the program. From there, 19 interns completed the pre- and post-surveys, while 24 students completed the pre-survey and 24 completed the post-survey. The size of this sample studied in the UNC Asheville Internship Program is small. Therefore, the results need future iterations to determine if the effects seen in the outcomes of the study are replicable.

UNC Asheville is a small, public, liberal arts university with students majoring in traditional liberal arts majors and typically not in job-focused degrees. An internship program

structured like the UNC Asheville Internship Program may have different outcomes at larger universities and within career-focused majors (like hospitality, nursing, education, etc.). Student engagement and investment may differ for students attending college to pursue specific work outcomes. Therefore, their internship outcomes may vary based on the context of the college or university implementing a similar internship program.

Despite the limitations, the results shared from the first UNC Asheville Internship Program hold promise that the program's structure makes a difference in interns' social and cultural capital, including first-generation and lower SES students. Utilizing the program's structure and supporting students to grow cultural and human capital explicitly provides the groundwork that colleges and universities can use across majors to improve postgraduate outcomes for students and increase students' social and cultural capital.

Future Research

The UNC Asheville Internship Program offers two areas for future research: defining and growing cultural capital and comparison research with other internship programs.

The UNC Asheville Internship Program increased social and cultural capital for students, especially regarding the growth of students' career networks and how to 'fit in' in new professional environments. However, there was a challenge for site supervisors to talk about the specific behaviors needed for their sites in terms other than 'professionalism.' As evidenced by the transcript excerpts from site supervisors, behaviors are more nuanced and expected to be implicit rather than explicit. Future research on methods that can tease out the nuance of cultural capital and how to grow it explicitly will benefit internship programs.

The UNC Asheville Internship Program represented a small, public, liberal arts university. Future research on the impact of internship structures that focus on social and cultural capital in other contexts would provide solid evidence that the model used in this program can be replicated and used at different types of colleges, especially those of larger size and with more career-related majors. The context of UNC Asheville is considered a limitation; therefore, that context provides insight that is ripe for future research.

Conclusion

As reflected in NACE's addition of social capital into the definition of internships (NACE, 2023b), the field of career education recognizes that more than just human capital is needed to provide students with postgraduate career success. The UNC Asheville Internship Program created a structure for internships to focus on both social and cultural capital as defined by Tomlinson et al. (2022) in the eventual service of increasing postgraduate outcomes for students at a time when the effectiveness of a college degree in providing social mobility is being questioned. The UNC Asheville Internship Program provided a college-led intervention for students to participate in internships without spending their personal resources, a challenge many students face when considering an internship (Hora et al., 2021). While the program had a small sample size and took place at a small traditional liberal arts university, the UNC Asheville Internship Program created a

structured model that can be used at colleges across the United States to improve the way that universities share their institutional resources with students in the service of improving postgraduate career outcomes. UNC Asheville will continue to use and improve on this model with the hope that other colleges will join.

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Appendix A
Topics for the UNC Asheville Internship Program

Topic: Introduction and orientation to the workplace (cultural capital)

During regular weekly supervision meeting with your intern go over expectations of the internship site including, but not limited to:

- Best ways to communicate with you and other members of the organization
- Timeliness expectation of communication
- Regular attire for on-site work

Topic: Introduction to key members of the organization (social capital)

During regular weekly supervision with your intern, go over the structure of your organization and introduce your intern to key members of the organization

- Mission statement
- Organizational chart
- Key decision-makers in the organization
    - Set up time for the intern to meet individually with members of the organization they don't regularly work with
- Competitors and/or collaborative organizations

Topic: Jargon and Industry expectations (cultural capital)

During regular weekly supervision with your intern, go over typical jargon used in the industry, as well as behavioral expectations that organizations have

- Words and acronyms the student should be familiar with in a job search
- Resume standards – what do employers look to see on a resume
    - What pointers do you have for the intern's resume?
- Typical entry-level job titles for the industry
- Interview standards – what do employers look for an interview?

Topic: Introduction to at least one person outside of your organization (social capital)

During regular weekly supervision with your intern, introduce them to a person who works in your industry, but does not work at your organization

- Student will reach out and complete an informational interview (with the support of the UNC Asheville Career Center for conversation topics/questions)
- Offer insight into topics the student should address with the networking contact

Topic: Online presence: LinkedIn, and how to find information on your industry (social capital)

During regular weekly supervision with your intern, go over how to access more about this field/industry online

- Professional Associations
- Conferences or networking events
- LinkedIn: how is it used within this field

    - What pointers do you have for your intern's LinkedIn page?
- Online job search: where is it best to look

Topic: Skills: What skills does the intern still need to build?

During regular weekly supervision with your intern, talk about the skills they have gained during the internship and recommendations to build future skills.

- What job skills has the intern built during their internship?
- What skills do they still need to gain to be competitive in this industry?
- How can the intern continue to build those skills after the internship ends?

Topic: Next Steps: where does the intern want to go from here?

During regular weekly supervision with your intern, talk about what is next for them when the internship ends.

- If they want to go into your field, when should they begin their job search?
- What is the best process to add more contacts to their personal network?
- What should they include from their internship on their resume?
- What type of interview questions should they be prepared to answer?

Appendix B
Data Analysis: A Priori Codes

Table 7. *Determined using the graduate capital scale (Tomlinson et al., 2022)*

Code	Definition	Cultural Capital or Social Capital
Employers	Names of organizations and potential places the intern may work after graduation	Social Capital
Jobs	Specific positions within employers and organizations where the intern may work after graduation	Social Capital
Connections	The people the intern considers to be a part of their career network, including new contacts made at their internship site	Social Capital
Personal Development	How the intern is intending to grow their skills and behaviors to meet the demands of their intended future career	Cultural Capital
Cultural Fit	How the intern describes the behaviors and personal attributes/work style needed for success in their industry	Cultural Capital
Confidence	How the intern describes their skills, ability, and potential to fit in their industry, may include discussion of achievements	Cultural Capital

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Evaluating Impact over Attendance: Enhancing Multifaceted Employer Engagement Programs for STEM Trainees

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Abstract: This article calls for a shift in evaluating employer engagement programs for STEM trainees, moving beyond attendance metrics to focus on career impact (Kozma et al., 2021; McGunagle & Zizka, 2020). It underscores the significance of experiential learning and industry connections. Rather than focusing on attendance, it advocates assessing programs such as site visits, networking events, career expos, and industry panels based on engagement quality, relationship building, and post-event outcomes (Howell et al., 2024; Jackson & Bridgstock, 2021; Male & King, 2019). Leveraging qualitative insights, this approach prioritizes impact over numbers, enhancing employability and expanding professional networks while providing career insights into diverse pathways.

Keywords: Employer Engagement, University-Industry Relations, STEM Career Development, Experiential Learning

As the job market becomes increasingly challenging due to the shifting economic priorities, technological advancements, and changing workforce expectations, many STEM trainees - Master's and PhD students and postdoctoral researchers, are reconsidering their career plans (Collins & Gray, 2024; Handshake, 2024; Rosenzweig et al., 2021). In academic environments, training focuses on building research skills, developing expertise in their subject area, and extensive knowledge within specialized fields (Fuhrmann, 2016). While rigorous academic preparation prepares STEM trainees to advance research, the World Economic Forum's *Future of Jobs Report* (2023) highlights a growing demand for broader skill sets among job seekers, such as technological fluency, analytical and creative thinking, curiosity, and lifelong learning.

Despite an increasing interest in diverse career pathways, there remains a lack of employer-related engagement programs such as information sessions, career fairs, and recruiting events focused on advanced-degree roles in industry research and development (R&D), government, and non-profit sectors tailored for STEM trainees (Meyer-Miner, 2021; Shrestha, 2022). This gap underlines the importance of career development programs, specifically employer engagement initiatives, in the professional development of STEM trainees (Rao & Sluder, 2024). According to Lehne (2024), companies gain access to next-generation STEM experts by collaborating with educational institutions to address STEM talent shortages. Tailored employer engagement programs are crucial for preparing individuals for non-academic career pathways, equipping them with the skills and connections necessary for success in industry settings (Ganapati & Ritchie, 2021).

This article highlights the need to assess employer engagement programs beyond surface-level attendance metrics, focusing on meaningful impacts such as participant skills development, fostering lasting connections between employers and trainees, and improving long-term career outcomes for STEM trainees. The author presents specific examples of tailored activities, their purpose, and how to evaluate them for effectiveness, offering actionable insights for career services to implement impactful programs that advance the readiness of STEM trainees for diverse career pathways.

Importance of Experiential Learning and Connections with Employers and Industry

Employers seek to recruit talented individuals who blend analytical rigor with creative problem-solving, technological fluency, and a willingness to engage in lifelong learning—skills that are often underemphasized in traditional academic training (National Association of Colleges and Employers, 2023). To bridge the gap between academic training and career success, experiential learning opportunities such as internships, co-ops, and research collaborations with industry allow trainees to tackle real-world challenges (Van Wart et al., 2020). As highlighted by Rao and Sluder (2024), offering experiences that extend beyond academic boundaries equips trainees with the critical skills necessary for career success.

While experiential learning provides hands-on experience, it is equally important for trainees to establish strong industry connections to fully prepare for the workforce. Building these connections and employer partnerships provides trainees with insights into workforce needs and emerging technologies (Business Higher Education Forum, 2024). Engagements with industry experts offer networking opportunities that lead to internships, full-time job placements, and collaborative research projects. By interacting with industry professionals, trainees gain access to a broader job market and receive mentorship and career guidance, helping them to navigate their career pathways more effectively (McGunagle & Zizka, 2020). Employer engagement activities such as information sessions, industry panels, and site visits play a critical role in enhancing preparedness and career prospects. This is especially important given that 53.3% of all Ph.D. graduates work outside academia, with industry being the largest employer, at 46.7% of graduates in 2023 (National Center for Science and Engineering Statistics, n.d.). Given the importance of experiential learning and employer or industry connections, assessment strategies that rely solely on attendance numbers fail to capture the full impact of a program on trainees' career growth.

Limitations of Attendance Metrics

While attendance numbers may signal initial interest, they often fail to indicate whether attendees gained valuable insights or took actionable steps afterward. A room full of participants might appear successful at a glance. However, this metric does not capture whether the event successfully met its goals, such as facilitating lasting professional connections, discovering new career opportunities, or offering helpful advice for their job search (Ivy Exec, 2023). Over-reliance on attendance risks overlooking whether these events serve all participants equitably or if certain groups remain underserved (Kantrov, 2017; Rodriguez et al., 2016). While tracking attendance can provide some demographic

insights, it does not fully assess whether engagement is meaningful. At my current institution, for example, follow-up surveys and tracking of career outcomes are conducted to help ensure that participants benefit equally from the engagement.

In some cases, high attendance might only reflect superficial engagement without a lasting impact on attendees' career development. To move beyond the limitations of attendance metrics, institutions must adopt a more holistic evaluation approach that captures the depth and sustainability of engagements. This includes integrating additional data points that can be collected through qualitative methods and focus groups.

Integrating Comprehensive Metrics and Focus Group Insights

Combining quantitative and qualitative methods is essential to better capture the impact of employer engagement programs on the career development of STEM trainees. Surveys conducted at multiple intervals—immediately after the event and again three months and six months later can provide insight into the long-term effects on trainees' career trajectories. By surveying at these intervals, career centers can track feedback, such as whether attendees have applied for positions with the employer hosting the event, received interviews, or secured job offers (see Appendix A for a sample employer event outcomes survey).

Key questions like "Did the event increase your interest in the organization?" or "Have you applied for positions at the organization since attending the event?" help capture relevant outcomes beyond attendance (McGunagle & Zizka, 2020). By tracking these outcomes over time, institutions can evaluate whether these events are truly helping trainees advance in their career paths.

In addition to quantitative data, focus groups with trainees and employers offer a richer perspective on whether events foster meaningful, career-impactful connections. Focus group discussions with employers can center on their recruitment goals and the talent they are engaging with (see Appendix B for sample questions for the employer intake call). In contrast, trainee focus groups can help identify whether employer topics align with career needs or where improvements could enhance career exploration (see Appendix C for sample focus group questions for trainees). These insights provide a clearer picture of an event's success than attendance numbers alone and highlight areas where trainee expectations and employer priorities may need closer alignment (Rodriguez et al., 2016).

Unlike surveys, focus group discussions allow for a deeper exploration of participants' motivations, career goals, and experiences, providing context that surveys and data cannot capture (Onwuegbuzie et al., 2009). By directly hearing from different perspectives, in this case, the trainees and employers, we can better identify the nuanced perspectives that inform the planning and adjustment of future employer engagement programs.

For instance, past focus group discussions at my workplace revealed that trainees were often unaware of the skills employers sought or how to prepare application materials for specific industries. This feedback led to more targeted employer engagement programs,

such as resume reviews by employers and informal one-on-one coffee chats, which better prepared participants for their job search.

Building on the importance of experiential learning and the limitations of attendance-based evaluation, a more holistic approach to employer engagement programs is necessary to ensure meaningful career impact for STEM trainees. By integrating comprehensive assessment methods, institutions can better understand how these programs influence career readiness, skill development, and long-term career placement outcomes (Leavitt & Leigh, n.d.). With these evaluation strategies in place, the next step is to design and implement tailored employer engagement programs that directly address the career needs of STEM trainees. The following section explores examples of activities that go beyond conventional career events, offering structured experiences that facilitate deeper connections between trainees and industry professionals.

Tailoring Employer Engagement Programs to Meet Career Needs

To maximize experiential learning, designing engagement programs that align with STEM trainees' specific career goals is crucial. These programs should move beyond general networking events to provide targeted interactions between trainees and industry professionals. Activities such as site visits, which provide an inside look into a company's operations, or employer panels focusing on specific industries can offer trainees insights into how their skills align with industry needs. By tailoring these experiences, trainees gain valuable insights into roles suited to their skills and interests.

Examples of Employer Engagement Activities

Employer Campus Days and Visits

Purpose: Host employers on campus for a full or half-day of activities, such as information sessions, small group coffee chats, resume reviews, or on-site interviews. These events allow trainees to gain insights into company culture, current projects, open roles, and industry trends. Beyond recruiting, campus visits can also spark conversations between employers and faculty or research staff, opening doors to collaborative projects, internships, or capstone projects tied to research or sponsored research opportunities. By fostering these connections, universities and employers build lasting partnerships that support both talent pipelines and innovation.

For example, we hosted a company for a Product Showcase and Resume Review. The company representatives brought in a few of their products for a showcase and demo for the audience, followed by an information session where they shared details about their organization. One-on-one resume review sessions were followed by hiring managers, including those from human resources, as well as scientists and engineers. These sessions offered attendees personalized advice while also providing insights into the organization's latest developments.

Engagement metrics, such as follow-up actions (e.g., interviews, job applications), are tracked through post-event surveys (see Appendix A) and follow-up contacts with employer partners to assess their impact. For example, we hosted a virtual information session for an employer to promote their organization and upcoming internship program.

The event had 30 attendees, and seven students applied to the internship program. These results were confirmed through email from the employer after the application deadline. This metric highlighted students' interest in the organization and program, helping us make the case for inviting the company to future events and identifying additional opportunities for engagement.

Career outcomes are tracked by measuring how many trainees secure internships or full-time positions after the event. In the previous example of the company that hosted the product showcase and resume review, we collected feedback through post-event surveys sent immediately, three months after the event, and six months after the event. From these survey responses, we learned that two attendees applied for full-time roles and advanced to final-round interviews. Of the two, one was offered the role and accepted the offer. These outcomes were confirmed through follow-ups with both the employer and the trainee, as well as LinkedIn tracking, which helped us demonstrate the value of engagement to prospective employers.

In addition, attendee feedback is gathered through post-event surveys, assessing how well attendees understand the industry's emerging trends. For example, about 70% of our trainees reported that the different employer engagements helped them better explore career pathways and feel more confident about their job search. This feedback informs the career center to offer specialized sessions for future events.

Company Treks/On-Site Visits

Purpose: Company treks provide STEM trainees with the opportunity to visit companies, research facilities, or national labs, offering a firsthand look at industry environments. These visits allow trainees to meet current staff members, tour R&D labs, and explore potential career pathways in industry positions.

To measure impact, we collect feedback on how the visit expanded attendees' networks and influenced their career exploration. Each quarter, we bring a group of 10-15 trainees to a local company for an on-site visit. Before the visit, we coordinate with the employer host to finalize the agenda, ensuring that the R&D labs, facilities, and career panelists align with our trainees' research areas and expertise. We also share a resume book of the trainees with the employer in advance. During the visit, trainees receive an introduction to the company, tour R&D labs and facilities, engage with staff through a career panel, and participate in a networking mixer. Afterward, attendees complete a survey to assess their experience (see Appendix D for a sample post-trek experience survey). We also share the feedback with our employer hosts to help them enhance future visits and strengthen their engagement with trainees.

In addition to assessing career exploration, we use the visits to measure job placements that result from these interactions. For example, after visiting a pharmaceutical company in the previous Winter quarter, one participant reported in the career center's internship survey that they secured an internship through a connection made during the visit. Tracking these placements allows us to assess the long-term impact of the treks and highlights the potential for employers to tap into our institution's talent pool. These data

also supports the value of on-site visits, helping us build stronger employer partnerships in the future.

Employer Led Skill-Building Workshops and Panel Discussions

Purpose: These events are designed to equip trainees with industry-relevant skills, including technical writing, leadership in R&D, and communication in industry settings. Panels can cover topics like industry trends, career development, and challenges in the STEM field.

In collaboration with the Career Development and Education Outreach office, we facilitate a 10-week "Communication Skills for Industry" program. The application-based program is designed for graduate students and postdocs to develop communication skills for a variety of interactions with industry professionals. The weekly workshops cover strategies for effective communication with R&D teams, hiring managers, and business-focused audiences. Participants also engage in small-group networking meetings with industry mentors, culminating in a capstone presentation and a competition featuring industry representatives.

The impact of these programs is evaluated through skill application and the development of relationships. We track how trainees apply the skills they learn in their research, projects, or internships, as well as how mentorships and collaborations are fostered through interactions with employers. The data is gathered through one-on-one career advising appointments, email exchanges with participants, and responses to pre- and post-program surveys. For instance, one participant in the communication skills program shared that it helped them engage with a range of industrial audiences, allowing them to communicate more effectively with experts across different fields (Dailing, 2024a). Additionally, employers who attended a panel and research symposium indicated that these engagements helped them build talent pipelines and foster new research partnerships by interacting with students and postdoctoral researchers (Dailing, 2024b).

Career Fairs and Recruiting Events

Purpose: Provide a centralized opportunity for trainees to engage with multiple employers from different industries. Unlike traditional career fairs, where attendees wait in lines for brief conversations at employer tables, advanced degrees career fairs feature employer presentations, group networking sessions, and one-on-one short interviews or chats. This format ensures meaningful interactions by aligning trainees with employers based on interests and career goals. Additionally, it enables trainees to explore job opportunities, engage with industry professionals, and gain insights into different career pathways. Career fairs and recruiting events are high touchpoints for trainees to network with hiring managers, learn about company cultures, and identify potential career prospects.

To assess impact, we evaluate the quality of interactions between trainees and employers. Before the career fair, we host preparation workshops for trainees and schedule calls with employer representatives to understand their hiring goals. These efforts ensure that trainees maximize their interactions with employers and that employers can effectively engage with the talent pool.

Post-event follow-ups, including surveys and employer debrief calls, help assess the event's effectiveness and address the needs of employers. In these debrief calls, employer representatives provide insights on attendee preparedness, resume competitiveness, and the alignment of candidate skills with industry expectations. Example questions include:

- "Were the candidates you interacted with well-prepared for the event?"
- "Do you feel the resumes included in the resume book aligned with your company's hiring needs?"
- "Did the structure and timing of the career fair align with your recruiting cycle or hiring windows?"
- "Were there any specific skills or experiences you were hoping to see that were lacking?"

These steps help us gather feedback on factors such as the relevance of candidate conversations and employer interest in following up with participants. For example, we ask employers whether they identified strong candidates, whether conversations aligned with their hiring goals, and whether they would attend future events. On the trainee side, we assess whether the event helped support their career goals, expanded their professional networks, or led to follow-up opportunities. This feedback is used to refine event formats, improve preparation workshops, and inform future employer outreach.

In addition to general feedback, we also follow up on specific employer needs identified in pre-event calls. This personalized approach ensures that the feedback we gather is actionable and aligned with expectations. It directly informs the design of future programming, including how we structure events and prepare trainees.

Career outcomes are also another key metric. We track how many trainees secure internships or full-time positions directly linked to the fair. For example, three attendees secured internship interviews following the recent career fair, and one received a full-time job offer. These outcomes are verified through trainee follow-ups and LinkedIn tracking, demonstrating the event's effectiveness in facilitating job placements.

Additionally, trainee feedback helps us better plan for future events. Surveys assess attendees' perceptions of the range of companies present, the usefulness of networking opportunities, and how well the event prepared them for the job market. For instance, 75% of respondents in a recent survey reported feeling more confident about their job search after attending a career fair. These insights guide improvements in career fair structure, employer outreach strategies, and preparatory workshops for attendees.

Conclusion

In today's competitive job market, employer engagement programs for STEM trainees are essential for bridging the gap between academic training and industry demands. This article has highlighted the importance of prioritizing impact over attendance in evaluating these programs, calling for a shift from attendance metrics to a more nuanced, impact-focused approach. By incorporating a comprehensive evaluation method, institutions can capture the value of programs that offer hands-on experience, mentorship,

and connections with industry leaders—key elements for preparing STEM trainees for diverse career pathways.

Through examples of tailored employer engagement activities, such as site visits, industry panels, and career fairs, this article highlights the role of these programs in expanding professional networks, enhancing job market preparedness, and developing essential skills that may be overlooked in traditional academic training. By doing so, universities and employers can build stronger partnerships that support the holistic development of STEM professionals, ultimately contributing to a more skilled and adaptable workforce.

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Appendix A
Employer Event Outcomes Survey

This appendix shows the survey sent to participants immediately after three and six months following the employer events. This survey is administered through the career development CSM platform, but a plain text version is provided below for reference. Questions marked with asterisks (*) have been set up with dependencies based on whether a yes or no answer was given in the survey.

First Name:

Last Name:

Email:

Select all the events(s) that you've attended:

Did the event(s) increase your interest in the organization(s)? Y/N

Did the event(s) help you in your career exploration? Y/N

*Since attending the event(s), have you applied for any internships or full-time positions at the organizations presented? Y/N

List the organization name(s), title(s), and position type(s) you applied for.

*Did you have any interviews with these organizations? Y/N

List the organization name(s) that you had interviews with.

*Did you receive any internship or job offers? Y/N

List the organization name(s) you received job offers from.

If you have any comments or feedback about your experience in these events or engaging with employer partners, please feel free to share that here. (Free response)

Appendix B
Questions for Employers (Intake Call)

This appendix provides sample questions used during introductory calls with employer partners, as referenced in the section on focus group discussions. These questions can be adjusted based on the individuals in the conversation, such as representatives from human resources, talent acquisition, hiring managers, or technical professionals like scientists and engineers. The discussion aims to understand the company's hiring needs, alignment with our institution's research strengths, and interest in employer engagement opportunities.

1. Can you share insights into your company's research focus and key areas of R&D?
2. What types of roles do you typically hire for, and what skills or expertise are you seeking?
3. What entry-level R&D roles are available for PhD candidates with no industry experience?
4. Does your organization hire master's-level candidates? If so, are they considered part of early talent recruitment alongside undergraduates?
5. Have you engaged with our university before? If so, what types of programs or initiatives have you participated in?
6. Would your team be interested in participating in recruiting events, career panels, site visits, or mentorship programs?
7. Are there specific ways we can facilitate connections between your company and our graduate students/postdocs?
8. What are your priorities for university partnerships? (e.g., talent recruitment, brand visibility, collaborative research, faculty engagement)

Appendix C
Focus Group Questions for Trainees

This appendix outlines the sample questions used in a focus group conducted with trainees to gain deeper insights into their career needs and exploration process. Participants were divided into two groups: one for master's students and another for PhD trainees and postdocs.

1. Why did you choose to engage in the professional development training, workshops, and events that you have so far? What were your motivations?
2. Can you share any specific examples where your engagement with a program or event led to tangible benefits in your career and professional development?
3. What gaps do you see in our professional development offerings? Are there topics you feel should be covered but currently are not or areas that could be addressed differently?
4. What are some challenges you've experienced (or know others have experienced) in participating in professional development activities and events?
5. How have you approached career exploration? What resources or experiences have been the most helpful in identifying potential career paths?
6. Have you engaged with employer-hosted events at our institution? If so, what aspects of those experiences were most valuable? If not, what prevented you from attending?
7. What other feedback do you have for us?

Appendix D
Trek Experience Post-Survey

This appendix contains the survey sent to participants after they attend a company trek. This survey is conducted anonymously through the career development CSM platform and has been modified to plain text, as shown below.

1. Are you a: (a) Master's Student (b) PhD Student (c) Postdoc
2. What trek did you participate in? Pick from the list.
3. Please rate your agreement with the following statements regarding different aspects of the trek: Likert Scale (Strong Disagree - Strongly Agree; Not Applicable)
    a. The presentation provided valuable insights into the company's mission, goals, and culture.
    b. The presentation increased my interest in career opportunities at this company.
    c. The tour was informative and gave me a better understanding of the company's activities and resources.
    d. The opportunity to see the lab facilities added value to my overall experience of the trek.
    e. The panelists effectively shared their experiences and expertise in their respective roles.
    f. The panelists addressed relevant and important questions about working at the company.
4. We spent an appropriate amount of time at the company.
5. Are you considering applying to full-time positions/internships at this company? (Yes/No/Maybe)
6. Did the trek meet your expectations with regard to providing information about the organization and gaining insight into career opportunities? (Yes/No/Maybe)
7. Please share any other feedback or suggestions here. (Free response)

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Evaluating a Career Design Micro-Course for First-Year Engineering Students

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Abstract: This paper describes the evaluation of a career design micro-course integrated into a required first-year introductory engineering class. The micro-course was a collaborative effort between faculty and career development staff. Rooted in a career design paradigm, the micro-course included practical career development strategies and personal reflection. Pre- and post-course survey data, including the Career State Inventory, indicate how students' career decision state changed by the end of the course. Using quantitative and qualitative data, the paper provides insight into one university's efforts to integrate career development into the academic curriculum, with implications for career development research and practice.

Keywords: career development, career readiness, first-year students, curriculum integration

Over the past decade, there has been much discussion in higher education about supporting college students' career success. As college costs have risen dramatically, the return on investment of a college degree has been increasingly questioned. Students, parents, and government officials have called for more transparency and accountability from higher education institutions around career outcomes that justify the value of a college degree (National Conference of State Legislatures [NCSL], 2024). A recent task force of state legislators on higher education defined education that provides "value," in part, as a program that "lead[s] to desirable life, career and learning outcomes" (NCSL, 2024, p. 9). The stakes may be even higher for the many students who take out loans to finance their college education (Council of Economic Advisors, 2024).

Career services offices, consisting of teams of professionals tasked with supporting college students' career success, have traditionally been positioned on the margins of an institution, often reporting to divisions of student affairs (National Association of Colleges and Employers [NACE], 2019). Their services include workshops and individual career advising sessions that address topics such as resume preparation, job/internship search, and salary negotiation. As career services at most institutions are not a mandatory part of the curriculum, students must seek out career services and "opt in" to take advantage of the offerings. As a result, career services offices typically reach only a fraction of the student population, often too late in a student's college experience to have maximal impact (Nester, 2022). Students' disparate usage of career services can result in inequities in post-college career outcomes. For example, a recent NACE study found that students

who utilized their university's career services averaged more job offers than students who did not (Van Derziel, 2022).

A 2018 report by EAB Global, Inc. contends that "a central career services approach won't be enough" (p. 17) to prepare students for post-college career success. They argue that "institutions should move toward an integrated approach that incorporates student affairs-style parallel programming and more traditional academic programming into a student's career development" (EAB Global Inc., 2018, p. 18). Considering these realities and the call for institutions to put more resources toward supporting student career success, higher education practitioners and thought leaders have begun to urge institutions to integrate career learning into the student experience (Nester, 2022). Career development practitioners have increasingly been leading efforts to weave career learning into the academic curriculum (Gatta et al., 2024). However, evaluating the success of career education in the classroom remains a challenge, and there is a dearth of scholarly research on the topic. This article describes our university's effort to integrate career learning into the academic curriculum and our attempts to measure the impact of those efforts.

Our research makes several contributions to the understanding of impactful career education practice. First, we detail how our institution embedded career and life design concepts into an existing academic course with the goal of developing students' career readiness. Second, we provide insight into how our career development staff partnered with academic faculty to integrate career readiness programming into the classroom. Third, we document quantitative and qualitative strategies for evaluating learning outcomes. Finally, this paper advances our understanding of how the Career State Inventory (CSI), a relatively new instrument in the field of vocational psychology, can be used in career development research and practice.

Background

Career Readiness

NACE defines *career readiness* as "a foundation from which to demonstrate requisite core competencies that broadly prepare the college-educated for success in the workplace and lifelong career management" (2021). NACE has identified the following eight core competencies associated with career readiness: Career and Self-Development, Communication, Critical Thinking, Equity and Inclusion, Leadership, Professionalism, Teamwork, and Technology. The NACE competencies were initially developed in 2015 by a task force that included college career services and HR/recruiting professionals and then refined by two subsequent task forces in 2017 and 2020 (NACE, 2022).

While students may develop various career readiness competencies through curricular and extracurricular experiences in college, this study focuses on the *Career and Self-Development* competency. According to NACE (2021), Career and Self-Development is an individual's ability to "proactively develop oneself and one's career through continual personal and professional learning, awareness of one's strengths and weaknesses, navigation of career opportunities, and networking to build relationships within and without

one's organization." NACE has established the following list of behaviors that demonstrate competency in career and self-development:

- Show an awareness of one's strengths and areas for development.
- Identify areas for continual growth while pursuing and applying feedback.
- Develop plans and goals for one's future career.
- Professionally advocate for oneself and others.
- Display curiosity; seek out opportunities to learn.
- Assume duties or positions that will help one progress professionally.
- Establish, maintain, and/or leverage relationships with people who can help one professionally.
- Seek and embrace development opportunities.
- Voluntarily participate in further education, training, or other events to support one's career. (2021, Career & Self-Development section)

As college career services offices are beginning to pivot away from traditional outcome measures (e.g., starting salaries) and engagement metrics (i.e., numbers of students who attend a career fair or a workshop) and moving toward a *career ecosystem* paradigm (Podany, 2024), the career readiness competencies provide a learning-oriented framework through which to engage students in career development. However, there are limitations to how career development practitioners can measure students' growth in the competencies. For example, the recently launched NACE Competency Assessment Tool (NACE, 2024) relies on student self-reports and faculty, career advisor, and/or employer observations to rate students' competency development. Thus, multiple partners must participate in assessing students' competencies. Furthermore, data from recent student and employer surveys indicate there may be gaps between how students and employers rate students on the competencies (Gray, 2025). Therefore, while a competency-based approach can help educators articulate career learning outcomes, measuring students' progress toward those outcomes is a complex endeavor.

Career and Life Design Framework

While the terms *life design* and, more recently, *career design* have appeared in the vocational development literature as theoretical frameworks for the past two decades (Dean et al., 2020; Savickas et al., 2009), an unrelated, and yet arguably more user-friendly and practical approach to college student career development was developed in 2016 by Bill Burnett and Dave Evans of Stanford University. Burnett and Evans (2016) co-wrote the book, "Designing Your Life: How to Build a Well-Lived, Joyful Life," based on their experiences with college students and guided by positive psychology and design thinking principles. Their career and life design framework has been adapted by career development practitioners globally for use with college students and early- and mid-career professionals looking to design their careers (Catrino, 2022). Some university career centers have even integrated the word "design" into their names. For example, Johns Hopkins University recently rebranded its career services office as the Life Design Lab (Hub Staff, 2019), and Dartmouth College is planning a restructuring of its Center for Professional Development, which will be rebranded as the Dartmouth Center for Career Design (Dartmouth College, 2024).

Through Burnett and Evans' (2016) career and life design framework, students are encouraged to consider their career a design challenge. They are empowered to design their futures using several key principles: engaging their curiosity, having a bias to action, ideating multiple possible pathways, prototyping and testing career ideas, getting support from others (radical collaboration), and reframing questions and problems. Rather than having students view their career development as a linear apply-plus-interview-equals-job equation, the career and life design framework invites students to develop empathy for themselves and others, articulate their values, and reflect upon what kind of impact they want to have in the world. Furthermore, career design encourages students to leverage their unique interests and strengths into a meaningful career through designing small experiments or *prototypes* to test career ideas, connect with others, and design for the future. In summary, the career and life design framework offers a way for students to approach their career development holistically, rather than simply in pursuit of a job.

Career Development Courses

According to Christianson (2021), a career development course can positively influence students' career self-efficacy, defined as students' beliefs in their ability "to manage specific tasks necessary for career preparation, entry, adjustment, or change across diverse occupational paths" (Lent & Brown, 2013, p. 561). Nester (2022) argues that career education courses should be embedded into college curricula to address the needs of every student, particularly to address career indecision. Nester (2022) goes on to say that "if colleges and universities address indecision at the beginning of a student's academic journey, they can improve the overall [college] experience" (p. 207). While career development courses can take many shapes and forms, there is a dearth of published research on the impact of these courses, particularly at the postsecondary level.

Two studies provide insight into measuring the impact of a career course. The first (Prescod et al., 2023) used a qualitative survey to learn about the experiences of STEM-interested students in a three-credit, standalone career planning course. That study found that overall, students responded positively to the course and became more decided about their choice of major. The second study (Miller et al., 2018) used a quantitative instrument, the CSI, to assess the impact of a three-credit standalone college career course. Miller et al. (2018) found that students became more certain, satisfied, and confident after participating in the career course. They also found that outcomes varied depending on whether students were in their early college years or closer to graduation.

At the University of Virginia (UVA), we developed a career design micro-course for engineering first-year students that centers on NACE's career and self-development competency and is rooted in career and life design concepts. This paper attempts to answer the question, "What change, if any, did students report in their career decision state after a two-semester career design micro-course?"

Methodology

Research Site

UVA is a mid-sized, public research institution in central Virginia. It is the flagship public university of Virginia and enrolls close to 16,000 undergraduates. The School of Engineering and Applied Science (UVA Engineering, or Engineering School) has an enrollment of approximately 2800 undergraduate students and 1200 graduate students. Students apply and are admitted directly into the Engineering School, and approximately 700 students matriculate into the program annually. Students can major in any one of nine different programs and can minor in engineering or another discipline (such as business, social sciences, natural sciences, etc.).

UVA Engineering's mission is "to make the world a better place…by preparing engineering leaders to solve global challenges" (University of Virginia School of Engineering and Applied Science, 2025). Our core values include societal impact, innovation, collegiality, and excellence through diversity. These values are imbued throughout the student experience and the academic curriculum. In Fall 2023, UVA Engineering launched a newly designed, year-long Engineering Foundations (EF) course required for first-year undergraduate students. EF explores the fundamentals of engineering and sociotechnical thinking and provides students with tools to succeed in college and beyond. Students are introduced to engineering practice and the design process, the concept of engineering as an endeavor that shapes and is shaped by society, the fundamentals of engineering ethics, and oral and visual communication. Through a partnership with the associate dean for undergraduate affairs and the assistant dean for career development, the Engineering Career Development team designed and embedded a career design micro-course into the larger EF course, detailed below.

Career Design Micro-Course

Career and Self-Development is one of seven learning outcomes of the EF course. In alignment with the engineering design focus of EF, the Career Design Micro-Course utilizes design thinking concepts to promote career and self-development through a career and life design framework based on Burnett and Evans' (2016) *Designing Your Life* curriculum. UVA's Engineering Career Development team created a set of learning outcomes that reflect tasks we believe are an important foundation for first-year engineering students to build career self-efficacy. The learning outcomes of the career design course were as follows:

- Develop a professional resume and Handshake profile
- Reflect on work and life values, interests, and strengths, and translate those insights into design criteria for future careers
- Identify ways to prototype and test career ideas (e.g., through internships, research, projects, extracurricular involvement, volunteering, and other experiences)
- Learn how to research career pathways in engineering and adjacent fields
- Conduct an informational interview with an alumnus or other professional in a field of interest
- Develop an academic and career plan for the remaining college years and one to two years beyond college

The Center for Engineering Career Development team delivered the career design micro-course through four in-class modules spanning the fall and spring semesters. The career design instructional team included the director of career development, the associate director of career development, and two career advisors. Depending on the semester, there were between 18 and 20 sections of the course, and the sections were distributed among each career development staff member so that each instructor taught between four and six sections. Each module was delivered during an entire class period (75 minutes) of the required EF course, and two modules were offered each semester. A description of each of the modules is below. See Table 1 for a brief summary of the micro-course.

Module 1, Early Fall

Students were introduced to the principles of career and life design (Burnett & Evans, 2016) and the micro-course learning objectives during Module 1. They engaged in an in-class reflection around "curiosity" and were encouraged to connect their career designs to their curiosities. During the second half of the class, students were introduced to the basics of resume writing and learned about the university's career platform, Handshake. They were assigned to draft a one-page resume and directed to use VMock, an AI-assisted resume review platform, to score their resume. They were also assigned to take the Life Values Inventory (Brown & Crace, 2002) as a pre-work assignment for Module 2. Students received a personal career journal, created by the career development team, to complement the in-class and out-of-class reflection activities and assignments.

Module 2, Late Fall

For the second module, career advisors returned to class to lead a conversation around "Building a Compass" (Burnett & Evans, 2016, p. 29) and engaging students with their values. The concept of "being instead of achieving" (Rogers, 2016, p. 138) was discussed as a way of getting students to reflect upon their career as a journey that connects to the impact they wish to have in the world, rather than simply as a means to a (financial) end. Students engaged in an in-class Workview and Lifeview reflection (Burnett & Evans, 2016, pp. 34-37) and were assigned a brief written reflection on the integration of their workviews and lifeviews. At the end of the class period, students engaged in a short reflection around their proudest accomplishments as a way to begin to understand their strengths. Finally, they were encouraged to start exploring practical ways to engage their curiosities, values, and skills through undergraduate research, internships, study abroad, and other "high-impact" experiences (Kuh, 2008).

Module 3, Early Spring

Module three was delivered in the early spring semester and focused on "Wayfinding" (Burnett & Evans, 2016, p. 41). Since the students were starting a new course (Engineering Foundations 2) and fresh off their winter break, career advisors reviewed the Career Design principles and engaged students in a creative mind-mapping activity. Using colored pens and pencils, students drew themselves at the center of their map and created spokes to the myriad curiosities, strengths, and values they had identified in the fall. Students were

encouraged to notice connections between the different parts of their mind maps and were challenged to develop "prototypes" (Burnett & Evans, 2016, p. 107), or experiences that would incorporate three or more of their ideas. Students were then given an assignment to learn more about a career pathway that connected to their mind maps by conducting an informational interview with an alumnus or other professional of their choosing. Some basic tips on how to connect with professionals and conduct an informational interview were discussed in class.

Module 4, Late Spring

In the final module, career advisors convened the course by asking students to share their experiences with the informational interviews. Then, students used the in-class time to develop Odyssey Plans (Burnett & Evans, 2016, p. 96), which entailed creating three alternative versions of their lives for the next 5 years. Students were encouraged to include academic, career, and personal goals in their Odyssey plans, and were assigned an out-of-class "meta-reflection" that asked students to integrate everything they learned through the micro-course. Advisors invited students to keep designing their careers beyond the conclusion of the course, and were told about the career advising and other resources at the university to help them on their journeys.

Research Methods

We assessed learning outcomes for individual students through each of the four modules by completing in-class and out-of-class written assignments tracked by the course teaching assistants. The career design assignments were factored into students' course grades, comprising ten percent of their overall course grade. Our primary research method allowed us to document observable learning outcomes aligned with the career and self-development competency. For example, NACE suggests that students "display curiosity," "show an awareness of one's own strengths," and "establish relationships with people who can help one professionally" (Career & Self-Development Competency; NACE, 2021). Through engaging in curiosity and strengths reflections during class, students worked on their self-awareness and began cultivating their professional community through the informational interviews. As the career readiness competencies provide only a guide to career development and not an endpoint, we view the activities as lifelong career management behaviors and, therefore, cannot measure them quantitatively.

However, our team felt that a quantitative measure of students' career development would also be helpful to better understand how students' thoughts, feelings, and attitudes around their careers did or did not change through their first year. To assess the impact on students' career readiness, we sought an externally validated instrument that would lend itself to a pre- and post-course design that could be readily administered as part of a larger course evaluation survey. The CSI (Leierer et al., 2025) is a validated instrument that

Table 1. *Details of Career Design Micro-Course*

Module Component	Module 1 Early Fall	Module 2 Late Fall	Module 3 Early Spring	Module 4 Late Spring
Theme	Intro to Career and Life Design Framework	Building a Compass	Wayfinding	Odyssey Planning and Course Wrap-up
In-Class Activity	● Introduce micro-course objectives ● Curiosity reflection ● Handshake overview ● Resume 101	● Values discussion ● Workview/Lifeview guided reflection ● Strength reflection ● Exploring the University: Resources for the first year and beyond	● Mind mapping ● Prototyping ideation ● Introduction to informational interviews and networking	● Career design interview debrief ● Introduction to Odyssey planning ● Course wrap-up
Out-of-Class Activity	● Resume draft ● Life Values Inventory (pre-work for Module 2)	● Workview/Lifeview integration essay	● Career design (informational interviews)	● Odyssey plans (3 alternative plans for the next 5 years)

measures students' career decision state as a composite of their certainty, satisfaction, and clarity regarding their career choices. Certainty is measured by a two-part, open-ended question about occupations that the student is considering. Responses to these questions are then assigned a score between 1 and 4, with 1 being more certain and 4 being less certain. Satisfaction is measured by asking students to rate their satisfaction with their previously listed occupations on a 5-point Likert scale that ranges from 1 (very satisfied) to 5 (very dissatisfied). Finally, clarity is measured by three true-false questions, where each true response is given a score of 1 and each false response is given a score of 0. The total clarity score is the sum of the three true-false scores, where a 0 indicates a high level of career decision-making clarity and a 3 indicates career decision-making difficulty.

Total CSI scores, the sum of the three sub-scores, range from 2 to 12, indicating at the low end that a student is goal-directed, satisfied, clear, and confident in their career decision making and indicating on the high end that a student is frozen, dissatisfied, confused, and lacking confidence in their career decision (Leierer et al., 2025). Leierer et al. (2025) suggest the CSI can be used to measure the change in career decision state of a group following an intervention, such as a career course or workshop. Thus, we felt the CSI was an appropriate instrument to measure any change in career decision state for our students who participated in the career design micro-course.

Participants

First-year engineering students who participated in the career design modules in the 2023-2024 academic year were asked to complete the CSI at two points in time: once at the start of the Fall 2023 semester, in mid- to late September, before the career design modules took place, and once again at the end of the Spring 2024 semester, in late April or early May, after completing all four career design modules and a year of engineering courses. Over 700 first-year engineering students were enrolled at the time of the study. However, of the students who consented to let us use their data for research purposes, only 62 students completed both the fall and spring administrations of the surveys. The scores from these 62 students make up our final dataset. In our dataset, 48% of students (n = 30) are women and 52% (n = 32) are men. Further, 60% (n = 37) of the students in our sample are White, 18% (n = 11) are Asian, and 11% (n = 7) are Hispanic, Black, or African American. Women and White students are overrepresented in our sample compared to the overall undergraduate population of the School of Engineering (approximately 34% and 50%, respectively).

In addition to the CSI (quantitative measure of students' career decision state), we included one qualitative question to assess students' overall takeaway from the career design micro-course. It is important to note that while the CSI is a quantitative measure, some qualitative data can also be gleaned from students' responses. More specifically, students are asked to list their top career choices, and the response is open-ended. Therefore, we can assess whether students' top career choices changed from the fall to the spring semester, and we can mine the data for trends in career choice goals across the student cohort.

Analysis

We treated students' scores as having equal intervals in the following analysis to make comparisons and run statistical tests. We ran paired t-tests on students' total CSI scores and the CSI certainty, satisfaction, and clarity sub-scores to test for significant changes in scores between fall and spring. A paired t-test is appropriate given our larger sample size.

Researcher Positionality

Both of this study's co-authors participated as instructors in the EF course. Dr. Anne McAlister is an engineering school faculty member who was hired to teach the first-year EF course. She was the primary instructor for four sections of the course in the fall semester and was on leave in the spring, so she did not teach a spring course. Dr. McAlister holds a bachelor's degree, a master's degree in engineering, and a Ph.D. in education. Dr. Julia Lapan has over twenty years of experience as a higher education administrator, primarily in college student career development, and has led the design and integration of the career design micro-course. Dr. Lapan has an Ed.D. in higher education and served as director of career development for UVA Engineering when this course was delivered.

Results

CSI Total Scores

On average, students' total CSI scores decreased in the spring compared to the fall, as did their sub-scores for certainty, satisfaction, and clarity (Table 2). Students' total CSI Scores were shown to decrease from an average of 6.69 in the fall to an average of 5.95 in the spring. Alpha was set at .05, which resulted in a significant difference using a paired t-test ($t(61) = 2.76$, $p = 0.008$).

A graph of the number of students who had each possible CSI score in the fall and spring demonstrates how the scores were not normally distributed, with peaks at scores of 4 and 7 for the spring and peaks at 5, 7 and 10 for the fall (Figure 1). The difference between spring and fall was calculated for each student, and these scores ranged from -6 to 4 (Figure 2). Close to half of the students' total CSI scores (48%, $n = 30$) decreased from the fall to the spring semester. The remaining students either had no change (26%, $n = 16$) or had increased scores (26%, $n = 16$). Further, the absolute value of the change in scores was larger for the students whose scores decreased than for those whose scores increased. Only two students had total scores that increased by more than two points.

Table 2. *Average CSI Scores*

	M			*Paired t-test*		
	Fall Score	Spring Score	Difference	*df*	*t*(61)	*p*
Total CSI	6.69	5.95	-0.74	61	2.76	0.008*
Certainty	2.34	2.24	-0.10	61	1.10	0.277
Satisfaction	2.58	2.42	-0.16	61	1.18	0.242
Clarity	1.77	1.29	-0.48	61	3.73	<0.001*

*$p < .05$

Figure 1. *Total CSI Scores in Fall and Spring*

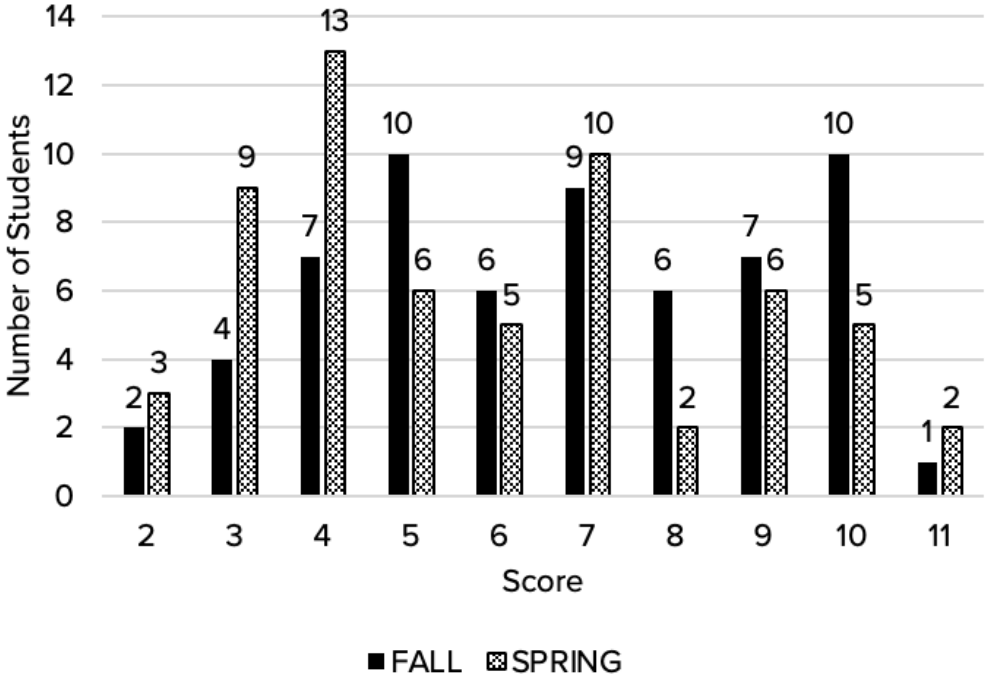


Figure 2. *Total CSI Score Differences Between Spring and Fall*

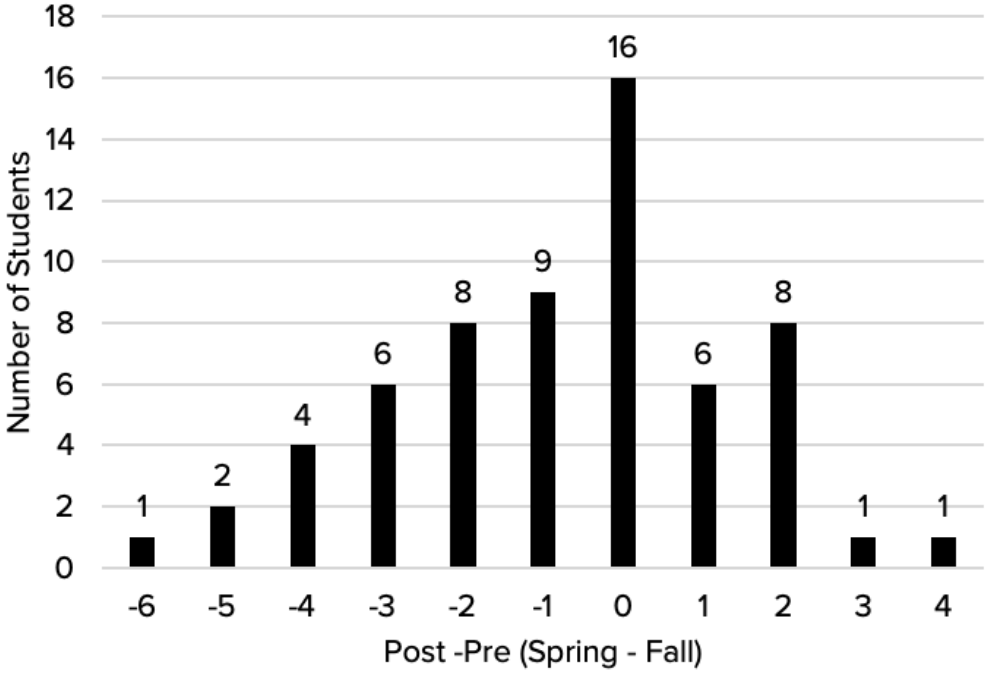


Table 3. *Average Total CSI Scores*

Change in Total CSI Score	Average Fall Score	Average Spring Score
Decreased	7.6	5.1
Stayed the same	5.9	5.9
Increased	5.8	7.6

When we examine these three groups of students (decreased, stayed the same, and increased) more closely (see Table 3), we note that the average fall semester score for students whose total scores decreased was higher (M = 7.6) than the average fall scores of students whose scores stayed the same (M = 5.9) or increased (M = 5.8). Then the average spring semester score for students whose total scores decreased was lower (M = 5.1) than the average spring scores of students whose scores stayed the same (M = 5.9) or increased (M = 7.6).

In summary, students' total CSI scores and subscores for certainty, satisfaction, and clarity decreased on average in the spring compared to the fall, which was expected as students gained clarity and confidence in their career decisions throughout their first year. While close to half (48%, n = 30) of the students had total CSI scores that decreased, the other 52% (n = 32) had scores that stayed the same or increased from the fall to the spring semester, and these students generally started with lower average scores in the fall. While shifts in certainty and satisfaction subscores were not statistically significant, the shift in the average score on the clarity dimension was significant, indicating an overall movement toward increased career clarity. Sub-scores for certainty, satisfaction, and clarity generally followed the same pattern of increasing, decreasing, or staying the same as the total CSI scores.

Course Takeaways

In the post-course survey, we asked, "What is a key takeaway from the career design sessions?" Students' responses ranged from acknowledging that they have many career options, becoming aware of career resources, or citing a connection between their values and career choices. Some students expressed neutral or even negative comments about the usefulness of the career course. We found similar responses for students depending on whether their total CSI score decreased, increased, or stayed the same. Students whose scores increased or stayed the same expressed more negative feelings about the career design sessions, saying things like, "they haven't been very helpful," "they seem kind of useless," and "they were kind of a waste of time." Students with increasing scores also expressed more stress about career decisions, saying, "it is still very stressful and worrisome," and "it sounds very stressful." Students whose scores stayed the same often cited the importance of centering their values in their career decisions as a key takeaway from the course, saying things like, "[I] listen to my values and not the expectations I feel of me" and "the choice ultimately comes from me and should be decided on my personal values and beliefs."

In contrast, students whose total CSI scores decreased more frequently expressed that the career design sessions exposed them to "new opportunities" and that "it is okay to bounce around." Additionally, they said things like, "there are lots of resources at the engineering career center," "UVA has a lot of career resources that are available to students," and "I have resources to go to when I feel lost about my future career." These statements indicate that students whose scores decreased became aware of resources related to career design and felt supported in their career design path.

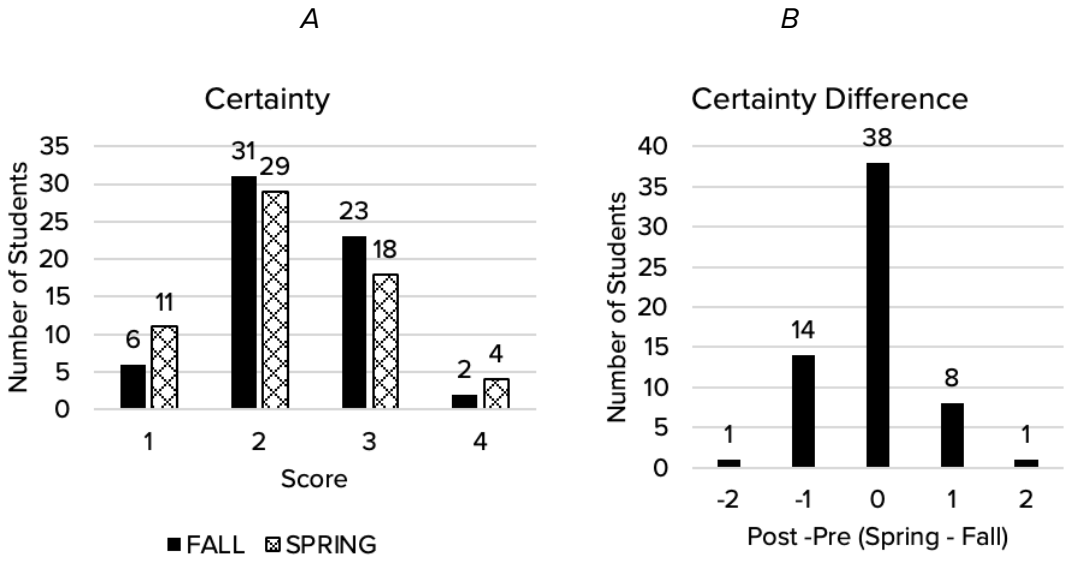
Occupational Alternatives

We notice another trend when we look at students' reported first-choice occupation in the fall vs. spring. Students whose total CSI scores decreased mostly reported the same first choice occupation from fall to spring (*n* = 19, 63%) or became more specific in their choice (*n* = 8, 27%; e.g., undecided in the fall, environmental engineer in the spring). None of the students whose total CSI score decreased became undecided (e.g., biomedical engineer in the fall, undecided in the spring). In contrast, choice goals for four students (25%) whose total scores increased became undecided, nine (56%) remained the same (or remained undecided), and only two (13%) became more specific. For students whose total scores stayed the same, most (*n* = 10, 63%) reported the same first choice occupation in the spring; three students (19%) changed their first choice occupation, and two students (13%) became more specific. One student from this group (6%) became undecided.

CSI Sub Scores: Certainty, Satisfaction, and Clarity

Students' average sub-scores for certainty, satisfaction, and clarity decreased from fall to spring. This difference in clarity scores was significant at the alpha < 0.05 level, while the differences for certainty and satisfaction were not significant (Table 2). Taking a closer look at students' certainty scores, our graphs (Figure 3) show that most students (*n*=38, 61%) did not change in certainty between fall and spring, and more students had a decreasing certainty score (*n* = 15, 24%) than an increasing certainty score (*n* = 9, 15%).

Figure 3. *Certainty Scores (A) and Differences in Certainty Scores (B)*



Students' satisfaction scores followed a similar trend to the certainty score (Figure 4), with most scores around 2 or 3. Again, many students (*n* = 25, 40%) did not change in satisfaction between fall and spring, and more students had a decreasing satisfaction score (*n* = 22, 35%) than an increasing satisfaction score (*n* = 15, 24%).

Students' clarity scores were distributed such that the highest and lowest possible scores were most common (Figure 5), leading to a bimodal distribution. Again, however, most students (*n* = 36, 58%) did not change in clarity between fall and spring, and more students had a decreasing clarity score (*n* = 22, 35%) than an increasing clarity score (*n* = 4, 6%).

Figure 4. *Satisfaction Scores (A) and Differences in Satisfaction Scores (B)*

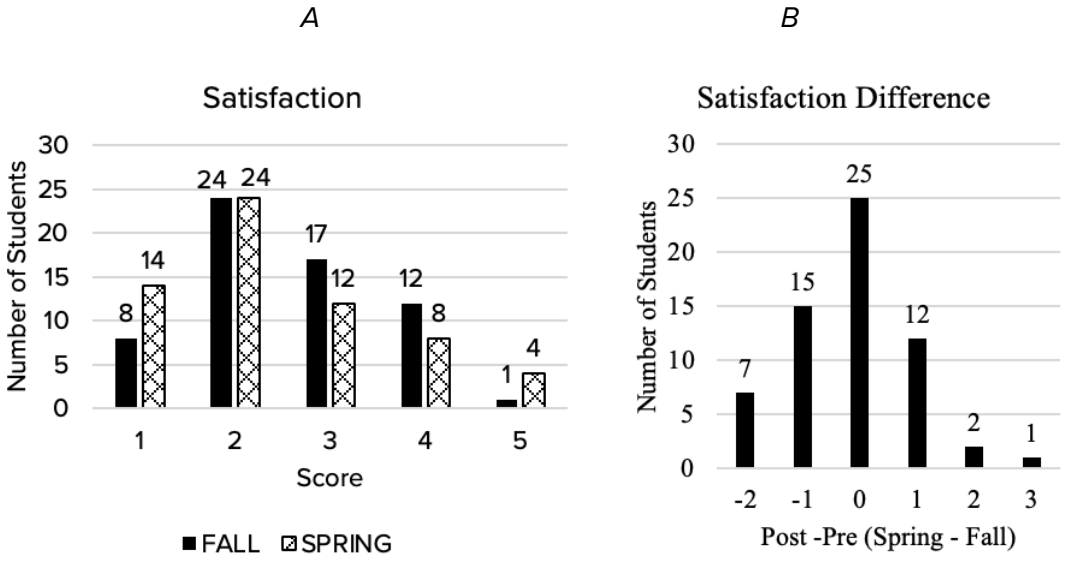
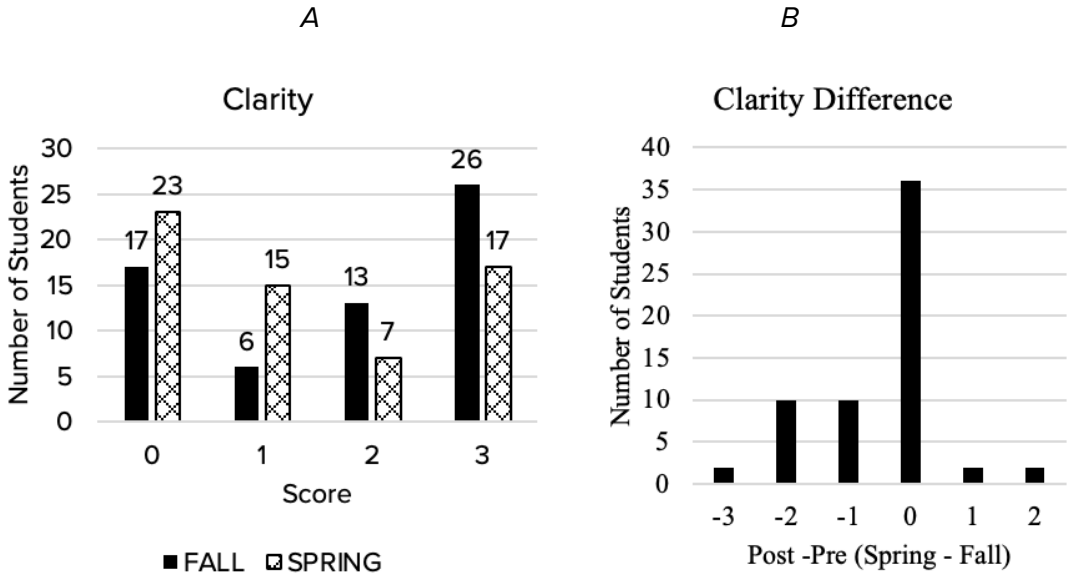
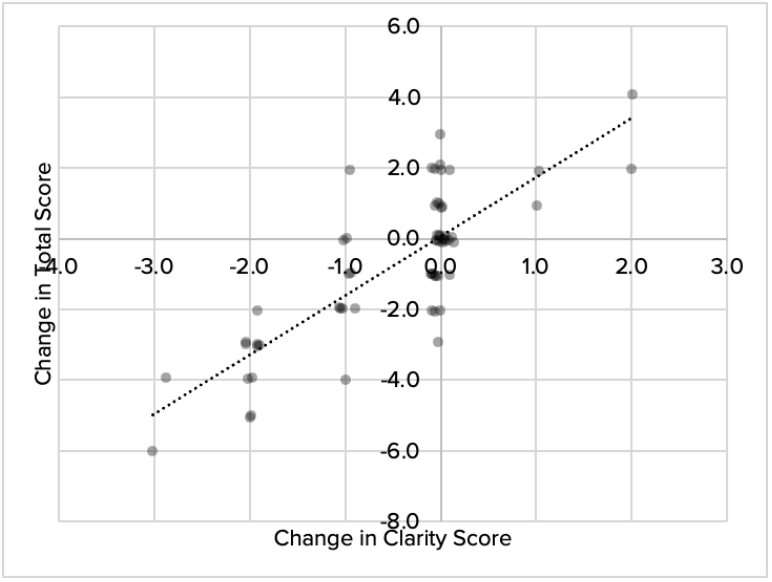


Figure 5. *Clarity Scores (A) and Differences in Clarity Scores (B)*



For all but three students whose clarity score decreased, their total score also decreased. There was a significant correlation between change in clarity and change in total score ($F(1,60) = 102.60$, $p < 0.001$; Figure 6).

Figure 6. *Change in Clarity by Change in Total Score*



Discussion

The scores on the CSI and the qualitative responses from the students begin to paint a picture of how students' career decision states changed from the beginning to the end of the first-year career design course. Overall, the average CSI scores decreased slightly, from 6.69 in the fall to 5.95 in the spring, a movement we would have expected to see after a career intervention. The decrease reflects an overall movement of the students' career decision state away from one that is uncertain, doubtful, and tentative, toward one that is goal-directed, satisfied, and confident. In looking more closely at the distribution of scores, however, we observed that students fell into one of three categories: those whose overall scores decreased, those whose overall scores increased, and those whose overall scores remained unchanged. We will discuss each of these in more detail.

Total Career Decision State

The largest group of students (48%, $n = 30$) had total CSI scores decrease from the fall to the spring semester, indicating they became more confident in their career plans. As stated previously, it is reasonable to expect their scores to decrease during their first year in college, perhaps due to the career design course, but also because of other experiences during their first year in college. For example, attending a university career fair or major selection night, talking with faculty and peers, or meeting with a career advisor may all have impacted their career decision state in bringing more clarity to their career goals. It should be noted that the students in this first (overall score decrease) group started with a higher total CSI score (7.6) to begin with than the other two groups (5.9 for the students whose scores remained the same, and 5.8 for students whose scores increased). Based on

these data, we can infer that the students whose total scores decreased entered college feeling less sure about their career goals than the other two groups.

The second group of students (26%, *n* = 16) saw an increase in their overall CSI score from the fall to the spring semester. While movement in this direction initially felt counter to our goal of supporting students' career success, this increase in total CSI score may be a positive change for some students. This group of students' fall scores were lower than the first group of students to begin with, indicating that they entered college feeling more confident and certain in their career goals than the other two groups. While we ultimately desire students to reach a state of career readiness, too much "readiness" early on can limit students' potential and stymie exploration around their curiosities. This phenomenon has been referred to as occupational foreclosure, in which students focus only on one career goal to the exclusion of all others (Shaffer & Zalewski, 2011). Thus, students who may have entered college foreclosed about their career options might have expanded their perspectives during their first year. As Christianson (2021) found, students in a life sciences career course at Arizona State University reported an increased awareness of career options. While we did not have a chance to interview students about their response to the career design course, we theorize that students became more aware of their career options through the course, but perhaps did not yet have time to explore their options. This realization that there are more options than they have had a chance to explore could feel unsettling for some students.

The third group of students (26%, *n* = 16) had total CSI scores that remained unchanged from the fall to the spring semester. The average score of this group was 5.9. This indicates that students' career decision states started and ended toward the middle of the CSI scale, in a state of being uncertain, having doubts, and feeling tentative about their careers, but far from being frozen, dissatisfied, and confused (represented at the high end of the scale).

CSI Component Scores

For the entire cohort of students, the clarity dimension was the only component score that showed a significant change. The clarity dimension measures vocational clarity, which Leierer et al. (2025) define as "an indicator of one's vocational self-confidence in pursuing the challenging task of career decision-making" (p. 6). In the case of our student sample, the average clarity score decreased from 1.77 in the fall to 1.29 in the spring (on a scale of 0 to 3), with most students reporting no change in career clarity. The clarity component appears to have driven the overall decrease in total CSI scores. It could indicate that through the first year of college, students, on average, gained vocational clarity and confidence in their career decision-making. This change is a desired outcome of any career intervention, even in the first year of college, as despite having multiple possible career paths and being undecided about which path to choose, having more confidence and clarity in their ability to make a career decision can be a positive state from which students can explore and design their careers.

While students' scores on the two other sub-scales (certainty and satisfaction) did not change significantly, it may be that those dimensions will change over time, as students

progress through college and explore their career options through experiences such as internships and interactions with professionals (alumni and employers) and their peers.

Limitations

This study has several limitations. First, our sample size was much smaller than we had originally anticipated. We experienced some challenges in getting the overall course survey approved by our institutional review board. Thus, we had to seek retroactive consent from participants to be included in the study. As this was the first year of delivering the EF course, with many newly hired instructors and a career advising team completely new to teaching career design, we were learning by doing. We therefore had to remain flexible to student demands while attempting to maintain continuity across 20 course sections. Dr. Lapan piloted the career design modules in various forms for several years prior to integrating with EF. However, the integration itself posed several administrative challenges, such as advisors gaining access to Canvas (teaching) sites, scheduling the career design modules to fit instructors' teaching schedules, and reviewing student assignments on a large scale.

Other limitations include that we assessed student development over a limited amount of time (i.e., their first year in college) and used a non-experimental design. Therefore, we cannot confidently attribute changes in the CSI score to the career design micro-course. As alluded to previously, changes in students' career decision state may have been caused by factors unrelated to the career design course. To understand how the career design micro-course impacts students over time, tracking students' CSI scores along with other quantitative and qualitative measures through their remaining college years will be useful. For example, we could interview students about their learning in the career design micro-course. However, it would be unlikely that students could articulate the impact until closer to graduation, or maybe even after graduation. It will be important to develop other methods to assess the impact of this career intervention.

In addition, the CSI instrument itself is relatively new to research and practice. The "certainty" dimension is subjective in that researchers must make decisions about how to score open-ended responses. The fourth edition of the CSI manual (Leierer et al., 2025) offers detailed instructions on scoring procedures. However, in some cases, researchers must make a decision that could affect the quantitative results. In the case of our study, both researchers discussed any gray areas and made a joint decision about the final score to increase our study's trustworthiness.

Implications for Research and Practice

While the CSI is not a perfect tool for assessing a career intervention such as the one we implemented, we found it useful to see how students' career decision states shifted across their first year in college. The fact that the clarity component seemed to be the most malleable suggests that to support first-year students' career development, focusing on helping students clarify their career goals might have the biggest return on our investment. Further research could explore how the other CSI component measures (certainty and satisfaction) might shift as students progress through college.

Our research also suggests that students arrive at college at varying states of career readiness. Going forward, we might investigate designing different interventions for students depending on where they are in their career decision state. For example, for students who begin college with a strong sense of what they want to do (occupational certainty), we could help them see that there is not one "right" path and encourage them to explore a variety of options. This tactic is supported by engineering educators who aim to dismantle systems of domination in engineering by helping students reimagine engineering work as it aligns with their values (Koh & Rossman, 2021). On a more practical level, helping engineering students design alternative career plans can help them develop the "learner" mindset they need to adapt to a rapidly changing career landscape (Chakrabarti et al., 2021). Conversely, for the students who arrive at college feeling frozen or confused about their career choices, we can help them gain clarity around their curiosities, values, and strengths, and empower them to develop career goals based on those insights.

Conclusion

Overall, the career design micro-course was a positive experience for students and instructors. By the end of their first year in college, every engineering student experienced in-person time with the school's career development professionals. All students created a resume; all conducted an informational interview; all reflected on their work and life values; and all were introduced to resources to begin prototyping and testing their career interests. These outcomes mark a dramatic improvement from what students had previously experienced in their first year with regard to career development. Anecdotally, our career advising team has had meaningful career conversations with students, now in their second year, and it is clear from those conversations that they have begun to think about their career in ways we had not seen from second years previously. Additionally, some faculty have remarked that students applying for research positions in their labs seem better prepared (such as already having a resume).

Another benefit of this course is that it has opened the door for students, faculty, and administrators to begin having career conversations early in college. Since the EF faculty also serve as first-year students' academic advisors, career conversations can more readily occur in the context of academic advising. Furthermore, by engaging directly with students, the career development team has gathered new insights that have informed career programming outside the course. For example, when "concern for the environment" emerged as a top value for students, the career team launched an Environmental Pathways initiative highlighting resources and opportunities for students to engage in careers related to environmental sustainability. Going forward, our challenge will be scaffolding students' career development in years two through four. While the career team's staff size and resources present a challenge in our capacity to accomplish this, we are confident that by working with our academic partners, we will find a way to continue to offer career education at scale, helping students to not only secure employment, but to design lives and careers with meaning and purpose.

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Empowering Employability

Enhancing Career Search Self-Efficacy Through a Required Professional Development Course

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Abstract: Career search self-efficacy (CSSE) is pivotal for undergraduate business students' career readiness and employment prospects. This article examines the impact of a required career development course at a business school in the eastern U.S., highlighting CSSE improvements among a diverse student cohort in a resource-limited setting. Using the Career Search Efficacy Scale (CSES), the study measures skills in networking, job-searching, personal exploration, and interviewing. Findings from over 800 students across three years demonstrate enhanced CSSE, affirming the course's success. The article offers a scalable strategy for ensuring equitable access to career development, fostering competencies that lead to positive career outcomes for diverse students.

Keywords: career self-efficacy, career exploration, professional development, career readiness, Career Search Efficacy Scale (CSES), experiential learning, higher education

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The number of undergraduates enrolled in postsecondary education has decreased by 13% between 2012 and 2022 (Irwin et al., 2024). COVID-19 contributed to the decline toward the end of this time period. Some of the decline is due to demographic trends resulting in fewer college-bound high school graduates. Some of these declines, however, may be attributed to a national debate over the return on investment for higher education (Edge Research & HCM Strategists, 2024). While college access has grown, so has the time to degree and the number of students who leave college without completing a degree (Wheatle et al., 2017). Estimates suggest that 35 million Americans have completed some college but do not have a degree. On average, those who complete a bachelor's degree earn 84% more than high school graduates – $2.8 million over a 40-year career (Carnevale et al., 2011). Not only do college degree completers reap more economic rewards for themselves and their families, but they also contribute more to their communities, both financially and socially. Citizens who complete a college degree earn more, pay more taxes, are more likely to be employed, have positive social mobility, use less public assistance, are healthier, are more active citizens, and are more involved

parents (Ma & Pender, 2023). Though college costs have risen dramatically over the last 25 years, supporters argue that the economic benefits of completing a bachelor's degree have kept pace (Hout, 2012). Given this debate, colleges and universities increasingly emphasize their graduates' employability (Qenani et al., 2014).

One approach to increasing graduates' employability is to embed skill development related to career self-efficacy within the curriculum (Knight & Yorke, 2003; Moon, 2004; Quality Assurance Agency, 2009; Yorke & Knight, 2006). Career decision-making self-efficacy is a significant predictor of vocation indecision in college students (Betz & Hackett, 1981; Hackett & Betz, 1981; Solberg et al., 1994; Taylor & Popma, 1990). Self-efficacy is defined as an individual's belief in their ability to produce given attainments (Bandura, 1997), and in doing so, guides human behavior. What people expect from themselves leads to whether and what coping behaviors they initiate, how much effort they exert, and how long they persist (Bandura, 1977). When people persist in behaviors that feel threatening but are actually safe, self-efficacy increases through the experiences of mastering that behavior. For example, to many college students, the idea of asking a stranger to share their career journey is frightening. When required to do this as a course assignment, most students have a positive experience, encountering helpful professionals who share valuable advice. Additionally, research has shown that a lack of confidence in decision-making skills, clarity in personal identity, immediacy for decision-making, and external barriers to choices result in career indecision in college students (Taylor & Betz, 1983). Students with increased self-efficacy make better career decisions post-graduation, thereby suggesting that building self-efficacy directly influences postgraduate success (Lees, 2002; Qenani et al., 2014).

This article contributes to the ongoing discourse surrounding the assessment of career preparation and post-graduate outcomes by examining two key research questions. First, does a required career and professional development course implemented at a business school in an urban-serving institution in the eastern United States increase students' career search self-efficacy (CSSE)? Second, is there variation in changes to CSSE across terms, instructors, or modality? This research underscores the importance of CSSE in facilitating successful transitions from academia to the job market, particularly among a diverse undergraduate business student population. By employing an empirical approach grounded in established theoretical frameworks, the study illuminates how the course effectively enhances CSSE among a demographically diverse student cohort. This course is a tangible, easily adaptable strategy to bolster CSSE within diverse student populations. This scalability is paramount in addressing systemic inequities in access to career development resources, thereby amplifying opportunities for all students to develop essential competencies that lead to improved career outcomes.

This study utilizes the validated Career Search Efficacy Scale (CSES) to measure CSSE across multiple dimensions. The CSES provides a robust framework for assessing the impact of the intervention. Through a comprehensive analysis spanning three academic years and involving a substantial cohort of over 800 students, the findings corroborate the course's effectiveness and provide actionable insights for quality improvement efforts in career preparation initiatives across diverse higher education settings. Additional findings

offer a compelling argument for requiring career and professional development courses as a scalable means to improve CSSE and ultimately enhance career outcomes for undergraduate students.

Theoretical Frameworks

Self-Efficacy in Higher Education Students

Bandura's Social Cognitive Theory (SCT; Bandura, 1977, 1997) is often used to describe students' learning and motivational processes in higher education. Bandura (1977, 1997) proposed that reciprocal interactions between an individual's behaviors, internal personal factors such as thoughts and beliefs, and environments combine to affect human learning and functioning. Social cognitive theorists believe that a central component of human learning is an individual's capacity for self-reflection through self-referential thought, which the person uses to evaluate and modify their thoughts and behaviors (Bandura, 1997). Self-efficacy beliefs are an example of self-referential thought that affects motivation and behavior. In higher education, self-efficacy beliefs influence behaviors that contribute to student success by affecting student motivation, effort, and task approach (Schunk, 1995). Self-efficacy beliefs of competence lead to proactive behaviors, increased confidence, and a sense of tranquility when facing challenges. In contrast, self-efficacy beliefs of incompetence tend to produce avoidant or anxious reactions to the task.

Self-efficacy belief development occurs when an individual perceives and interprets one or more of the following sources of self-efficacy: *mastery experiences*, an individual's interpretations of past actions and experiences (Bandura, 1997; Chen & Usher, 2015; Usher & Pajares, 2008); *social persuasion*, verbal, non-verbal, written, or other forms of communicated judgments from others (Bandura, 1997; Britner & Pajares, 2006); *vicarious experience* (or modeling), *learning by observing others* (Bandura, 1997); and *physiological* or *affective state*, or feelings and moods such as pain, exhaustion, stress, anxiety, calm, or adrenaline (Bandura, 1997; Chen & Usher, 2015).

According to Bandura (1997), the internalization of sources of self-efficacy is "not inherently enlightening. It becomes instructive…through cognitive processing…and through reflective thought" (p. 79). Bandura (1997) stated that the internalization of sources of self-efficacy is regulated by an individual's specific attentional processes, including the judgment of informational worth and the usefulness of information, as well as the heuristics or rules used to weigh and integrate that information.

Higher education settings, such as classrooms, internships, and advising spaces, provide students with opportunities to engage in experiences that foster self-efficacy. Various classroom and instructional interventions have been shown to contribute to the development of student self-efficacy (Dinther et al., 2011), including having dependable and supportive teachers (Ayllon et al., 2019) and targeted assignments such as interviewing, in-class skill building, engagement with guest speakers, technological training, and peer-to-peer mentoring. Students may, for example, encounter mastery experiences through exams, projects, experiential learning, skills application, or successes in the field. Instructors, classmates, supervisors, and clients may provide verbal persuasion. Students

can observe other students, their past performance, or that of experts in the field to gain modeling experiences for desired behaviors and competencies (Dinther et al., 2011).

Experiential Learning Theory

As a pedagogical framework to enhance opportunities for self-efficacy development, instructors in higher education settings may utilize experiential learning pedagogy. Experiential learning pedagogy can improve classroom engagement (Kong, 2021) and achieve learning and efficacy goals. Experiential learning theory (Kolb, 1984) describes a process by which students obtain critical thinking skills through experiencing, thinking, reflecting, and acting during their studies, as supported by their course curriculum and assignments. The resultant learning is lasting and transformative. Experiential learning as a pedagogical approach has been effectively applied in entrepreneurial contexts (Gonzalez-Perez et al., 2019; Motta & Galina, 2023) and is a key component of the professional development course analyzed in this manuscript. The course curriculum applies the four stages of experiential learning proposed by Kolb (1984): concrete experience, reflective observation, abstract conceptualization, and planning active experimentation via the course structure and featured assignments. Experiential learning shares many aspects of sources of self-efficacy, such as opportunities for mastery experiences and peer learning. Experiential learning contributes significantly to the development of self-efficacy, including in entrepreneurial contexts (Taneja et al., 2023), where coursework is designed to provide students opportunities to practice and enhance course-related skills and competencies. Although self-efficacy related to the skills required for competency in a specific profession has often been the focus of interventions, researchers have also investigated the effectiveness of enhancing self-efficacy beliefs in career decision-making.

Career Search Self-Efficacy

CSSE can be broadly explained as an individual's beliefs about their ability to successfully perform tasks related to career exploration and decision-making (Solberg et al., 1994). Measures of CSSE identify respondent conditions and behaviors such as self-esteem, vocational identity, peer support, vocational outcome expectations, career indecision variables, job searching, networking, interviewing, understanding self and occupations, goal setting, and planning (Choi et al., 2012). Improving CSSE through structured interventions helps with vocational choice, increases willingness to consider careers not previously considered (Rotberg et al., 1987), and boosts confidence in career decision-making (Taylor & Bentz, 1983). As the role of higher education has shifted to prioritizing job readiness and efficacy, an intentional approach to supporting efficacy development in job candidates is necessary. Educators in a position to determine the resources and methods of preparing students for job success must have evidence to support best practices in student preparation and efficacy development.

Methodology

Overview of the Career and Professional Development Course

In Fall 2021, an urban-serving institution in the eastern United States launched a required career and professional development course for undergraduate business students. The

course was created when the faculty identified a need for a career and professional development course as part of a curriculum redesign, which resulted in it becoming a required course for all undergraduate business students. By providing access to all students, it aimed at increasing self-efficacy through practicing certain career skills that have been demonstrated to lead to beneficial professional outcomes. Some of these skills include clarifying personal identity, exploring external options, and practicing career decision-making.

Students must have sophomore standing to enroll in this course, and typically take it as second- or third-year students. This institution supports a diverse student body. It is identified as a Minority Serving Institution (MSI). On average, about one-third of undergraduate business students are the first in their family to attend college. About one-third are Pell-eligible. Fifty-four percent identify as men and 46% as women. Thirty-three percent identify as White, 27% as Black/African American, 16% as Asian, 12% as Hispanic/Latino, and 7% as two or more races.

Since the COVID-19 pandemic required a shift from in-person to virtual instruction, many universities, including this institution, began exploring alternative course modalities to promote access, equity, and flexibility (Larson et al., 2023). Because this course was first offered during the COVID-19 pandemic shutdowns, it has been taught in multiple modalities, including asynchronous online, synchronous online, hybrid (a mix of asynchronous and synchronous online with in-person components), and fully in-person. It has been taught as a full-term and minimester course (three and five-week iterations). The modality was determined based on program needs, university policies, and student demand. The course is taught by a team of instructors, some of whom work in the career center and others with professional qualifications that prepare them to teach this content. Sections have between 30 and 50 students. Despite the differences in delivery, the assignments are consistent across modalities and instructors (Table 1).

Career Search Efficacy Scale

Students complete the CSES at the beginning and end of the course. Students receive course points for completing the CSES but not for their specific answers to the items. The CSES is oriented toward specific job search activities, such as job searching, networking, and interviewing, making it a good choice for measuring career self-efficacy in this course. This instrument has been scientifically validated and has strong reliability (Gore et al., 2005; Solberg et al., 1994). The CSES measure includes four subscales: networking efficacy, job-search efficacy, personal exploration efficacy, and interview efficacy. It has been used in previous studies of CSSE, where the CSES scores significantly and positively predicted STEM majors' persistence in their degree (Cabell, 2021). While the course designers intentionally built the CSES measures into the course, the curriculum was created to meet student needs identified by the faculty rather than to be directly reflective of items on the CSES instrument.

Analysis Plan

To address the first research question - does this required career and professional development course implemented at a business school at an urban-serving institution in

Table 1. *Career and Professional Development Course Assignments*

Assignment title	Description
Pre-test: CSES	Students complete the CSES before class begins.
Pre-test: CSES	Students complete the CSES before class begins.
Business etiquette	A LinkedIn Learning course discusses proper phone, email, and text communication for business professionals.
Elevator pitch	Students video record their 60-90 second elevator pitch that they practice in class.
Career and internship fair	Students are required to visit the Career & Internship fair, where they can practice their elevator pitch and explore opportunities.
Resume	Students receive feedback on their resume from both an AI-powered tool and their instructors.
Self-assessment & career reflection	Students take a self-assessment that measures their interests, motivators, personality, and workplace preferences. The assessment then suggests careers that may be a good fit. Students pick one of those careers to which they will complete additional research and reflection.
Career coaching meeting	Students are required to meet with a career coach in the career center at least once during the term.
Business communications	Students draft emails 1) requesting a meeting for a career conversation and 2) thanking the recipient for a meeting or interview.
Interview	Students use an AI-powered tool that gives feedback on their virtual interviews, as do their instructors.
Gap analysis	Students select two opportunities that interest them and analyze 1) which required skills they possess and how they can demonstrate those, and 2) which skills they still need to gain and how they might acquire those to become stronger candidates.
Upskill with LinkedIn	Students select a skill they want to improve from their gap analysis and complete a LinkedIn Learning course focused on closing that skill gap.
LinkedIn	Students use an AI-powered tool that gives feedback on their LinkedIn profiles, as do their instructors.
Career Conversation Reflection	Students interview a professional in a career field of interest and write a reflection on what they learned, specifically emphasizing how that will inform their future career plans and next steps.
Post-test: CSES	Students complete the CSES after class ends.

the eastern United States increase students' CSSE? - a pretest-posttest design was used to explore nine terms of student self-efficacy data. Students completed the CSES as a class assignment at the beginning of the one-credit course. After receiving targeted instructional content and activities designed to enhance career search skills, students completed the CSES again as a post-test to evaluate changes in self-efficacy. On the post-test CSES Google Form, the explanation of the study and informed consent is outlined. Students were invited to participate in this study by selecting "I CONSENT to participate." Paired samples t-tests were used to determine the statistical significance and effect sizes of any observed changes. For the second research question - is there variation in changes to CSSE across terms, instructors, or modalities? - a one-way ANCOVA was used to explore differences between terms, modalities, and instructors, accounting for differences in pre-test scores between groups.

Results

Eight-hundred and forty-three student responses over nine terms and three academic years were used in the analysis of both research questions. Data collection began in the 2021-2022 academic year, with 155 students across the fall, spring, and summer terms. It expanded to 229 students in the 2022-2023 academic year and 390 students in the 2023-2024 academic year. The majority of students completed the course through hybrid instruction (357) or asynchronous instruction (301), while some completed it face-to-face during a typical term (55) or a shortened term (123). Eight students completed the course through virtual synchronous instruction. Students were provided instruction by eight different instructors, with the majority receiving instruction from three instructors (566).

Research Question 1

Paired samples *t*-tests were used to determine if students raised their CSES scores from pre-test to post-test, showing increases in career self-efficacy. The CSES mean scores for the pre-test (M = 6.29, SD = 1.31) were significantly lower than the post-test scores (M = 7.86, SD = 0.85, $t(843) = 37.86$, $p < .001$, Cohen's d = 1.21). These results show that students' CSES scores significantly increased with a very large effect size after completing the career and professional development course. Additional paired samples t-tests were used to explore differences between the pre-test and post-test for the four subscales and individual survey questions of the CSES. All four subscales — networking efficacy, job-search efficacy, personal exploration efficacy, and interviewing efficacy — as well as all individual survey items, were significant with large effect sizes. Table 2 shows the results of the paired samples t-tests for the overall mean scores and subscale scores, and Appendix A shows the results of the paired samples t-tests of the individual survey questions.

Research Question 2

To explore differences between terms, modalities, and instructors on the survey results, a one-way analysis of covariance (ANCOVA) was employed. Similar to an ANOVA, an ANCOVA explores the relationship between different variables while also controlling for factors that may influence their relationship. In this case, the ANCOVA controlled for differences in the pre-test results among different class sections. There was no significant difference in CSES post-test scores in different terms ($F(8, 843) = 1.64$, $p = 0.11$, $\eta p^2 = 0.015$),

Table 2. *Subscale Changes in Student Self-efficacy from Pre-test to Post-test*

Subscale	Pre-test		Post-test		*t*(843)	Cohen's *d*
	M	*SD*	*M*	*SD*		
Overall Mean	6.29	1.31	7.86	0.85	37.86*	1.21
Networking Efficacy	5.99	1.52	7.78	0.96	36.26*	1.44
Job-Search Efficacy	6.47	1.33	7.90	0.86	33.52*	1.23
Personal Exploration Efficacy	6.63	1.37	8.00	0.88	31.14*	1.28
Interviewing Efficacy	6.01	1.47	7.80	0.91	36.67*	1.37

* $p < .001$

different class modalities ($F(4, 838) = 0.68$, $p = 0.61$, $\eta p^2 = 0.003$), or different instructors ($F(7, 835) = 1.10$, $p = 0.36$, $\eta p^2 = 0.009$), after controlling for pre-test differences. The results were consistent across terms, class modality, and instructor.

Discussion

Interpretation of Findings

By providing experiential learning opportunities grounded in social cognitive theory, the career and professional development course offers students opportunities to engage in career exploration and practice career skills, resulting in consistent increases in career self-efficacy across different terms, modalities, and instructors. Specifically, the researchers investigated whether this required career and professional development course increased students' CSSE. Results from the CSES showed significant increases in student self-efficacy across personal exploration, interviewing, job-search, and networking efficacies with very high effect sizes. This is consistent with the literature, which indicates that higher education interventions can successfully increase student self-efficacy (Dinther et al., 2011). Initial research by Bandura (1977, 1997) on self-efficacy development, as well as subsequent studies on self-efficacy development in educational contexts, suggests that mastery experiences, vicarious experiences, and social persuasion have a significant impact on self-efficacy beliefs. The significant results of the pre- and post-tests of the CSES indicate that the assignments and evaluations included in the professional development course curriculum effectively and intentionally provided opportunities for developing self-efficacy beliefs.

Mastery experiences, such as business etiquette, elevator pitch, and business communications assignments, allow for the express development of entrepreneurial skills, which in turn improve self-efficacy and entrepreneurial intention (Abuzaid, 2023). Students in this class observed others exhibiting desired career behaviors during assignments, such as the career and internship fair, career conversations, and guest lectures. They were provided the opportunity to compare to an idealized or future self during the gap analysis, which is in line with research that indicates growth mindset interventions such as self-assessments increase self-efficacy beliefs in learning (Burnette et al., 2020), and observing peer performance improved skill implementation (Livsey & Lavender-Stott, 2015).

Students received social persuasion in the form of peer and instructor feedback on their resumes, elevator pitches, and practice interviews throughout the course. Increases in CSSE in the studied sample are also in line with findings from Wang et al. (2023) that demonstrated the potential of using artificial intelligence to enhance the learning process through self-efficacy development.

Many of the assignments and activities completed during the professional development course addressed multiple sources of self-efficacy. For example, the career coaching session and interview provided an opportunity for practicing job skills, self-assessment, and accepting feedback. Assessments during the course provided students with opportunities to identify mastery experiences and receive feedback on their abilities from the instructor (Beatson et al., 2018). In summary, the professional development course affected students' development of self-efficacy related to career search processes by integrating multiple opportunities for students to engage with evidence of their competency.

Policy and Practice Implications

One of this study's most significant policy implications is the replicability of this career and professional development course model for other institutions in similarly resource-constrained environments. Researchers explored the question of variation in CSSE across terms, instructors, or modalities. Seeing no significant differences, we hypothesize that students' growth in CSSE is connected to the highly experiential assignments rather than the term, modality, and instructor. This intervention demonstrates that meaningful improvements in CSSE can be achieved without extensive financial resources and in a way that delivers the content consistently for a large and diverse student population across different course modalities, at different times of the year, and by different instructors. These findings align with other studies on the transferability of EL courses across contexts (Tchoukaleyska et al., 2021). Institutions seeking to foster equitable methods for enhancing their students' CSSE and, thereby, their employability can adapt this model to their unique student populations and operational contexts. This replicability offers a pathway to more equitable career outcomes for institutions that strive to support underrepresented students. It is a valuable and low-cost strategy for improving postgraduate student success in the workforce.

By using standardized instruments like the CSES, practitioners can consistently track progress and outcomes, ensuring that their course's impact on student career readiness is measurable and scalable. The CSES measure consists of 35 items, divided into four subscales: networking efficacy, job-search efficacy, personal exploration efficacy, and interview efficacy. The scale was specifically designed to measure college students' career search efficacy, and no special training is required for those who administer it (Hanin, 1994). Therefore, it is uniquely suited as an assessment instrument in the context of a college career and professional development course taught by a range of instructors.

Over a dozen instructors delivered different sections of this course. This course was taught in various modalities: fully online (synchronous and asynchronous), hybrid, and in-person. It was also adapted to different length terms, ranging from three weeks to 15 weeks.

However, the assignments remained consistent, with small adjustments each term to increase course efficacy based on student and instructor feedback. Regardless of the delivery method, each instructor used the same syllabus, assignments, and point distribution. The nature of these assignments points to the importance of integrating experiential learning methods, rather than relying solely on traditional lecture-based "banking information" approaches, to foster consistent improvements in CSSE (Freire, 2017; Kolb, 1984). Experiential learning—through activities such as self-assessment, peer reviews, gap analyses, and practice interviews—allows students to apply theoretical knowledge to their career development journey, enhancing their confidence in navigating the job market. By actively engaging students in career-related tasks, these methods empower them to internalize skills and build a sense of mastery, which is a key determinant of self-efficacy (Qenani et al., 2014; Tschannen-Moran & McMaster, 2009; Wright et al., 2013). Unlike passive learning, which can result in surface-level retention of information, experiential approaches offer opportunities for reflection, feedback, and iterative learning, leading to more sustainable and meaningful improvements in students' career readiness. As a result, adopting these active learning techniques may be essential for educators seeking to create high-impact courses that equip students with the tools they need to succeed in their career journeys.

Limitations

Interpreting the study's results should consider the limitations of the study design, considerations for measuring self-efficacy, and variables across the treatment groups. The study was conducted at a large public urban university on the East Coast, which limits the generalizability of the findings to other institutional settings. The study utilized pre- and post-test assessment structures. Still, it did not include longitudinal data that would have more accurately represented the long-term effects of the class intervention or provided more data on career decision-making behaviors and outcomes. While differences in self-efficacy increases between terms were not significant, there was a large effect size, meaning, in some cases, increases in career self-efficacy may have been impacted by the term the course was taken and changes made to the course over time. Although researchers found no significant differences across instructors, it cannot be proven that there were no significant differences in certain instructor-level elements, such as instructor skill, availability, connection with students, or minor differences in pedagogical approach. These initial exploratory analyses did not disaggregate by variables such as student race, gender, and Pell eligibility, suggesting the need for further study to understand how CSSE develops across different student demographics.

Areas for Further Research

In light of the study results indicating that CSSE can be vastly improved through intentional classroom interventions, adding experientially based CSSE-focused coursework to existing accreditation standards for business program curricula may be warranted. Future studies conducted in alternative institutional environments, program specializations, and longitudinally across students' career development would improve understanding of how CSSE development occurs in higher education students. Another area for future research is disaggregating results by different demographic data to determine if results are

consistent across sociocultural contexts. As the scale did not differentiate between sources of self-efficacy as they contributed to the student's overall CSSE, adding a qualitative element that analyzes the interpretation of self-efficacy sources can better pinpoint the contributing factors to CSSE development. Because evidence suggests that instructor-level factors can affect self-efficacy development, future studies should include measures of pedagogical skill and interpersonal factors such as the availability of an instructor and rapport (Ayllon et al., 2019).

Conclusion

Given the changing nature of higher education and the barriers facing institutions, universities must take student-focused approaches to education that include intentional support around post-graduate outcomes. The results of this study indicate that required professional development courses can increase CSSE, potentially leading to improved occupational and entrepreneurial outcomes for students. Using this scalable and replicable framework, with embedded assessments to measure changes in CSSE, institutions —including those with limited resources —can enhance accessibility and equity in their professional development and job placement support. The implications offer a promising direction for expanding career readiness initiatives.

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Appendix A:

Individual survey item changes from Pre-test to Post-testQuestionSubscale Changes in Student Self-efficacy from Pre-test to Post-test

Question: How confident are you in your ability to... Subscale	Pre-test		Post-test		*t*(843)	Cohen's *d*
	M	*SD*	*M*	*SD*		
identify and evaluate your career goals?	6.52	1.75	7.90	1.09	23.93*	1.69
meet new people in careers of interest?	6.24	1.99	7.81	1.22	23.24*	1.97
develop an effective cover letter to be sent to employers?	5.26	2.17	7.46	1.49	28.71*	2.23
evaluate a job during an interview?	5.88	1.91	7.74	1.15	28.98*	1.86
conduct an informational interview/career conversation?	5.77	2.02	7.91	1.13	30.07*	2.07
identify and evaluate your career preferences?	6.39	1.76	7.98	1.07	25.10*	1.85
clarify and examine your personal values?	7.23	1.56	8.18	1.05	17.24*	1.61
utilize your social networks to gain employment?	5.97	2.07	7.83	1.25	26.57*	2.03
identify and evaluate your career goals?	6.45	1.76	7.99	1.09	26.15*	1.71
market your skills and abilities to an employer?	6.06	1.78	7.71	1.26	26.21*	1.83
use your social network to identify job opportunities?	5.98	2.03	7.86	1.30	27.15*	2.01
integrate your knowledge of yourself, the beliefs and values of others, and your career information into realistic and satisfying career planning?	6.08	1.75	7.84	1.13	27.83*	1.84
develop realistic strategies for locating and securing employment?	5.88	1.87	7.72	1.21	28.14*	1.91
join organizations that have a career emphasis?	5.99	1.96	7.73	1.28	24.98*	2.02
develop a variety of skills you can use throughout a lifetime of career decision-making?	6.70	1.67	7.99	1.09	20.97*	1.79

Question: How confident are you in your ability to... Subscale	Pre-test		Post-test		*t*(843)	Cohen's *d*
	M	*SD*	*M*	*SD*		
dress in a way that communicates success during a job interview?	7.64	1.60	8.40	0.95	13.97*	1.59
identify the resources you need to find in the career you want?	6.14	1.80	7.89	1.16	27.31*	1.87
contact an employer to secure a job interview?	6.27	2.01	7.85	1.23	22.91*	2.00
know where to find information about potential employers in order to make good career decisions?	6.00	1.91	7.86	1.16	28.11*	1.92
solicit help from an established career person to help chart a course in a given field?	5.74	2.06	7.78	1.26	28.18*	2.106
achieve a satisfying career?	6.61	1.84	7.83	1.25	19.72*	1.78
achieve a satisfying career?	6.62	1.83	7.82	1.24	19.90*	1.76
market your skills and abilities to others?	6.26	1.74	7.82	1.17	26.25*	1.72
identify and evaluate your personal capabilities?	6.54	1.66	7.93	1.10	23.70*	1.71
identify an employer with job opportunities you want?	6.27	1.74	7.91	1.09	26.97*	1.76
know how to relate to your boss in order to enhance your career?	6.22	1.94	7.71	1.30	22.09*	1.95
evaluate the job requirements and work environment during a job interview?	6.45	1.74	7.87	1.14	23.58*	1.76
prepare for an interview?	6.28	1.91	7.85	1.22	23.50*	1.94
select helpful people at the workplace with whom to associate?	6.82	1.63	7.96	1.15	20.08*	1.66
identify your work skills?	6.65	1.66	7.95	1.12	23.37*	1.63
organize and carry out your career plans?	6.42	1.77	7.84	1.16	24.29*	1.71
deal effectively with societal barriers?	6.36	1.84	7.66	1.27	20.96*	1.81
research potential career options prior to searching for a job?	6.35	1.79	7.95	1.12	25.41*	1.83

Question: How confident are you in your ability to... Subscale	Pre-test		Post-test		*t*(843)	Cohen's *d*
	M	*SD*	*M*	*SD*		
deal effectively with personal barriers?	6.51	1.76	7.72	1.19	19.73*	1.78
develop effective questions for an information interview?	5.81	2.02	7.78	1.22	27.88*	2.06
understand how your skills can be used effectively in a variety of ways?	6.49	1.70	8.00	1.11	24.60*	1.78

* $p < .001$.

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Early Career Development Through Micro Work-Integrated Learning Experiences

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Abstract: Employers expect post-secondary students and recent graduates to be increasingly career ready, even for their first internships. To support career readiness, institutions are developing innovative Work-Integrated Learning (WIL) programs. Our study showed that a one-week structured career development experience entitled Micro-ExP yielded positive results for participants. This program provided valuable insights into the efficacy of WIL programs for post-secondary students with no or limited prior work experience. The findings highlight the positive impact of students' participation in a WIL program, irrespective of their field of study, on their skills development, job search confidence, and career readiness.

Keywords: Innovative Work-Integrated Learning, NACE Career Readiness skills, Career confidence, Career development

Employers seek career-ready graduates with academic knowledge, experience, and a blend of technical and soft skills to ensure a seamless transition into the workplace (Giammarco et al., 2020). The Future Is Social and Emotional: Evolving Skills Needs in the 21st Century emphasizes that employers are increasingly prioritizing social and emotional skills alongside technical expertise (Giammarco et al., 2020). The report highlights that competencies such as resilience, problem-solving, collaboration, and communication are among the most valuable for current and future work environments.

The National Association of Colleges and Employers (NACE)'s Career Readiness Competencies Framework describes a set of eight core competencies that employers seek in new college graduates. According to the NACE's Job Outlook 2024 survey (2023), nearly 90% of employers are looking for evidence of problem-solving abilities, and almost 80% prioritize strong teamwork skills in potential candidates (Gray & Koncz, 2024). For career services professionals, the NACE Career Readiness Competencies framework

continues to be a vital tool for assessing the impact of career development initiatives, including Work-Integrated Learning (WIL). They also serve as a benchmark for both educators and employers, ensuring that students develop essential skills needed to thrive in professional environments. Integrating NACE competencies into experiential learning models helps institutions bridge the gap between academic preparation and career expectations. WIL plays a critical role in equipping students with the comprehensive skill set demanded by today's employers. By combining academic knowledge with hands-on, real-world experience, WIL fosters the development of technical expertise, practical application, and essential soft skills such as communication, teamwork, and problem-solving. Employers increasingly value WIL experiences that align with these competencies, recognizing them as indicators of workforce readiness (NACE, n.d.).

WIL is a vital component of the Canadian post-secondary educational system, providing students with hands-on, real-world experiences that complement their academic learning. Understanding the Canadian WIL landscape becomes essential to developing inclusive and accessible experiential learning opportunities. Traditional WIL experiences involve collaborations between educational institutions, employers (industry or community partners), and students, often embedded within course or program curricula. However, funding and subsidies for WIL opportunities are generally limited to Canadian citizens and permanent residents, creating barriers for students who do not meet these requirements. International students also face inequalities in accessing work-based WIL opportunities, often encountering greater challenges in securing placements compared to their domestic peers (Gribble & McRae, 2017).

In Quebec, where French is the primary language, international students seeking work experience in a new country must navigate cultural differences and, for some, additional language barriers. While WIL programs can help international students gain insights into Canadian workplace culture and build professional networks, there is limited provincial data on their effectiveness from Quebec. Much of the existing research on WIL benefits focuses on co-op programs, leaving gaps in understanding how other WIL models, including micro-WIL, address accessibility challenges in the Quebec context.

While students in traditional WIL opportunities have significantly more hours of experience (anywhere from 150 to 400 or more) during which they can develop career readiness and technical skills (Gribble & McRae, 2017), our study has shown that a carefully constructed short program can also offer tangible career development benefits to post-secondary students.

Addressing Barriers to WIL

It is important to note that there is no one-size-fits-all model for WIL, as each student's needs, circumstances, and career goals are unique. Common barriers to equitable access persist, emphasizing the need for tailored approaches to different student cohorts. Barriers to accessing WIL also include limited professional networks, financial constraints, systemic inequities, and a lack of prior experience, disproportionately impacting historically underrepresented groups (Malatest & Associates, 2018). Expanding diverse WIL practices across educational institutions is a strategy used to ensure the continuity of experiential

learning during challenging times that can limit access to traditional WIL opportunities (Business + Higher Education Roundtable, 2020; Jackson et al., 2023). Multiple approaches to WIL provide institutions with flexible alternatives during periods of change and disruption, such as a pandemic (Dean & Campbell, 2020; Zegwaard et al., 2020). These adaptable models ensure continued access to experiential learning opportunities, enabling institutions to maintain career development and student engagement despite evolving challenges.

Established WIL models (e.g., internships, entrepreneurship programs, project-based learning, apprenticeships, and cooperative education programs) are also in high demand as institutions build these more frequently into the curriculum, yet the number of experiences and hosts required are not keeping pace (CEWIL Canada, 2024). Jackson et al. (2023) examine participation and outcomes for diverse student groups in WIL programs. While not specifically addressing the issue of limited placements in mandatory WIL components at Canadian universities, the article highlights how certain student demographics may face barriers to participation, which can be exacerbated by the limited availability of placements. The C.D. Howe Institute's report "From Class to Career: How Work Integrated Learning Benefits Graduates Looking for Jobs" (Wyonch & Seward, 2023) notes that while WIL participation is mandatory for many post-secondary programs, the growth in WIL opportunities has not kept pace with increasing student demand leading to a shortfall in available placements. Notably, financial concerns were a major challenge for 24% of university WIL students as published in a recent report by the Higher Education Quality Council of Ontario (2023).

Additionally, the requirement for long-term, full-time commitment, especially for unpaid WIL in social, educational, and health sectors, is challenging for students who cannot afford to step away from paid work or are balancing academic and personal responsibilities (Mackaway et al., 2023). These disparities underscore the need for innovative approaches to expand WIL offerings and ensure equitable student access. As a result, higher education practitioners are increasingly adapting opportunities in innovative ways to make them more accessible to a broader range of students (Kay et al., 2019).

The pandemic exacerbated existing challenges, making it even more difficult for students to secure meaningful first-work opportunities to develop skills and gain experience and career confidence. By disrupting how we work and making it hard for people to interact, the pandemic interrupted many established traditional WIL programs, straining an already short supply of student work opportunities. This was particularly true for those not meeting the eligibility requirements for traditional WIL programs (Zegwaard et al., 2020). To address this gap, McGill University, which offers very few structured co-op programs and internships, developed innovative WIL by introducing Micro Work-Integrated Learning (micro-WIL) experiences. Micro-WIL refers to short-term, flexible forms of WIL, such as applied research projects and field studies programs, that are typically less than a full academic semester (e.g., shorter than about four months; Business + Higher Education Roundtable, 2024; CEWIL Canada, 2024). By creating micro-WIL experiences, McGill was able to provide more flexible, accessible, and scalable opportunities for students, particularly targeting those with no previous work experience or seeking their first

professional experience. Micro-WIL opportunities were designed for early-year undergraduate students, regardless of residency status, ensuring equitable access to experiential learning. This paper outlines the Micro-ExP program approach and findings to support practitioners wanting to implement innovative and impactful WIL programs for post-secondary students.

Micro-ExP at McGill University

McGill University is a publicly funded, research-intensive university serving over 39,000 undergraduate and graduate students from over 150 countries. The composition of the student population includes a wide range of backgrounds and identities, such as 2SLGBTQ+, students with disabilities, Black, Indigenous, and People of Color (BIPOC), international, Canadian, U.S, and Quebec students, first-generation, mature students, religious and cultural groups. McGill is an environment that values learning, enrichment, and achievement with and for the benefit of a diverse community of students (McGill University, n.d.). Within the McGill University context, the Micro-ExP program tackled traditional employment barriers by prioritizing equitable access for students with limited work experience and addressing the skills gap among early-year students (Fletcher et al., 2021). Over a three-year period, more than 600 students, the majority with no prior work experience, participated in a weeklong co-curricular career readiness program, which included onboarding, training, access to an online learning community, participation in an experiential project/placement, and reflection activities. The program's flexible structure, short duration, and focus on accessibility made it possible for a diverse group of McGill students, including those from historically underrepresented backgrounds, to engage in valuable early career opportunities.

By actively recruiting students early in their academic journey, especially those without prior work experience, the program ensured that participants who might otherwise be overlooked by traditional opportunities could develop essential professional skills. Micro-ExP also focused on recruiting students from all backgrounds, addressing barriers faced by historically underrepresented groups, and supporting a more equitable transition into the workforce (Malatest & Associates, 2018). To ensure that Micro-ExP reached the students who would benefit the most, recruitment efforts were designed to prioritize those with limited or no prior work experience. The communication/recruitment strategy was built around a website created to inform students and employers about the program and serve as the main access point. A multi-pronged recruitment strategy for early-year undergraduate students was conducted through multiple channels, including: live, virtual info sessions; recordings available on the program site to help set expectations for the program (time commitment required, etc.); cross-promotions with university and faculty partners; targeted mass email campaigns for first- and second-year students with featured testimonials; promotion in the university’s career management system; and social media campaigns. Students signed up for the program through an easy-to-navigate online form, where they indicated their areas of interest and availability. The program was open to all students, regardless of residency status or prior work experience, which ensured that those who may not typically meet the eligibility criteria for traditional co-op or internship opportunities were not overlooked. Selection criteria prioritized students based on interest,

early-year academic standing, and a lack of prior professional work experience. This targeted approach enabled a wider and more diverse group of students to benefit. In our first 4 cohorts, 50% of participants were from underrepresented groups.

To increase accessibility, the program was designed as an unpaid short-term experience—lasting just one week—allowing students with varied commitments to participate without the long-term demands of traditional internships. The program ran during academic breaks, such as the Winter Study Break and after the winter semester, to avoid conflicts with academic demands. To further remove participation barriers, the program incorporated remote work opportunities and a variety of experiences untied to specific locations, ensuring students outside major employment hubs could still engage. Additionally, there were no program fees or costs for students. The timing and length of the program ensured that international students were eligible to participate without the need for co-op work permits. Participants who completed the program received recognition on McGill's Co-Curricular Record, further enhancing their employability.

The Micro-ExP Program Overview

The Micro-ExP program was launched in response to the challenges posed by the COVID-19 pandemic, which made it harder for students to find meaningful early work experiences. The program began in winter 2022, and as of fall 2024, six cohorts participated. These opportunities allowed students to work on a project or in a placement, providing concrete experience with an expected set of deliverables or tasks that "real" professionals complete using their transferable skills. The Micro-ExP program offered students the following 3 types of practical WIL opportunities: micro-project (virtual), micro-placement (hybrid), and micro-course (virtual). All of the options followed the same sequence of instructions outlined in Table 1.

Micro-Project (Virtual)

Micro-projects provided students with short-term virtual projects hosted by employers. Each student completed a maximum of 12 hours of project work. Depending on project deliverables projects were assigned to an individual or a team of students.

Micro-Placement (Hybrid)

Micro-placements, either partially or fully on site, provided students with valuable in-person exposure to real workplace environments. Each placement allowed students to observe and assist with daily tasks or complete project work tailored to the employer's needs, with a commitment of up to 15 hours per student.

Micro-project and micro-placement opportunities were provided by 98 distinct organizations, across a wide variety of industries, such as not-for-profit, digital marketing, data analytics, human resources, communications, information technology, research and web design.

All three experiences helped students put their learning into practice through hands-on tasks or assignments, which were key to ensuring a meaningful learning experience. Through program components like standardized in-person and online training, tools,

Table 1. *Micro-EXP Program Schedule*

Day	Activity	Description
1	Onboarding Session	Introduction to the program, setting expectations, responsibilities, and success tips (e.g., effective communication skills). Access provided to the e-learning course, "Preparing for Your Internship."
2	Micro-ExP and Your CV Workshop	Workshop on enhancing CVs to reflect professional development experiences, including how to highlight micro-projects, courses, placements, and relevant skills gained during the program.
3	LinkedIn Profile Workshop	Workshop on building a compelling LinkedIn profile, showcasing skills, and integrating the WIL experience effectively to create a unique professional brand.
4	Project/Placement /Course Work	Students work on their project, course, or placement applying their skills in a professional setting, supported by access to supervisor support, digital tools, resources, and a virtual learning community for peer interaction.
5	Wrap-Up & Reflection Session	Reflection activities were facilitated to guide students to share their experiences with one another and practice articulating what they gained. Students were coached to consider their experience through the lens of NACE career readiness competencies. Finally key actions to help pave a path towards new jobs and internships were discussed (e.g., securing LinkedIn endorsements, supervisor references, etc.).

resources, and guided reflection activities, the program helped students internalize their learning throughout the week.

Micro-Course (Virtual)

This option gave students access to online (LinkedIn Learning) courses, taught by industry experts, related to the employability skills they were interested in building. The course offerings included project management, digital marketing, written workplace communication, Excel data analysis, and Python coding. Unlike some placements and projects, courses were completed independently. However, private channels allowed learners and program coordinators to deepen their understanding and engagement with the content through group discussion. The micro-course option was dropped from the program after the first offering due to funding constraints.

Integrating NACE Career Readiness Competencies

The Micro-ExP program allowed students to develop essential skills in a structured, targeted manner, making them more competitive candidates for future internships or employment. Employers also used Micro-ExP to help students gain and refine NACE career competencies, ensuring a pipeline of well-prepared students who are better prepared to

meet industry needs. These short-term, flexible WIL opportunities allow students to engage in real-world projects that enhance their skills and confidence. According to a study by Parker Dewey, 96% of students who participated in Micro-Internships reported improvement in at least one career competency, with nearly 90% indicating improvement in three or more competencies (Parker Dewey, 2025). These short-term, flexible WIL opportunities let students work on real-world projects, boosting their skills and confidence. To effectively prepare students for the workforce, the Micro-ExP framework is aligned with the eight NACE Career Readiness Competencies.

Students say these experiences help them develop important skills like communication, professionalism, and critical thinking. For example, project tasks require them to present findings, write reports, and communicate professionally, which improves their communication skills. Problem-solving exercises and real-world challenges enhance their critical thinking abilities (Parker Dewey, 2025). This research utilizes the NACE Career Readiness Competencies as a structured framework to assess and develop essential skill competencies within the Micro-ExP program. By evaluating the impact of these experiences, the study aims to determine how they have influenced students' career readiness and their perceptions of improvement in key areas of career development. The NACE Career Readiness competencies developed through Micro-ExP include career & self-development, communication, critical thinking, equity & inclusion, leadership, professionalism, teamwork, and technology.

Career & Self-Development

Micro-ExP activities encouraged students to explore careers by working on industry-relevant projects, reflecting on their professional growth, and setting career goals. For example, a student works on a marketing project for a local business, identifying target audiences and creating a campaign. They reflect on their strengths and areas for improvement and set goals to enhance their marketing skills.

Communication

Effective workplace communication was developed through project-based tasks, requiring students to present findings, draft reports, engage in professional email correspondence, and participate in virtual or in-person meetings. These experiences helped students refine their verbal, written, and digital communication skills essential for professional success. Example: A student presents their recruitment strategy to attract French/English bilingual candidates at a team meeting to discuss project progress and writes a detailed report.

Critical Thinking

Micro-ExP initiatives incorporated problem-solving exercises, case studies, and real-world industry challenges that required students to analyze information, evaluate possible solutions, and make decisions. These experiences developed students' ability to approach complex problems with strategic thinking. For example, a student is given a real-world problem, such as determining whether needs-based funding is available to support all First Nations, Inuit, and Métis communities and organizations with literacy and essential skills. They analyze data, evaluate different solutions, and decide on the most effective strategy to implement.

Equity & Inclusion

Projects may focus on inclusive workplace practices, cross-cultural collaboration, and exposure to diverse work environments, ensuring all students can participate. For example, a student collaborates with peers from diverse backgrounds on a project to improve website accessibility. They ensure that all voices are heard and considered in the final design, incorporating feedback from users with different abilities and backgrounds to create an inclusive and user-friendly website.

Leadership

Students gained leadership experience through self-directed projects, decision-making responsibilities, and opportunities to lead small teams or initiatives. Example: A student leads a small team in creating LinkedIn content, delegating tasks, setting deadlines, and motivating the team to achieve their goals.

Professionalism

Workplace readiness is reinforced through structured deadlines, feedback sessions, and performance expectations. Micro-ExP provides students with opportunities to demonstrate reliability, work ethic, and adaptability—all critical components of professionalism. For example, a student consistently meets project deadlines, engages in regular feedback sessions with their supervisor, and adapts to changes in project scope, showcasing their reliability and strong work ethic.

Teamwork

Collaboration was central to the Micro-ExP framework, where students worked in teams with peers, mentors, or industry professionals. Experiences included joint problem-solving tasks, cross-functional team projects, or collaborative presentations, enhancing students' ability to work effectively with others. Example: A student works with a team to organize a community event, coordinating logistics, managing budgets, and ensuring effective communication among team members.

Technology

Micro-ExP experiences incorporated digital tools, industry-specific software, and remote collaboration platforms to ensure that students gained technological fluency. By working with real-world applications and emerging technologies, students developed skills that align with employer expectations. Example: A student uses industry-standard software (WIX) to design a prototype for a new product, gaining hands-on experience with the tools and technologies used in their field.

Integrating Community of Inquiry (COI)

To further enhance the impact of these experiences, the Micro-ExP program was designed using the Community of Inquiry (CoI) framework (Garrison et al., 1999; Swan et al., 2009), which emphasizes engagement, learning, and reflection in both online and in-person settings. The shift to remote and blended learning environments, driven by the 2020 pandemic, necessitated innovative approaches to maintain student engagement and build a sense of community. By integrating cognitive, social, and teaching presence, the CoI framework reinforced the program's experiential nature, ensuring students actively

participated, collaborated, and reflected on their experiences (Briant & Crowther, 2020). This structured, interactive approach was designed to help students gain insights into workplace dynamics and strengthen their self-awareness and career readiness, bridging the gap between academic learning and professional success.

Cognitive presence was emphasized through workshops where students reflected on their skills, articulated experiences, and learned to present themselves effectively to potential employers. Teaching presence was established through deliberate design, facilitation, and direction of learning activities to ensure meaningful educational outcomes. Starting with a comprehensive onboarding session on Day 1, students received clear guidance on communication and professional behavior, which was reinforced by the “Preparing for Your Internship” e-learning course.

Social presence became the cornerstone of the Micro-ExP program's design, essential for fostering a collaborative and engaging learning environment within its largely asynchronous format. By emphasizing social interaction and community-building, Microsoft Teams served as the central collaboration tool, offering virtual spaces that encouraged students to connect, communicate, and actively participate, enhancing the WIL experience regardless of the format. Dedicated channels like "Introduce Yourself," "Question of the Day," and "Networking Lounge" allowed participants to interact asynchronously, discuss career topics, and access shared resources, such as recordings of workshops. This supported our goal of creating a sense of belonging and engagement within the program and the cohort.

Facilitators also played a crucial role throughout the program, guiding students’ career and self-development while supporting their networking and employability skills. Workshops, onboarding sessions, and wrap-ups provided students with practical tips for their careers, encouraging them to seek references, career conversations, and endorsements on LinkedIn, equipping them with valuable connections and experiences for their resumes and interviews.

Methodology

This paper focuses on Micro-ExP participant self-reported survey data from Spring 2022, 2023, and 2024. During the Spring 2022 semester, most instruction at McGill University took place online (synchronous and/or asynchronous) due to the COVID-19 pandemic. However, the institution also offered some hybrid (a mix of online and in-person instruction) and in-person courses.

Participants

McGill undergraduate and first and second-year graduate students with no prior work experience were eligible to participate in the Micro-ExP program. Across all three years, a total of 849 students registered for the program, and 707 finished the program, with 47% of completers having participated in the survey. The participants were primarily undergraduate students with a few early-year graduate students. The majority of student participants aligned with the program goals, with 62% first-year, 27% second-year, and 6% third-year students. We recruited students from diverse backgrounds to address some of

the barriers that historically disadvantaged groups face in building career skills, including international students who are not eligible for traditionally funded WIL opportunities. While we did not specifically target historically underserved groups, we encouraged broad engagement, including among international students (49% in 2022). A substantial proportion of participants identified with equity-deserving groups: 54% racialized (compared to 38% undergraduate student body), 29% 2SLGBTQ+ (compared to 20% undergraduate student body), 20% first-generation (compared to 14% undergraduate student body), and 9% Black (compared to 4.4% undergraduate student body (comparisons to the undergraduate student body are from the McGill University Biennial Results of the Student Census 2023).

Each year, following completion of the program, the Assessment and Evaluation Team distributed survey invitations using Qualtrics software to each eligible student (n = 707) who participated in the program. As seen in Table 2, in the 2022 cohort 138 students responded in the course, yielding a 56% response rate, while 63 responded in the micro-placement/project streams, resulting in a 43% rate. For the 2023 and 2024 cohorts, responses for the micro-placement/project streams were 101 and 33, with 60% and 43% response rates, respectively. The survey respondents are representative of Micro-ExP program participants.

Study Measures

To assess the impact of Micro-ExP participation on enhancing participants' professional knowledge, skills, and experience, students completed online surveys following the completion of the program. The surveys included questions about students' motivation for participating, the NACE Career Readiness competencies and industry-relevant skills that students developed, the competencies they were interested in further developing, the impact of participation on self-efficacy and networking, long-term career reflection, and overall program experience. This paper presents findings exclusively from participant self-report scales, using quantitative methods with multiple-choice and Likert scale questions. The scales used for study measures are reported in Table 3.

Table 2. *Total Number of Respondents and Response Rates*

Program	Registered in program (*n*)	Completed program (*n*)	Completed survey (*n*)	Response rate
Micro-Course, 2022	429	327	138	56%
Micro-project/Micro-placement, 2022	164	147	63	43%
Micro-project/Micro-placement, 2023	177	169	101	60%
Micro-project/Micro-placement 2024	79	64	33	43%
Total	849	707	335	

Table 3. *Study Measures*

Survey question	Scale
Which of the following skills did you develop by participating in the Micro-ExP?	Select all that apply from 11 NACE Career Readiness and industry-relevant skills listed: Career and self-development, communication, critical thinking, equity and inclusion, leadership, teamwork, professionalism, technology, decision-making and problem-solving, ability to communicate my experience in a CV and job interview, openness to experience. Students complete the CSES before class begins.
Which of the following skills are you interested in further developing?	Select all that apply from 11 NACE Career Readiness and industry-relevant skills listed: Career and self-development, communication, critical thinking, equity and inclusion, leadership, teamwork, professionalism, technology, decision-making and problem-solving, ability to communicate my experience in a CV and job interview, openness to experience.
What are the top three expectations that were met through your Micro-ExP experience?	Select top three from 11 options listed: Gained job specific knowledge/skill, Explored potential career interests, Identified the skills I need to be effective in the workplace, Gained relevant experience, Opportunity to network with/gain references from employers, Developed career skills (e.g., teamwork, communication, critical thinking), Gained a better understanding of social norms and culture of the industry of the Micro-course/project/placement, Learned how to translate my experience to CV and interview, I know what a "day in the life" is like in the work environment, I understand the education and skills related to this particular profession, I feel that my placement experience is preparing me for this field.
Confidence as measured by: I gained skills I can use in a future job or internship. I learned strategies to clarify my career interests. I feel better prepared to look for a job.	Five-point response scale ranging from 1 (strongly disagree) to 5 (strongly agree).
Career planning/ Career reflection and goal setting/ Career planning and goal setting as measured by: Micro-Exp helped think about long-term career goals	Five-point response scale ranging from 1 (strongly disagree) to 5 (strongly agree)

Survey question	Scale
Overall experience as measured by: How would you rate Micro-ExP? How likely is it that you would recommend Micro-ExP to a friend?	Five-point response scale ranging from 1 (strongly disagree) to 5 (strongly agree). Four-point response scale ranging from 1 (definitely not) to 4 (definitely yes).
Do you feel you are more knowledgeable about the Micro-course/project/placement you worked on?	Four-point response scale ranging from 1(not at all) to 4 (very knowledgeable).
Do you feel you are more familiar with the Micro-ExP industry you participated in?	Four-point response scale ranging from 1(not at all familiar) to 4 (very familiar).

Findings

Upon completing the program, students were asked to reflect on the impact of the three streams of Micro-ExP experience (micro-course, micro-placement, and micro-project) on their career readiness, as outlined by NACE competencies and industry-relevant skills. Sections below share students' self-reported perceptions of how Micro-ExP participation helped them improve in key areas of career development, the skills they are interested in further developing, career confidence, and reflection, and overall program experience.

Skills Developed and Interest in Further Developing Skills

As demonstrated in Table 4, for students aiming to develop competencies in openness to experience, career and self-development, communication in a professional setting, critical thinking, professionalism, and technology, Micro-ExP was effective in developing perceived proficiency by over 50% in these career skills. Students' engagement with workplaces through hands-on tasks, team collaboration, and client interactions may provide an environment where skills essential for future career success are developed. Our findings also show program participants are most interested in further developing Leadership (76%), career and self-development (75%), technology (74%), communication in a professional setting (72%), openness to experience (72%), and critical thinking (70%).

Confidence and Future Career Reflection

As shown in Table 5, program participation increased students' job search confidence, preparedness, and reflection on future career goals. Our findings show strong positive outcomes, with agreement levels ranging from 66% to 80%. The majority of participants reported gaining skills applicable to future jobs or internships (80%), feeling better prepared for job searching (71%), and clarifying their career interests (66%). Additionally, 71% indicated that participating in the program helped them reflect on their long-term career goals.

Research has demonstrated that confidence plays a crucial role in career success. Studies have shown that WIL enhances students' perceived self-confidence, awareness of career

Table 4. *Competency Development and Interest (*n=*235)*

Competency	Developed	Interested in further developing
Openness to experience	54%	71%
Career and self-development	53%	75%
Communication in a professional setting	52%	72%
Critical thinking	52%	70%
Professionalism	52%	69%
Technology	49%	74%
Work effectively as a member of a team	25%	32%
Leadership	23%	76%
Decision making and problem solving	22%	n/a*
Ability to communicate my experience in a professional setting	21%	n/a*
Equity and inclusion	12%	24%

** We did not ask about interest in further developing these skills.*

Table 5. *Career Confidence and Reflection (*n=*335)*

Goal	Strongly agree + agree
Gained skills I can use in a future job or internship.	80%
Feel better prepared to look for a job.	71%
Participating in the micro-course/project/placement helped me think about my long-term career goals.	71%
Learned strategies to clarify my career interests.	66%

prospects and provides practical research experience (Zegwaard & McCurdy, 2014). It also positively influences their perceived employability by strengthening human capital, work values, and career self-management skills (Ng et al., 2022) and increased confidence in their ability to secure employment and effectively transition into the workforce (Reddan, 2008).

Overall Program Experience

Students rated the program positively, with 93% rating the program experience as good, very good, or excellent, and 97% indicating that they would recommend the program to a friend.

Overall, the findings reveal gains in students' skills development, career confidence, and readiness after participating in the program. The findings also revealed that acquiring

experience, exploring a work environment, and expanding one's network were the top three factors motivating students to participate in the Micro-ExP program.

Correlations

To better understand the relationships between key career development constructs (skill development, job search confidence, career exploration) and program participation/study variables, we ran bivariate correlations. Table 6 displays the means, standard deviations, and correlations of the study variables.

Skills Development, Interest Exploration, and Job Search Confidence

Identifying career interests and skill acquisition were significantly correlated with job search confidence, r(389) = .54, p < .01, and, r(387) = .48, p < .01. These findings suggest that Micro-ExP participation supported students' skill development, exploring career interests, and increased job search confidence.

Table 6. *Statistics for Each Study Variable (*n=*335)*

			Bivariate correlations							
Variable	*M*	*SD*	1	2	3	4	5	6	7	8
Learned strategies to clarify career interests	3.68	0.82	1							
Feel better prepared to look for a job	3.74	0.91	.543**	1						
Gained skills can use in future job/internship	3.99	0.91	.407**	.482**	1					
Micro-exp helped think about long-term career goals	3.80	0.84	.387**	.382**	.306**	1				
Feel knowledgeable about the micro-course/ project/placement	2.85	0.67	.158*	.183**	.381**	.134*	1			
Feel more familiar with the industry of the micro-exp	2.44	0.80	.215	.201	.368**	.307**	.570**	1		
Overall micro-exp rating	3.80	0.93	.361**	.389**	.483**	.408**	.446**	.600**	1	
Likely to recommend to a friend	3.48	0.56	.311**	.337**	.411**	.343**	.317**	.337**	.662*	1

*$p < .05$ **$p < .01$

Skill Development, Interest Exploration, and Long-Term Career Reflection

Skill acquisition, identifying career interests, and job search preparedness were significantly correlated with reflections about long-term career exploration, $r(246) = .31$, $p < .01$, $r(248) = .39$, $p < .01$, $r(245) = .38$, $p < .01$. These findings illustrate that program participants reported developing job-relevant skills, clarifying career interests, and increased job search readiness while engaging in reflections about their future goals and long-term career planning. These findings further suggest that skill building, career exploration, and job search readiness are interconnected and reinforce one another. This, in turn, underscores the importance of a holistic approach to career preparation, supporting students in navigating both short and long-term career development.

Industry Familiarity and Long-term Career Exploration

The findings show that increased familiarity with the industry was significantly correlated with long-term career reflection, $r(76) = .307$, $p < .01$. This finding implies that exposure to an industry through a structured program could help/is likely to help students make more informed long-term career decisions.

Overall Micro-ExP Experience

Skill acquisition, job search preparedness, career interest exploration, and future long-term career reflection were significantly correlated with overall Micro-ExP rating, $r(388) = .48$, $p < .01$; $r(387) = .39$, $p < .01$; $r(391) = .36$, $p < .01$; $r(249) = .41$, $p < .01$.

This finding highlights the importance of skill-building, job-search confidence, and refining career goals in overall program satisfaction. Furthermore, when students feel the program helps them connect their short-term experience to their broader career aspirations, they view it more positively. Strong student interest in participation, including requests to repeat the program, confirms that this offering meets the needs of early years students seeking a first experiential opportunity in a low-risk environment.

Limitations, Implications for Practice, and Directions for Future Research

We implemented the Micro-ExP and collected student data to illuminate the efficacy of innovative WIL programs and potential next steps. We ran this program knowing that limitations to our data collection design and program delivery would impact the inferences we could make about program effectiveness. Hence, before sharing the implications for practice, we discuss limitations and lessons learned.

Limitations

The methodological limitations of the program are primarily related to studies in applied settings, namely, the correlational design and implementation at one site. Our study was cross-sectional and correlational in nature, thus limiting its potential for causal assertions. As with other programs implemented at one institution, the generalizability is limited (Yin, 2014). We weighed several options when selecting this methodology, including minimizing survey fatigue and maximizing limited resources for both the assessment and career service teams. However, other higher education institutions interested in implementing similar Micro-WIL programs could consider using additional methodological designs. For example, using a pre-post design can determine the extent to which skill development can

be attributed to the WIL experience versus prior knowledge or external factors. A second methodological option could be to include a control group to ensure the internal validity of the findings and determine whether the change in skill development is due to participation in the program. An additional methodological limitation is that the program relied exclusively on self-reported measures of Micro-ExP outcomes. While these data provided insight into students' perceptions of their proficiency, self-reported data for skills assessment only presents one perspective on the issue in a context where employers may have a different view. Future programs could use more objective measures such as supervisor/employer evaluation, rubric-based skill evaluation, and practical demonstration (e.g., presenting a solution to a workplace challenge in a controlled environment). A final methodological consideration, if resources are available, would be to conduct a follow-up with students six months to one year after they participate in the program to learn if the students secured employment following the program and if their position aligns with their WIL placement.

The following outlines a few methodological limitations related to program delivery. First, the program only recruited students who were self-motivated to participate. Future program delivery could examine new methods to increase student engagement by proactively recruiting participants to create a more diverse and representative sample. A second limitation of the program was that only a limited number (98) of employers were involved, which limited the diversity of workplace experiences available to students. Future programs could increase employer participation to provide students with a broader range of learning opportunities.

Despite these limitations, the present program provided an exploratory snapshot of the impact of micro-WIL experience on students' skill development, job search confidence, and career exploration that can be further investigated with longitudinal methodologies (e.g., to assess causality of relations) and supplemental measurement approaches (to supplement self-report measures).

Implications for Practice

Although this study was cross-sectional and exploratory in nature, the present findings bear important implications for post-secondary institutions with respect to implementing WIL programs and better supporting students' career development and employability. Given our findings on the positive impact of micro-WIL participation on students’ skill development, job search confidence, and preparedness, and their future career reflection, it is essential to ensure that students have access to these programs to be better prepared for their future careers. Our study expands on previous research, highlighting that perceived self-confidence can significantly impact employability and career success (Susanti & Ardi, 2022). For instance, our findings are consistent with previous studies reporting that work-integrated programs boost confidence and lead to better employment outcomes (Suyitno et al., 2025; Xu et al., 2022). These findings have practical implications for career services and program designers beyond the scope of Micro-ExP. Drawing on patterns observed in our data, we offer the following suggestions for future program development or scaffolding: enhance students’ career development, increase students’ career readiness, reinforce students’ confidence, and utilize a holistic approach.

Enhance Students' Career Development

Integrate structured career reflection exercises into work-integrated programs to help students critically reflect on their experiences and better understand their career aspirations. Examples include activities such as guided journaling, mentorship discussions, and career coaching sessions (Higher Education Quality Council of Ontario, 2020).

Increase Students' Career Readiness

Incorporate more simulated job search activities to provide students with practical experience and prepare them for real-world job searches. Examples include mock interviews, résumé workshops, and networking events. (Bieler, 2020; Budnick & Barber, 2021).

Reinforce Students' Confidence

Provide resources such as one-on-one career coaching and alumni panels. These resources are crucial in helping students build confidence in their job search abilities and form their emerging professional identities (Tomlinson & Jackson, 2019).

Further Skill Development and Holistic Approach

As previously mentioned, participants reported high levels of interest in further developing skills. The high level of interest suggests that students recognize the importance of these competencies for their future career success and are seeking further opportunities to enhance them. The high level of interest indicates that the program effectively raised students' awareness of the importance of these competencies for future career success, motivating them to seek further opportunities to enhance their skills. According to Jackson & Wilton (2016), motivation to learn can be considered the most important aspect of a student's employability. Likewise, as Fugate & Kinicki (2008) argued, individuals with high motivation to learn will effectively identify opportunities and make necessary changes to enhance their employment prospects.

Our findings also revealed that skill-building, career exploration, and job search readiness are interconnected and reinforce one another, consistent with the literature (Jackson et al., 2023; Stirling et al., 2024). This underscores the importance of a holistic approach to career preparation, supporting students in navigating short- and long-term career development. This can be applied in WIL practice by 1) designing programs that incorporate a career competency framework to enhance students' awareness of skill development while fostering career exploration, 2) including a reflection component to enable students how these skills align with their career goals, 3) industry engagement and employer mentorship to provide students with real-world insights and networking opportunities that support their professional growth.

Our program's positive outcomes suggest that expanding access to micro-WIL opportunities, particularly for students from underrepresented backgrounds, can help bridge employment gaps and enhance career readiness skills across diverse student populations. By providing inclusive and targeted WIL experiences, such as the one-week micro-WIL experience in our case, these types of programs can empower students to gain

valuable work-ready skills, build professional networks, and increase their confidence, ultimately enhancing their ability to succeed in the competitive job market.

Directions for Future Research

Our study shows that conducting intentional assessment and program evaluation in an applied setting can yield practical insights. We outlined a few suggestions for future study designs above. Gaining a deeper understanding of student self-confidence, job search preferences, and career interests early on in their academic journey presents a valuable area for future research that can positively impact student career outcomes. Further exploration into effective Micro-WIL program implementation is another avenue that can support career services that are often stretched for resources. Finally, more research with employers to develop programming that aligns with workplace trends would benefit career development practices.

Conclusion

Micro-ExP helps students build their career confidence and equips them with the tools needed for success. Many students struggle to define their career goals and understand industry realities (Clements et al., 2018). Micro-ExP served as a starting point, helping students clarify their career prospects and develop strategies to bridge the gap between academic learning and professional success. The program offers an opportunity for students to receive guidance from experienced professionals, helping them understand job expectations, how to integrate into new organizations, and how to navigate professional settings.

By embedding NACE competencies into Micro-ExP initiatives, institutions can create inclusive, high-impact learning experiences that provide students with industry exposure and equip them with career-ready skills. This approach ensures that short-term WIL experiences are structured, intentional, and aligned with workforce needs, making them a valuable tool for increasing accessibility and equity in experiential learning. For early-year students, these experiences are a crucial first step in building professional confidence, fostering career exploration, and establishing meaningful industry connections, laying the foundation for long-term career success.

The Micro-ExP program provided valuable insights into the efficacy of micro-WiL programs, with appropriate support and training, for post-secondary students with no or limited prior work experience. The findings highlight the positive impact of students' participation in a micro-WiL program, irrespective of their field of study, on their skills development, job search confidence, and career readiness. Our study showed that a one-week structured career development experience yielded positive career development skills for participants. To build on these findings, future research can employ more robust methodological designs, incorporate objective measures, and conduct follow-up studies to assess long-term outcomes. Additionally, increasing the diversity of participants, employers, and projects/placements can enhance the generalizability and richness of the data.

Overall, the study underscores the importance of providing students access to innovative WIL programs that better prepare them for their future careers. Removing and mitigating

barriers to participation, such as competing academic priorities, additional work authorization, lack of experience, and time commitment, resulted in increased participation from traditionally underrepresented groups. By addressing the identified limitations and exploring new research directions, post-secondary institutions can continue to improve the effectiveness of these programs and support students' career development and employability.

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A Renewed Sense of Hope

Career Exploration for Students on Academic Probation

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Abstract: Academic recovery programs and career exploration are often presented as mutually exclusive interventions. This study explores their intersection through the design and implementation of a credit-bearing career exploration course for students on academic probation at a public four-year university. Data collected from interviews and student artifacts suggest that career exploration contributed to sustained hope and optimism and an increase in positive self-talk. Additionally, participants demonstrated improved grade point averages (GPAs) and higher retention rates compared to peers. Results suggest that career planning enhances career self-efficacy and the success of students in the midst of academic recovery.

Keywords: career exploration, academic probation, academic recovery, career self-efficacy

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Underachievement in college students is often attributed to boredom in learning (Kanevsky & Keighley, 2003; Sharp et al., 2017), concern for the opinion of peers (Filade et al., 2019; Natale, 1995), performance or test anxiety (Harris & Coy, 2003; Rana & Mahmood, 2010; von der Embse et al., 2018), and inadequacies in time management (Agormedah et al., 2022; Appleby, 2006; Balduf, 2009; Lee, 2017; Panek, 2013; Tinto, 1993; Wolters & Brady, 2020). Others point to a lack of preparedness to meet the increased rigor and expectations of the college curriculum (Appleby, 2006; Earl, 1988; Haycock & Huang, 2001; Johnson et al., 2022). There is also an established correlation between a lack of interest in college major and underachievement in college, particularly for women (Lee, 2017; Rocconi et al., 2020).

When college students experience academic difficulty, they often face institutional policies that may hinder or threaten their ability to persist to graduation. Of these, the academic probation standing policies are among the most ubiquitous in higher education (Hoover, 2014). Academic probation parameters vary by institution, but many explicitly name a cumulative grade point average (GPA) below 2.0 as a defining factor (Cruise, 2002). Similarly, interventions designed to support students on academic probation differ by institution. However, there are common intervention designs, including academic success courses (McGrath & Burd, 2012; Shea, 2018) and intrusive academic advising models (Sims, 2019). The likelihood of persistence is lower for students placed on academic probation (Hoover, 2014). Therefore, intervention is critical for these students. While the range of contributing factors for academic difficulty varies, the consequences of academic probation policies are consistent across institutions. Students on academic probation are more likely to stop out or feel discouraged from returning to their institution (Fletcher &

Tokmouline, 2017; Lindo et al., 2010). Furthermore, at a cognitive level, the academic probation label influences how students see themselves, with demonstrated lower self-efficacy and weakened self-confidence in academic spaces (Barouch-Gilbert, 2016; Gordon, 2024; Kelley, 1996; Mosier, 2018; Multon et al., 1991).

Given the variation of mediating variables that lead to academic difficulty, students indicate a desire to receive intentional support from their institutions (Tovar & Simon, 2007). Existing academic recovery programs differ in size and format, but the goal of helping students navigate the academic expectations is consistent across programs (McGrath & Burd, 2012). One of the most common practices in academic recovery programs is offering a credit-bearing academic success course (Nordell, 2009). These courses often prove appealing to college students as a credit-bearing option, which may translate into a more serious investment in the experience by enrolled students (Hamman, 2014). Credit-bearing courses have demonstrated positive results with high program completion rates and a significant number of students recovering their academic standing (Kamphoff et al., 2007; McGrath, 2011; McGrath & Burd, 2012).

Historically, the support for the students on academic probation has focused primarily on academic skill building (Casey et al., 2018; Giampa & Symbaluk, 2018; Green, 1976; Hamman, 2014; Lipsky & Ender, 1990). Unlike their peers who demonstrated higher academic performance, college students experiencing academic difficulty do not receive the same level of support in career development. Instead, remediation focuses on addressing academic deficiencies (Jackson et al., 2011). However, research has revealed that students experiencing academic difficulty stand to benefit significantly from career development (Jackson & Healy, 1996; Loughead et al., 1995; Salleh et al., 2013).

The population of students experiencing academic difficulty faces psychological and emotional challenges in the career development process due to the academic probation label (Erazo, 2017; Leblanc, 2012). Of growing concern is the diminished self-efficacy of students who have experienced an academic setback compared to high-achieving peers. This assumption of inadequacy is likely to affect the career decision-making process and self-perception of ability to succeed (Schnorr & Ware, 2001). Other studies have echoed this concern, stating that students experiencing academic difficulty assume they possess limited future career opportunities compared to their high-achieving peers (Salleh et al., 2013). With structural barriers in place, such as an inability to explore new majors while under probationary status and remedial coursework delaying graduation, students on academic probation may experience a decline in their motivation to persist (Barouch-Gilbert, 2022; Rojas, 2022; Sanabria et al., 2021). Career development can combat this by providing reflective experiences focusing on futuristic goals (Hughes et al., 2013).

When working with students experiencing academic difficulty, career development interventions offer the ability to focus support on psychological concerns, including motivation and self-efficacy (Grier-Reed et al., 2009). Furthermore, to combat feelings of deficiency when comparing themselves to high-achieving peers, research recommends that career development interventions for students experiencing academic difficulty

emphasize personal growth and strengths rather than group comparisons (Sapp, 2006; Schnorr & Ware, 2001).

Career development interventions have successfully improved academic performance, self-efficacy, and career maturity in the K-12 educational setting (Jackson et al., 2011; Legum & Hoare, 2004). To date, a limited number of studies seek to explore the impact of a career exploration intervention for college students experiencing academic difficulty. Hwang et al. (2014) demonstrated the benefit of career development for underachieving students, broadly defined as those whose current academic performance falls short of their demonstrated prior ability. This study expands upon those findings by designing and implementing a career exploration course for students on academic probation to assess the potential impact on career self-efficacy and academic outcomes and seek to understand the student experience within the course.

Context

This study sought to enhance the support offered to college students experiencing academic difficulty as defined by the academic probation indicator, meaning the student's cumulative GPA fell below 2.00. The study site, Branchline University (a pseudonym), is a large public 4-year institution boasting just over 20,000 undergraduate students at the time of this study in Spring 2021. Approximately 3,000 undergraduate students are on academic probation or suspension at Branchline each year. Approximately 40% of students on probation are suspended (Institutional Data, 2020).

Scholars consistently connect an understanding of purpose and interest-major congruence to academic motivation, and by extension, success and retention (Robbins et al., 2006). However, at Branchline, the academic recovery program (ARP) primarily emphasizes other support areas, offering only minimal career development experiences. The ARP was created to bolster support for first-semester students experiencing academic difficulty. The program exists within the Center for Academic Excellence. Each fall and spring, ARP targets Branchline students on academic probation following their first semester at the university and provides intentional academic support to assist students in their return to good academic standing.

Since its inception, the ARP has evolved to strengthen the support offered to students on academic probation. As of Fall 2020, the program offered four options tailored for the diverse needs of its target population: a credit-bearing academic success seminar course, an eight-week academic success focus group, a non-credit-bearing asynchronous academic success course, and a peer mentor program. Eligible students were encouraged to work with their academic advisor to choose the best option amid time commitments and their academic course load.

While the variety of options accommodated diverse scheduling needs, at the time of this study, all four of the existing academic recovery options were limited in the type of support they offered. All program options addressed academic skill building and connection to the campus community and the resources within. This is not without justification. A lack of academic success skills including time management and study strategies continue to be

the most frequently cited factors attributed to declining academic performance by students and scholars (Ahmady et al., 2021; Astin, 1993; Balduf, 2009; Coleman & Freedman, 1996; Earl, 1988; Liu et al., 2024; Olson, 1990; Thombs, 1995; Tinto, 1993; Wilson et al., 2021; Zhou et al., 2016). This is true for Branchline students also. Initial assessment data for the ARP students at the start of Spring 2020 indicated that 54% attributed their academic difficulty to time management concerns, while 27% reported a lack of effective study skills as a top factor in their performance in the previous semester (Institutional Data, 2020).

However, prioritizing only the necessary academic support, the program missed the opportunity to support students in career and major decision-making. Unlike their peers who demonstrated higher academic performance, students experiencing academic difficulty often do not receive the same level of support in career development (Arbona, 2000; Collins, 2010; Mandel & Marcus, 1988). Students experiencing academic difficulty may benefit from career counseling, with research indicating such experiences yield stronger GPAs and increased self-efficacy (Grier-Reed et al., 2009; Jackson et al., 2011; Legum & Hoare, 2004). As Branchline's ARP was already well-established at the time of this study, the institution was well situated to implement and assess the impact of a career exploration course for students on academic probation.

Course Design

The course was taught in Spring 2021 in the midst of the COVID-19 global pandemic. As such, it was implemented in a fully synchronous, online delivery using the Zoom platform. The design of the career exploration course was informed by existing literature demonstrating that a focus on self-exploration, reflection of individual purpose, and reflection of personal values can foster futuristic goal setting (Dik et al., 2011). Savickas (2012) posits that all career interventions should be oriented toward future selves and should allow participants to engage in activities where they may design their future career identities.

Exploration and reflection are considered important factors in career intervention literature (Folsom & Reardon, 2003; Ran et al., 2023; Son, 2018). As such, the course was designed utilizing existing career reflection activities introduced in the literature. The model set forth by Grier-Reed and Skaar (2010) with three larger themes guiding the intervention: reflection of past and present experiences, designing goals for the future, and the intentional planning and construction of action items toward achieving future goals. Like Grier-Reed and Skaar's (2010) model, the course utilized a strength-based philosophy with assignments designed to emphasize talents and strengths in the career decision-making process. Table 1 presents the weekly topics and activities within weeks two through nine of the intervention. Week one included the consent process and an overview of the study and course.

Table 1. *Weekly Topics and Assignments within the Career Development Intervention*

Theme	Week	Topic	Activities
Past & Present	2	Exploring our past/present; What do you value?	Values activity (Dik et al., 2011; Johnson, 2017): Career genograms (Storlie et al., 2019)
Past & Present	3	Exploring strengths; Exploring priorities	Strengths-based resume & narrative (Toporek & Cohen, 2016); Protect your time assignment Pre-Assessments (CDSE-SF; AMS-C)
Study Strategies	4	Academic thoughts, behaviors, attitudes, and strategies	LASSI assessment; interpretation of inventory results; Major mapping (Brooks, 2010)
Designing the Future	5	Life design thinking	Lifeview, Workview and Collegeview (Burnett & Evans, 2018)
Designing the Future	6	Meaningful work	Meaningful work statements (Johnson, 2017); Meaningful education statements
Designing the Future	7	Personal charter and personal responsibility	Life action planning (Johnson, 2017); personal responsibility manifestos
Career Planning	8	Planning for the future	Calling Connection; Odyssey Plans (Burnett & Evans, 2018)
Career Planning	9	Anticipating the obstacles	Mental contrasting with W.O.O.P. (Oettingen, 2015)

Common academic recovery elements of time management, study strategies, and goal setting were also embedded into the curriculum of the career exploration course. The activities in the course are designed to bridge academic and professional goals. As such, reflective activities asked students to apply course content to both contexts. In week three of the course, students examined their strengths related to professional and academic environments. In another example, students examined their current priorities to decipher

where they spend their time. Students then constructed an outline defining where and how they may dedicate time to their successful efforts in both contexts. A final example is the Workview, Lifeview, and Collegeview activities, adapted from the Lifeview activity designed by Burnett and Evans (2018). Students reflected on personal, professional, and academic goals. Reflection required students to consider where these goals fit into their current lifestyle and assess strategies to prioritize based on larger goals.

Method

Participants were recruited through the ARP at Branchline University. The career exploration course was presented to prospective participants as one of the available options to fulfill the ARP expectation. During the ARP information session, a slide was presented to prospective students that differentiated the career exploration course from the traditional academic success option. The academic success course was explained as a space to explore time management and learning strategies with an introduction to campus resources. By contrast, the career exploration course was described as a course that would emphasize exploring career goals and individual purpose.

Students are never required to participate in the formal ARP. However, all eight undergraduate colleges communicate an expectation that students take advantage of the program when placed on academic probation. The information sessions informed students that choosing either the academic success or career exploration option would meet their college's expectations. All participants opted to enroll in the course. To assess participants' experience on academic probation as they participated in the career exploration course, semi-structured interviews were video and audio-recorded and transcribed verbatim. Each participant engaged in two interviews over the course of the study. Additionally, with permission from the participants, the students' artifacts produced as part of the course were collected for further analysis.

In total, 24 undergraduate students enrolled in the course, ultimately filling the course section. Within the course, 15 consented to participate in the larger study. Of these, 11 were on academic probation. The remaining four had begun the term on academic probation but had utilized the COVID-19 revised academic policies to return to good academic standing by applying the retroactive Pass/No-Credit grading option. These four elected to remain in the course despite returning to good standing.

Data Analysis

The career exploration course lasted 10 weeks. Participants in the study produced artifacts throughout. Initial interviews with participants occurred within the first three weeks of the semester, and second interviews occurred within the final two weeks of the course. In order to track the progression of student reflections and experiences, all data collected was divided into two groups based on the timing of submission. Artifacts submitted within the first five weeks of the term were analyzed together to understand student experiences at the beginning of the intervention. All artifacts submitted in the final five weeks of the course were also analyzed together to explore change over time as students progressed

through the reflective activities. The initial interview data were analyzed within the first five-week cluster, and the final interview was in the second cluster.

An iterative coding process was used to examine the student experience as part of the course. In the initial stage of open-coding, the data was broken down into smaller parts and then assigned codes. In axial coding, the second phase of analysis, those smaller codes identified in open-coding were examined to identify categories linking codes. Axial coding allowed for a wider analysis of all categories by making comparisons and identifying connections among individual participants. In the final phase of analysis, selective coding and linked codes were examined to identify patterns or larger themes. This iterative process allowed for a form of member checking. From this constant comparative coding method, larger themes or patterns emerged. Additionally, a narrative portrait of the student experience was developed for each participant. Participants were then given their written narrative describing the experiences captured during individual interviews and within their student artifacts. They were then asked to review and evaluate whether their experiences were adequately captured in the portrait and to provide feedback or clarity. This final form of member checking ensured an accurate understanding of their experiences in the study.

Finally, participants themselves chose a pseudonym with which they would appear in all written reporting to protect confidentiality. Their stories are presented below using those chosen pseudonyms.

Results

Thematic Analysis

Two larger themes were identified through the coding process regarding participants' experiences enrolled in the career exploration course while on academic probation. While students self-reported a decline in their academic motivation and difficulties navigating coursework overall, analysis of interview data and student artifacts reveals positive impacts of the course as part of students' academic recovery. These themes were renewed hope and optimism, and increased positive self-talk.

Hope and Optimism

As the semester progressed, participants described the increase in rigor and workload of their classes. Listening to these concerns in the classroom, it was suspected that the hope and optimism so prevalent in the early weeks of the course would diminish over time. However, the student artifacts and final interviews indicated that this hope and optimism were not only sustained throughout the course, but that by engaging in career reflection, these students felt a renewed sense of hope for their futures.

Early references to hope and optimism appear in the initial assessment, which participants completed prior to beginning the course. While this does not speak to their experiences as part of the course, their responses to specific open-ended questions indicated the participants' perspectives at the start of the term. When asked to define academic probation, Jim referred to it as a "second chance." He wrote:

> To me academic probation is a way to let students know that they have been given a second chance to make their grades right in the following semester. Remember this is a second chance to get grades up and be a successful student.

Participants reported increased confidence in career goals as evidence that the course was a valuable experience. Their artifacts often spoke to a sense of hope for their future careers, even if they had not narrowed down the specific career path yet. As Ash described in his post-career assessment reflection:

> By exploring other career options and our class discussions I have a better idea for my future. I also have a more positive outlook. I am excited for the future, and I believe that I will be okay.

A clear depiction of sustained hope and optimism exists in the analysis of individual participants from early artifacts and initial interviews to our final conversations and comments. In our initial interview, Jonah talked about how the uncertainty of his future made him anxious, an uncertainty that academic probation exacerbated. He did not like to think of the future often for this reason. It made him reflect on his current challenges that might impact his future. At the same time, he was excited to think about building a life after college and achieving personal and career goals once he had closed the book on academic ones. When asked how often he thought about those other goals, he answered that it depended on the day. When asked how he felt on the initial interview day, he said, “Good. More optimistic today.”

Jonah’s optimism came through at different points in the semester, particularly when he described a future with his girlfriend. In the final interview, when asked about his confidence level at that point in the semester, he said: “It’s definitely not the pit of despair I was in last spring, so I think the upward trend is there, which is encouraging.” One week later, Jonah submitted his post-career assessment reflection, where he referenced what he had learned about himself. His responses indicated growth and hope:

> I learned to put value on the attributes and characteristics I've gained from my struggles and whether or not I'm happy with how I gained them I need to see their value. I also think that I've proven to myself my desire to be here [at Branchline].

Another student, Baki, felt that his performance in the previous semester was due to “laziness.” He was determined to change this. In his letter to himself at the start of the class, Baki wrote:

> It’s the spring of your freshman year. You started off shaky, but you can recover. I didn’t take it seriously and became lazy not doing my work. Now you have turned it around and made change. It's not too late.

Baki engaged in positive behavior changes that significantly improved his academic performance. He kept me abreast of progress in his artifacts and in a check-in meeting in the middle of the term. By the time we connected for a final interview, Baki reported the changes he had seen in himself: “All my assignments and grades have improved a lot. I think I just feel more comfortable with my classes.”

Baki was not the only student who felt hopeful as a result of academic success that semester. Marigold struggled to balance schoolwork the previous semester while caring

for a family member, and started the term optimistic. In the early weeks of the career exploration course, she wrote, "Dear MARIGOLD, It is 2021. You are working towards your B.S. in biology. You have faced a lot of struggles the past year but a new chapter in your life is about to begin." Marigold implemented several behavior changes and maintained steady progress in her classes by staying ahead of assignments and seeking help often. The successes she scored early in the semester kept her motivated to continue these positive behaviors. After the final class, she noted her increased confidence and enthusiasm for the future in her post-career assessment reflection: "I am definitely more confident than beforehand. I am looking forward to my future career and am now more aware of [Branchline's] resources for me."

Like Marigold, Fiona rode the momentum of early successes, racking up even more wins as the semester progressed. She began the semester hopeful that the Spring 2021 term would be better than the previous one. In her letter to herself, Fiona documented these hopes:

> You are on the path to redemption. I know it has been a super challenging year for you, last semester did not go as planned. Although you were struggling, I know that you will redeem yourself this semester and come back with 4.0 grades.

In a mid-semester meeting, Fiona walked me through each class to share her current grades and the projects she was working on. Fiona had worked hard, and her efforts continued to pay off with strong grades and positive reinforcement from her faculty members. In her personal charter, she noted how the career exploration course had affected her:

> I got to learn more about myself, and what I wanted for my future. I believe that it only made me more confident when it comes to academic progress. I am a strong, independent young woman. I have so much to look forward to. I am glad this assignment helped me realize how exciting life will be, and why I am here today.

In some cases, the optimism participants described referenced more of a mindset change, like Ash, who was concerned about academic suspension and the fear of disappointing his family if this was the outcome of his Spring 2021 term. His letter to himself at the start of the course was both hopeful and clear. He wrote:

> I know you think that your life is over, that you cannot come back from this, that you are a disappointment and a failure. Remember you still have a shot! You can flip the script. This is all only one barrier, a hurdle you can jump if you work hard. Just focus on staying in college and doing your best to prove to the University that one bad semester does not define you as a student and does not determine your future success.

I met with Ash at multiple points in the semester to check in. He was the only participant living on campus and experienced several required quarantine periods as others in the building reported exposure to COVID-19. As a highly social individual with a close connection to his family, these periods of forced isolation were mentally and emotionally draining. Ash often felt cut off from the world. He chose not to always share with his family when he was in quarantine because he knew they would worry and ask him to come home. Ash wanted to stay in the university area and attempt to have what he considered a

traditional first-year experience. He felt that the stress of isolation hindered his academic motivation. Knowing this was a constant challenge for Ash, I asked about his confidence in his ability to successfully finish the term in our final interview. He told me:

> I want to get back in good standing but I'm OK if that doesn't happen this semester. I understand that it could be a longer process which is totally fine as long as it's, as long as you get there.

Tina also defined clear goals for turning things around in Spring 2021. She said in her protect your time action plan: "I am determined to set weekly and daily goals for myself. This will help me have a clearer picture of what needs to be done." By the end of the course, despite a significant setback, she reported a positive outlook and hope when she wrote in her post-career assessment reflection:

> I'm happy that I've had the things that have happened to me, happen. I've grown as a person, I've learned many new things, my boyfriend and I have grown closer, and I've realized who my real friends are. I'm genuinely happy.

Participants often referenced looking ahead. At the start of the term, they overwhelmingly described future uncertainty and the anxious feelings that uncertainty generated. However, many were still optimistic, like Sofia, who referenced the many possibilities she could pursue in her letter to herself. She sustained that optimism, reporting in her personal charter: "This [class] helped me do a lot of digging into my major. I am excited to see where this degree will take me because I am 100% passionate about this career and I know I can do it."

Jim was also excited to look ahead. His initial assessment demonstrated hope. Toward the end of the class, in his final reflection on the odyssey plan assignment, he confirmed that this hope had endured: "The thing that excites me the most is that I am executing my first odyssey plan and I know that the 5 year plan will change but initially it will be the same goals."

Charlie had been focused on her happiness and mental health even before she enrolled in the course, and this continued throughout the course. Her "I am" statements at the midpoint of the course demonstrated this commitment:

> I will be better at tracking my assignments and putting forth more effort towards my classes. I will get the help I need mentally to be able to succeed as best as I possibly can. I will learn what exactly I want to do with my education and career for my future. I will be happy. I will be strong. I will be present. I will be okay.

Of all the assignments, the strengths-based resume, which asked participants to create a document listing their positive traits and the ones they wished to work on, was the one Charlie found to be the most helpful. In her personal charter, she described why:

> Learning about all of my strengths has impacted my academic career by allowing me to see where I thrive. I will carry this throughout the next phase in my life, because I have gained insight on my values and strengths.

That hope generated by articulating strengths proved helpful to many participants. Bertha entered the career exploration course following a semester of juggling her full-time student status with her full-time work schedule. She showed self-compassion in her letter

to herself in the early weeks of the term, writing: "You are beginning to feel mentally drained because you wear yourself too thin between school and work. It is okay to fail as long as you continue to try no matter what is placed in front of you."

This optimism was sustained even when Bertha did not reach a point of clarity in the course. Still uncertain of what lies ahead, Bertha was excited for the future. As she wrote in her post-career assessment:

> I am most definitely nervous; college is expensive, and I do not have the funds to just take random classes until I figure out something I like. Yet, I am also excited to see what/where I decide to do in my lifetime.

Among participants, hope and optimism endured. Even in the face of significant hardships experienced in the same term (Tina, Charlie, and Jonah) and academic setbacks, the participants spoke of the future from a place of hope and optimism. In final interviews, they noted improved mental and emotional states. Khloe said, "I feel good. I'm happy. I'm happier than how I was last year at this time." C.C., frustrated by his academic difficulty when he had thrived in academic spaces for most of his life, had wrestled with the fear of failure and emerged more confident: "I definitely feel a lot better. When I found out that I had to do all this, [I thought] I may or may not pass college. I was considering a bunch of alternatives, but I feel better now."

Even with perceived failure in the academic context, participants were optimistic that they would turn things around. This persistent hope manifested another interesting shift in qualitative data as the semester progressed. The academic probation outcome resulted in feelings of personal deficit. Participants at the start of the term were quick to point out their flaws. However, the negative self-talk I often heard in early interviews slowly abated, giving way to more hopeful self-perceptions. By the end of the term, participants frequently referenced their strengths and positive qualities, leading to the rise of the second most prevalent theme, a focus on career exploration, which yields powerful positive self-talk following setbacks in the academic context.

Increase in Positive Self-Talk

Early in the course assignments, participants were asked to articulate their strengths. However, long after these initial assignments, the artifacts they produced indicated a positive perception of self. In the Intriguing Questions assignment, participants listed traits they loved about themselves, like Baki, who wrote "I love hard, [I am] outgoing, [I am] passionate. I feel people truly enjoy my presence." Bertha noted her "independent mindset" and the compassion she showed others. Like Bertha, Fiona celebrated her independence. Her response to this question of what she loved about herself also demonstrated self-compassion: "I like that I am a pretty confident person, and I know my worth. I do not settle for less. I also love that I am SO independent. I know I am doing my best, and I am enough."

Bri listed five qualities that she valued in herself. She wrote: "5 things I love about myself: (1) My drive, if I push hard enough; (2) My attention to detail; (3) My friendliness; (4) My calmness; (5) My ability to adapt quickly." Khloe also identified a list of traits she was proud

of when she wrote: “I love that I'm caring. I love that I'm a great listener so I'm usually the go-to person when someone wants to vent. I love that I stand up for what I believe in.”

These responses required students to articulate positive traits or behaviors in the first course assignment. They described concrete actions or qualities, or in some cases, they made broader statements of appreciation, like Charlie, who wrote, “I love the way that I can exceed my own expectations.” In this same assignment, participants were asked, "What are you awesome at already?” Here, they focused on specific behaviors they took pride in. Marigold responded: “Giving advice/solutions to problems, listening, prioritizing what's important to me.” Whereas C.C. took pride in his ability to “find out how things work.”

Jim knew his work ethic was admirable, a point he noted in his initial and final interviews. He also used his intriguing questions assignment to note that he could be counted on to “do my job very well and everything that entails.” He also highlighted another point of pride when he wrote: “I believe I’m a really good balance of being book smart and common sense.”

Jonah, as an adult learner, focused on his experiences and interests. He used this first assignment to highlight what he appreciated about himself: “I'm smart, I'm a jack of all trades, I have a lot of life experience for someone my age. I have a lot of hobbies.” While Pablo documented his artistic passions specifically: “I am skilled at sculpting, I'm passionate for music and am a huge audiophile, I can play the guitar, love exercise, and I feel that when I am driven I do have a strong worth ethic.” He was not alone in this. Tina also made a point to highlight her artistic side when she wrote: “I’m awesome at creating; I like to paint and do pretty much any craft under the sun.”

Other instances of positive self-talk appeared in the letter to self assignment when participants offered words of encouragement to themselves. Marigold reminded herself: “You can do anything you choose to do. You are smart and competitive. You have great people skills and a passion for medicine.”

Marigold was not the only participant to use this assignment to issue themselves important reminders as they began Spring 2021. Bri wrote to herself: “You are smart, hardworking, and thorough when you put your mind to it.” Jim offered himself this succinct reminder: “I am hard working, smart and dedicated.” C.C. reminded himself that if he committed to school, he would achieve his goals: “I know that you will commit to anything once you make it a priority, so try to make school a priority, and keep it there. Keep up some kind of academic momentum and you will succeed.” Fiona left herself words of encouragement: “You are smart, just put time and effort into it and apply yourself! You are hardworking. You can do this.”

Other participants made a point of referencing their recent setback. Tina, who had earned more than 100 credit hours total at three other institutions prior to transferring to Branchline but was still two years away from completing her degree, used this letter to remind herself that her current circumstances were a hurdle she would overcome: “its spring 2021 and you’re finally halfway to completing your bachelor’s degree. Although this

isn't the final finish line, it's something to celebrate but remember to stay focused on your goals."

Pablo encouraged himself to remember his strengths in the face of difficulty. In his letter to himself, he wrote:

> Despite some setbacks and obstacles it is good to remind yourself of some of your greatest strengths and attributes. Your strength is your ability to stay organized, allowing your mind to concentrate on the tasks at hand and not be distracted.

Ash, who knew from past successes that he could thrive in academic spaces when he put the work and time into learning, reminded himself:

> If you do your best, then you can conquer online learning and be successful because you do have that capability. You are smart. Your biggest strength is your writing skills and your organization skills. Utilize those and work to improve skills you have yet to master.

Then some participants used this assignment to highlight their strengths and remind themselves that they were continuing to grow. Charlie wrote: "I am kind, reluctant, patient, humorous, loving and above all I am strong. I will grow stronger. I am intelligent." Bertha, who frequently referenced a lack of a support system in her life, reminded herself that the work she was putting in now was already advancing her personal growth. Her letter was both self-compassionate and hopeful:

> I want you to remember how strong and determined you are, to be more than your parents were for you. These days now will set forth the doors to the rest of your life, as a psychologist, sister, and friend. Year 28 is going to be a good year for you, I hope that you realize the butterfly that is becoming of you.

These early assignments naturally lent themselves toward positive self-talk, yet positive self-talk references appeared minimally compared to the more prevalent themes in the first five-week cluster. Moreover, students had free rein on how they responded to the reflection questions within the assignments. Most participants chose to highlight not one, but multiple positive qualities. Participants were kind to themselves and offered words of affirmation and encouragement. As the term progressed and the assignments turned away from values and strengths and into career exploration, I wondered if positive self-talk references would dwindle or persist. Like hope and optimism, positive self-talk endured and eclipsed other themes as the term progressed.

Midway through the course, as participants submitted artifacts, the positive self-talk continued. In the "I am" statements completed in week five, many made a point to articulate their positive qualities again without prompting. Some referenced their social intelligence, a trait we frequently talked about in class as critical to all future professions. Fiona referred to herself as "a very kindhearted, and understanding person." Bri wrote: "I am compassionate towards others." Jim shared: "I am good with people." Marigold celebrated: "I am a great active listener." While Khloe commented, "I am empathic, I understand people's feelings, so I give good advice."

After conducting his own research, C.C. also believed his strengths would allow him to successfully achieve his career goals: “Additionally, as a strong math student with good visualization skills, I was happy to hear that I could design things and have a chance at being a mechanical engineer.”

Fiona used her life design project to define her work view. As part of this definition, she made a point to celebrate her positive qualities as a means to achieving her goals: “I believe I am a confident, young lady and can do anything I want. I know that I am enough and will reach my goals I have always reached for.” She echoed this in her odyssey plan reflection two weeks later: “I believe I am a very determined hard worker, and can accomplish everything I dream to have in my life, and on this plan.”

In the course's final weeks, participants submitted final reflective artifacts through the personal charter and post-career assessment assignments. They were also meeting with me for final interviews. In class, the discussions focused on academic challenges and difficulties in their continued online learning. Overwhelmingly, participants were frustrated by a lack of breaks in the term. The University had decided just before the term's start to move the spring recess up from its original date in mid-March to the third week of the term. The change was abrupt, and faculty had little time to adjust their course schedules. This meant that the second week in February, when students were technically on spring break, most still had assignments and tests immediately following their break. As such, participants in the present study reported that they did not receive a true break, as most were still completing important assignments or preparing for an upcoming test during the designated recess. Participants were unsurprisingly exhausted by week eight of our course, a week or so after the original date of their spring break. These feelings of burnout were referenced often in class. However, despite these frustrations and challenges, the positive self-talk was alive and well in our conversations and their work.

In our final interview, Bertha talked about the pressure she experienced at work. She told me, “I’m always the dependable one.” As the individual her employers knew they could count on, Bertha was often tapped to work longer hours or fill in when others could not. She was justifiably proud of the recognition but frustrated that her hard work produced only additional work rather than additional compensation. She admitted that she could say no, but Bertha did not want to disappoint her employers. These additional hours put undue stress on Bertha. She elaborated that the extra hours did increase her paycheck, and financially, this was hard to turn down, as Bertha continuously worked toward having a better life. A week later, she submitted her post-career assessment reflection, where she elaborated on the artifacts in the course. In reference to her strengths-based resume and career genogram, she wrote: “This activity taught me that I am already doing better than my parents and to not put so much stress on myself.”

Participants shared in these final weeks what they had learned about themselves. Marigold wrote in her personal charter: “I am more prepared than I give myself credit for.” Baki realized he could produce high-quality work when he put in the effort. His early successes beget more success. In our final interview, he told me: "Once I actually sit down and focus,

when it comes to doing my work, I can put forth like really good work. I'm showing myself that I can do more now."

Jim continued to acknowledge his work ethic. In our final interview, he described how it translated from his job to school: "I feel like I'm resilient because I'm pretty dedicated to work and school. But I didn't really realize that cause most of the time I just focused on work." While C.C., who applied and accepted a new job while enrolled in the course, had seen firsthand how he could rise to any challenge when given more responsibility, "I feel like I have the responsibility to do work the right way. Even with my job at FedEx I notice that I'm a lot more efficient than even people who have been working there for months."

For Bri, the nature of our class assignments had allowed her to produce creative artifacts. She had learned how to use the online Canva tool in the course and had been inspired by the Canva presentation templates. Bri used these templates to generate ideas and created colorful PowerPoints, which she presented as her personal charter. In our final interview, she highlighted that this was a new skill she recognized: "I think visual communication, like making PowerPoints or something creative, that's a strength of mine."

The recognition of personal qualities in these final conversations and artifacts also reflected positive self-talk. Sofia referred to her increased confidence in taking risks. In her post-career assessment reflection, she wrote: "I am a brave person. I never used this word to characterize me but I like to take risks and even if someone tells me I can't achieve something I'm always there trying to prove someone wrong."

Khloe was pleased to recognize her own social intelligence. At several points in the semester, she described how this single skill set proved useful in many contexts. She elaborated in the final interview: "One thing that I never knew until our discussion in class was [my ability] to read the room and read people. I think that's really important with what I want to do. It's interesting to pay attention to it."

The theme of positive self-talk is powerful for students following perceived failure in the academic context (Milligan, 2007; Schreiner & Anderson, 2005). As Ash put it in our final interview when describing the benefit of focusing on his positive qualities in the character strengths activity in our third class meeting: "It just made me feel good about myself at a time when I'm feeling really low about being on probation. It's nice to remember there are good qualities to you as well."

In the early weeks of the course, the theme of future uncertainty was the third most prevalent code. Participants frequently described their fears that stemmed from not having a clear path forward. In part, that uncertainty led many to choose the career exploration course as their program option. Many were questioning their goals and demonstrating self-doubt. Their artifacts in the course were full of reflection as they redefined their path. They were not merely redefining their goals. They were redefining their purpose.

Academic Outcomes

At the end of the term, seven of the 11 participants on academic probation at the start of the term returned to good academic standing (64%). The four participants who began the

course in good academic standing remained in good standing. The other four participants who had started the term on academic probation had performed well enough in the term to be eligible to remain at the institution under the indicator of continued probation. This meant that while their cumulative GPA remained below a 2.0, they had successfully earned a minimum 2.3 term GPA and would be eligible to return and continue to improve their cumulative GPA. As such, all participants (100%) in the present study were eligible to return to the institution. This success rate is important given the high attrition risk for the population overall. Students on academic probation at the institution face academic suspension if their academic performance in the subsequent semester does not improve. Comparatively, in the target academic recovery population overall, 82% of those students who completed a more traditional academic success course while on or at-risk of academic probation were eligible to return to the institution. Of the 15 study participants, 14 enrolled at the University the following semester for a retention rate of 93%. By contrast, in the comparison group of academic recovery students who completed a traditional academic success course, 72% were retained. Moreover, study participants saw larger increases in their term GPAs compared to the target population of ARP students. The academic recovery target population who completed the program in the same term demonstrated an average 1.15 term GPA increase. By contrast, the 15 participants in this study who completed the career exploration course demonstrated an average +2.03 term GPA increase from the previous semester. It is worth noting that the participants who were selected to participate in the study were representative of the total ARP population, with gender and racial/ethnic distributions differing by no more than 5–7 percentage points across major groups.

Discussion & Recommendations

The purpose of this study was to design, implement, and assess the impact of a career exploration course on career self-efficacy and academic outcomes for students on academic probation, as well as to understand their experiences within it. The course activities asked participants to engage in reflection of values and positive qualities and to explore the intersection of those with their larger career goals. Overwhelmingly, students in the course reported an appreciation for the reflective experiences. Many reported that at no point in their academic career thus far had they had the opportunity to pause and reflect. To quote one participant: “It's just a big rat race just to try to get through all the assignments and turn them over so you can get a good grade.”

The implications of this are astounding. The mission of higher education institutions is, in part, to equip students with the knowledge and skills to address society’s larger questions and engage productively as citizens. However, the mentality of the race to graduation may hinder opportunities for reflection. In theory, general education should provide this space. However, participants in the present study indicated that they felt there was no time in the institution’s timeline for exploration or reflection. They viewed the general education coursework and the courses in their chosen program of study as content to rehearse and then perform on final examinations or projects. One participant wrote about the “go-go-go” nature of college, reporting that he had learned concepts that he may or may not be able to recall later, but had not learned much about himself. Another reported that he believed

college was less about learning and more about endurance. He elaborated that his future employers would view his four-year college degree as less knowledge gained and more a demonstration of his ability to complete a goal.

All participants in the present study referenced the lack of opportunity to engage in self-reflection while in college. The fault of this challenge does not entirely fall on the shoulders of higher education, but educational leaders have the opportunity to support the reflection and growth of students. The limitations of the study may impede the ability to generalize findings across institutions of varying sizes or demographics. Yet, the lessons offer insights that are beneficial to any institution with a focus on student learning and growth. Career exploration experiences have positively influenced student self-concept (Lau et al., 2021), self-efficacy (DeWitz et al., 2009), and identity development (Astin et al., 2011). Career courses, particularly those grounded in exploring values and purpose, have successfully enhanced academic self-efficacy (Grier-Reid et al., 2009). This study confirmed these findings, with participants reporting increased career self-efficacy, sustained hope, and optimism throughout the academic term, as well as demonstrated increases in grade performance and retention. Leaders within higher education have the opportunity to positively influence student learning by designing and implementing career exploration resources beyond designated career centers or expanding career exploration resources across campus.

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