Bridging the Digital Divide and Soft Skills: Professional Development for Underrepresented Students at a Minority-Serving Institution

Apeksha Mewani[1], Elgloria Harrison[2] & Collette Brown[3]

[1] Assistant Professor, Health Equity, Administration and Technology, Lehman College, CUNY, USA

[2] Dean, School of Health Sciences, Human Services, and Nursing, Lehman College, CUNY, USA

[3] Chair, Health Equity, Administration and Technology, Lehman College, CUNY, USA

Correspondence: Apeksha Mewani, Assistant Professor, Health Equity, Administration and Technology; Lehman College, CUNY, USA. E-mail: APEKSHA.MEWANI@lehman.cuny.edu

Abstract

In response to persistent inequities in employment outcomes, professors must educate college students attending Minority-Serving Institutions to thrive in competitive industries through robust digital skills training, soft skills development, and resume-building skills. The objectives of the study were to explore students' confidence with digital tools, soft skills, and to determine the effectiveness of the workshop in preparing students for resume building and job interviews. Ten undergraduate students participated in a two-week professional workshop. Using a mixed-methods approach, data were collected on the last day of the workshop. Results of the study indicated that all participants found Grammarly to be very effective, while 90% rated Microsoft Excel and LinkedIn to be very effective. The participants rated communication, group work, and problem-solving as very effective (90%), and 80% rated public speaking, and preparation of resume and interviews as very effective. Participants unanimously rated the workshop highly. Themes that emerged from the study were instructor effectiveness, interaction with the professor and peers, and skill development. The students recommended a longer duration for the workshop. These findings suggest the transformative potential of targeted, hands-on interventions in advancing equity and employability for underrepresented college students.

Keywords: career readiness, digital literacy, minority-serving institutions, professional development, soft skills

1. Introduction

As the job market evolves with a growing emphasis on digital skills and networking, it becomes increasingly vital to equip college students for success through structured interventions that extend beyond traditional classroom learning. One effective strategy has been the introduction of professional development workshops, particularly essential for students attending Minority-Serving Institutions (MSIs) (Feng, 2024; Gasman and Conrad, 2013). MSIs are "colleges and universities across the United States and U.S. Territories enrolling significant percentages of racially minoritized undergraduate students or created with the explicit purpose of serving specific populations of racially minoritized students under various programs created by U.S. Congress" (State Higher Education Executive Officers Association, 2024, p. 4). Lehman College is a part of the City University of New York (CUNY) and is an MSI in the Bronx. MSIs play a critical role in addressing educational and economic disparities, supporting students from underrepresented backgrounds who often lack access to mentorship and valuable career resources (Gasman and Conrad, 2023).

The transition from higher education to the workforce continues to challenge students at MSIs, who often face disparities in employment opportunities and access to professional networks (Gasman and Conrad, 2023). Integrating technical training with professional development has proven to enhance students' confidence, digital literacy, and chances of employability (Talbert and Ricks-Santi, 2021). Barongan et al., (2023) highlight that hands-on learning experiences with productivity tools like Microsoft 365 significantly bolster job preparedness. It also reduces the digital divide, which was evident during the COVID-19 pandemic among Black and Hispanic students (Shilcutt, 2021). It is also crucial to incorporate soft skills training into workforce development programs to enhance student engagement and adaptability in professional environments (Hall, 2023). Although certain academic programs may not include soft skills training, acquiring these competencies can significantly impact students' performance in job interviews,

employment attainment and job retention. Integrating both technical knowledge and soft skills is essential to empower students and position them for long-term professional success.

Research indicates that students at MSIs face significant employment challenges due to limited access to career development training, digital literacy education, and networking opportunities (Freeman et al., 2021). While there is a growing focus on workforce development, the need remains to assess how structured professional development workshops can enhance students' technical skills, soft skills, and professional confidence. Previous research noted disparities in students' familiarity with professional development tools, emphasizing the need for tailored programs at MSIs (Freeman et al., 2021). Research shows that well-structured skill-building programs can significantly boost students' confidence and professional preparedness, especially at Minority-Serving Institutions where career development resources might be scarce (Gasman and Conrad, 2013). Professional development workshops have garnered recognition for their role in bridging these gaps by providing the necessary technical skills and career navigation strategies (Freeman et al., 2021). Participation in these programs is linked to increased confidence in job searching, stronger resumes, and improved interview performance (Li et al., 2022). A significant challenge for students from historically underrepresented groups is the digital divide, which affects their readiness for technology-focused roles (Barongan et al., 2023; Shilcutt, 2021). As employers seek graduates who are proficient in tools such as Microsoft 365 and data analysis software, many students enter the job market without sufficient exposure to these technologies (Talbert et al., 2021). Hands-on workshops that integrate relevant software significantly enhance students' ability to use these tools effectively, improving both their work efficiency and employability (Gasman and Conrad, 2013). Furthermore, workshops that incorporate training on Microsoft 365 and LinkedIn have shown to build confidence among MSI students, boosting their competitiveness for internships and job opportunities (Gasman and Conrad, 2013). By providing tailored support and resources, these workshops play a crucial role in preparing students for the demands of today's job market.

In collaboration with the CUNY Inclusive Economy (CIE) and the Seamless Educational Advancement to Maximize Lehman Student Success (SEAMLSS) initiative, Lehman College's Health Equity, Administration, and Technology department hosted a comprehensive workshop aimed at equipping students with essential technology and soft skills to boost their employability. SEAMLSS is an initiative funded by the Department of Education's Title V federal grant. The workshop lasted for two weeks. The first focused on mastering technology tools, such as Microsoft 365 applications (Word, Excel, PowerPoint, Teams, and Outlook) and utilized Grammarly for professional writing. Students participated in hands-on activities, including formatting documents and collaborating via cloud-based platforms. The second week concentrated on soft skills and networking, covering effective communication, teamwork, and career development. Participants engaged in self-assessments, practice presentations, and LinkedIn optimization, culminating in practical activities such as resumé crafting and interview preparation.

The workshop aimed to provide a solid foundation in technical and interpersonal competencies, preparing students, especially those from underrepresented communities, for a competitive job market. Interactive group discussions and peer feedback helped foster a sense of confidence and professional readiness among attendees. This research aimed to: (1) understand how effective students found the workshop and which elements (quality of instruction, hands-on activities, and peer collaboration) were most beneficial to them; (2) explored how the workshop affected students' confidence with digital tools such as Microsoft 365, Grammarly, and LinkedIn, as well as their development of soft skills such as communication and problem-solving skills; and (3) explored how well the workshop prepared students for resume building, and job interviews.

2. Methods

2.1 Ethics Approval

This project did not require IRB approval as it was conducted as part of a non-research pilot program for internal program evaluation.

2.2 Recruitment

All 16 students enrolled in the CUNY Inclusive Economy (CIE) and The Seamless Educational Advancement to Maximize Lehman Student Success (SEAMLSS) programs in the Health Equity, Administration and Technology department were invited to participate via email. A flyer was included in the email to describe the activities and duration of the program. Students were also offered an incentive to participate in the two-week workshop. Sixteen students completed this workshop. Each workshop session was 3 hours for 4 days per week.

2.3 Study Design

This study utilizes a mixed-methods approach to thoroughly evaluate the effectiveness of a two-week professional development workshop at an MSI, Lehman College. By blending quantitative survey responses with qualitative open-ended feedback, the study aimed to capture students' perceptions of their skill acquisition, career readiness, and the overall impact of the workshop. This comprehensive design not only integrates numerical data but also enriches the researchers' understanding of participant experiences through narrative reflections. The survey questions were based on themes such as organization of the course, activities that supported learning, effectiveness in improving skills, helpfulness of the instructor, and use of Blackboard.

This mixed-methods approach was selected to capture both the measurable outcomes of the workshop (e.g., skill confidence and effectiveness ratings) and the nuanced, subjective experiences of participants (e.g., feedback on instruction and structure). Given the small sample size and the exploratory nature of this pilot study, combining quantitative and qualitative data allowed for a richer, more contextualized understanding of the workshop's impact. This design is commonly used in educational program evaluations to validate findings through triangulation and to surface insights that numeric scores alone may not reveal.

2.4 Data Collection

Data were collected from 10 students. The survey questions were posted on Blackboard on the Discussion Board. The researchers created the settings in Blackboard to "Allow Anonymous Posts." Therefore, students' responses were anonymous. The survey questions for this pilot study were developed by the researchers. The survey consisted of open-ended questions and Likert scale questions. Researchers prioritized anonymity by not collecting any identifiable information, thus maintaining confidentiality.

2.5 Data Analysis

2.5.1 Quantitative Analysis

Data analysis was conducted using both descriptive and inferential statistical methods to assess workshop effectiveness and skill development. Measures of central tendency (mean, and standard deviation) were used to summarize students' perceptions of skill development and workshop quality. Additionally, frequency analysis helped to identify how many students rated the workshop as "Very Effective," "Effective," or "Needs Improvement." These results are reflected in Table 1. For analysis purposes, student responses were collapsed into three categories: "Very Effective" (coded as 5), "Effective" (coded as 4), and "Needs Improvement" (coded as 3), reflecting the actual distribution of responses. No ratings were recorded in the lower ranges of the original 5-point scale.

2.6 Qualitative Analysis

The research adopted a thematic analysis approach (Braun and Clarke, 2006), carefully examining open-ended responses. Researchers began by coding the feedback into key categories, including "effective teaching methods," "engagement with technology," and "areas for improvement." To enrich the analysis further, the researchers cross-referenced qualitative findings with quantitative data, ensuring that the emerging themes aligned with statistical trends in student ratings. This integration of qualitative and quantitative data creates a robust framework for evaluating the workshop's impact while also pinpointing opportunities for future enhancements.

3. Results

Ten students participated in the research. The results of the study are separated into quantitative results (descriptive statistics) and qualitative results (thematic statements with quotes). Participants expressed overwhelmingly positive sentiments about the two-week professional development workshop.

3.1 Quantitative Results

3.1.1 Perceived Effectiveness of the Workshop

Without exception, all surveyed respondents (N = 10) rated the workshop as "Excellent," which highlights their satisfaction with the program's content, structure, and overall impact. Insights shared by students reinforced these evaluations, with many pointing to the engaging instructional methods, practical hands-on activities, and meaningful interactions with facilitators as standout elements of the experience.

3.1.2 Confidence in Digital Tools and Development of Soft Skills

Across all skill areas, participants rated the workshop as highly effective (Table 1). Every participant reported a significant boost in confidence and proficiency with digital tools, particularly Microsoft 365, Grammarly, and LinkedIn. For example, the average confidence score for Microsoft Excel was M = 4.9, SD = 0.32 on a 5-point scale, indicating a high level of perceived improvement. Similar trends were observed for Grammarly (M = 5.0, SD = 0.00) and LinkedIn (M = 4.9, SD = 0.32), reflecting strong digital skill gains overall.

Nine participants (90%) described their growth in soft skills development, particularly communication, teamwork, and problem-solving, as "Very effective," while one labeled it simply "Effective." Likert-scale ratings also indicated strong gains in soft skill domains. For example, communication skills were rated M = 4.9, SD = 0.32, and teamwork received an average score of M = 4.9, SD = 0.32. Eighty percent of the participants rated their public speaking skills as very effective, (Table 1).

3.1.3 Resume Building

Eighty percent of the participants rated their resume writing and interview skills as very effective (Table 1).

Table 1. Participants Self-Reported Confidence and Skill Development (N=10)

Specific Skills or Tools	Very Effective	Effective	Needs Improvement	x̄	SD
Digital Tool Proficiency					
Microsoft 365	9	1	0	4.9	0.32
Grammarly	10	0	0	5.0	0.00
LinkedIn	9	1	0	4.9	0.32
Soft Skills Development					
Communication	9	1	0	4.9	0.32
Teamwork/Group Work	9	1	0	4.9	0.32
Problem-Solving	9	1	0	4.9	0.32
Public Speaking	8	2	0	4.8	0.40
Receiving & Applying Feedback	8	2	0	4.8	0.40
Career Preparation					
Resume Building & Interview Practice	8	2	0	4.8	0.40

3.2 Qualitative Analysis

Students' overall experience of the workshop was summarized in several themes through pattern recognition, based on Braun and Clarke's (2006) method. Overall themes showed that students frequently highlighted their improvements in specific technical tools such as Microsoft Excel and LinkedIn, while also noting enhanced confidence in public speaking, resume writing, and interview preparedness. Notably, the theme of instructor feedback emerged as particularly impactful, with students describing how constructive critiques helped guide their professional growth. The emphasis on collaborative learning and communication aligns closely with the workshop's design, which centered on practical engagement and peer interaction.

Theme 1: Perceived Effectiveness of the Workshop: Instructor Effectiveness

As noted in the quantitative analysis, all students rated the workshop as "Excellent." A common theme in participant feedback was praise for the instructor's approachability and supportiveness, which many noted was a crucial factor in their readiness for resume building, networking, and job searching. Participants highlighted how personalized career guidance effectively addressed their unique professional development needs, contributing significantly to their overall career preparedness and self-confidence. Some sample quotes include, *"The workshop was informative; the instructor was patient, particularly with Microsoft Excel skills", and "I really liked how the professor engaged all students, especially helping us improve public speaking skills","Helpful and supportive", "The professor is very helpful and her agenda for every class was clear." "I really enjoyed how helpful and kind [the Professor] was."*

Theme 2: Soft Skills: Interaction with Professor and Peers

Participants valued interactive elements and receiving consistent feedback. Sample feedback includes *"Ongoing feedback"* and *"I love how we'll always get feedback on what we did wrong."* Another student mentioned, *"I really liked how the professor engaged all the students."* When asked about the part of the workshop they enjoyed, some students expressed their appreciation for the social and collaborative atmosphere of the workshop. They mentioned "*workshop community"* and "*My favorite part of the workshop were the people I met."*

Theme 3: Practical Skill Development

Many students highlighted that their skill-building in Excel, resume writing, and presentations were enhanced. Some students stated that the new skills learned were transformational to their development. Some quotes were *"New skills learned" "It was very informative, and I learned new skills that will help me." "I liked how supportive the instructor was with resumes."*

3.3 Areas for Improvement and Student Recommendations

Constructive suggestions for improvement also emerged from the group. Several respondents expressed a desire for longer or additional sessions, allowing for more in-depth practice and engagement with the topics covered, as an indication of their high level of interest and investment in the workshop content. A student wrote "*I wish the workshop lasted more than two weeks; we could have gained even more.*" Another student expressed "*The daily duration felt short; more extended sessions would have allowed deeper learning.*" Another student shared: *'I did not like that the workshop was only two weeks.*

4. Discussion

The findings from this study illuminate the profound impact of structured, hands-on professional development workshops in fostering both technical and soft skills among students at Lehman College. The positive feedback received aligns with existing research, highlighting the critical role of instructional quality, interactive activities, and personalized support in effectively facilitating professional growth, particularly within diverse student populations (Gasman and Conrad, 2013). The quantitative results *(*Table 1) reinforce that the workshop meaningfully improved both technical proficiency and interpersonal skills valued in the workforce.

The self-reported development in participants' confidence and proficiency with digital tools aligns with contemporary literature, highlighting digital literacy as an essential tool for career success. As noted by Li et al. (2022), practical demonstrations and real-time instructor feedback are instrumental in enhancing digital proficiency, reinforcing that the methodologies employed in this workshop are well-founded in established best practices. Furthermore, the self-reported advancements in soft skills emphasize the necessity of interactive and collaborative learning experiences in cultivating competencies highly valued by employers. The emphasis on peer collaboration and engaging problem-solving tasks among participants reflects findings from Freeman et al. (2021), illustrating how structured collaborative opportunities markedly bolster interpersonal and problem-solving abilities in students, particularly in MSIs. These themes highlight the workshop's alignment with best practices in inclusive career readiness programming.

Finally, one of the most impactful takeaways was the instructor's approachability and the personalized career guidance provided to participants. This aspect emerged as a significant factor in enhancing career readiness. Similar studies by Freeman et al. (2021) highlighted the critical role of personalized mentoring and instructor accessibility in preparing students for transitions into their professional lives, suggesting the workshop's instructional methods align effectively with evidence-based practices.

5. Implications

Many students from underrepresented backgrounds, such as first-generation college students, often start their academic journeys at a disadvantage due to limited access to crucial digital resources and professional networks. This workshop embarked on the digital literacy gap head-on by providing immersive, hands-on training in Microsoft 365 applications and LinkedIn navigation, skills that are increasingly essential in today's job market. This aligns with the findings of Barongan et al. (2023), who illustrated that technology workshops significantly enhanced job preparedness for underrepresented students in STEMM fields. Similarly, Li et al. (2022) emphasized that interactive teaching methods can boost students' confidence in their digital skills. However, the workshop did not focus only on technical skills, but also on soft skills like communication, teamwork, and public speaking, and played a vital role in preparing students for real-world job situations. Hall (2023) discovered that structured training in soft skills significantly elevates

networking capabilities and career outcomes for Black and Hispanic students, particularly those who may be less familiar with workplace expectations.

Mentorship also emerged as a crucial factor for student success. Participants consistently praised their instructor for providing encouragement and personalized feedback, echoing the research by Talbert et al. (2021), which pointed to the positive impact of culturally responsive mentorship in enhancing confidence and academic engagement. Likewise, Freeman et al. (2021) highlighted how accessible faculty are instrumental in supporting underrepresented students' career paths. The workshop also placed a significant emphasis on early career preparation, with activities like resume building, interview simulations, and LinkedIn optimization. This approach mirrored findings by Gasman and Conrad (2013), who noted that Minority-Serving Institutions that implement structured early-career development programs often see better placement rates into high-skill professions for their students.

Despite these valuable gains, participants expressed the need for longer workshop durations to deepen their engagement. This concern reflects broader discussions within literature on how short-term interventions often fall short in fostering long-term outcomes. In fact, Feng (2024) found that extending career modules over an entire semester led to more sustained skill improvements for underrepresented students in aviation. Drawing on this wealth of evidence, the workshop's structure can serve as a model for MSIs looking to bridge equity gaps. By integrating digital literacy training, soft skills development, culturally competent mentorship, and consistent career coaching early in the college experience, these institutions can better prepare all students for success after graduation.

6. Limitations

Although this study utilized a mixed methods approach, there was a notable limitation due to the small sample size for the quantitative section. Only 10 students participated in the study, potentially limiting advance statistical analyses. While these findings are encouraging, it is important to note that this study was exploratory in nature and based on a small, non-randomized sample within a single Minority-Serving Institution. As such, the results are not widely generalizable.

7. Recommendations

Looking ahead, future iterations of the workshop could thoughtfully consider participants' requests for extended or add additional sessions and attempt to recruit more students who can benefit from such a workshop. This would also provide more data to more accurately reflect the student population. Such enhancements could deepen the engagement and extend the positive impact of skill acquisition. This aligns with broader literature advocating for sustained, immersive learning experiences to optimize professional development outcomes (Gasman and Conrad, 2013; Li et al. 2022). Such positive feedback from students can serve as valuable evidence to support the expansion of this initiative into other departments and can also help to secure ongoing funding from stakeholders and sponsors.

8. Conclusion

Lehman College is the recipient of a Title 5 federal grant from the Department of Education, that supports disadvantaged students. One of the main goals of the Title V grant is to enhance employability and skill readiness among students. This workshop provided students with the competencies and skills they need to increase their chances of being employed in the workforce. While providing a workshop with hands-on skills was important, this study also demonstrated that the professor's delivery of the materials and mentorship were key to students' success. This paper aims to contribute to ongoing conversations about improving student development, closing digital literacy gaps, and enhancing workforce preparation efforts at MSIs. These outcomes can inform the design and adaptation of similar interventions in broader contexts, including other departments, institutions, or educational pipelines seeking to enhance equity-focused career development initiatives.

References

Barongan, T., Neikirk, K., Shao, B., Vue, N., Spencer, E. C., & Harris, J. (2023). Project Strengthen: A STEMM-focused career development workshop to prepare underrepresented minority students for graduate school. *iScience, 26*(8), 107839. https://doi.org/10.1016/j.isci.2023.107839

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Feng, Y. (2024). Board 1: Empowering underrepresented minority students in one aviation program: Integrating a national airport design competition into the curriculum. In Proceedings of the 2024 ASEE Annual Conference & Exposition. *American Society for Engineering Education*. https://doi.org/10.18260/1-2--46654

Freeman, S., Barnett, N. C., & Freeman Jr., S. (2021). Higher education as a field of study at minority-serving institutions. *The Western Journal of Black Studies, 45*(1), 12-25.

Gasman, M., & Conrad, C. (2013). *Minority serving institutions: Educating all students*. Penn Center for Minority Serving Institutions. https://vtechworks.lib.vt.edu/bitstreams/ef829dd2-66e1-4369-9952-65c83176408f/download

Hall, N. (2023). Cultural wealth, social capital, and career outcomes: Black alumnae in a minority-serving institution. *NACE Journal.* https://www.naceweb.org/diversity-equity-and-inclusion/trends-and-predictions/cultural-wealth-social-capital-and-career-outcomes-black-alumnae-in-a-minority-serving-institution/

Li, H., Pineda, R. M. G., Jin, K., & Goswami, J. S. (2022). Improving minority students' career readiness through enhanced senior design experiences. In *Proceedings of the ASEE Gulf Southwest Conference. American Society for Engineering Education*. https://peer.asee.org/improving-minority-students-career-readiness-through-enhanced-senior-design-experiences

Shilcutt, K. (2021). *Digital divide disproportionately affected education for Black and Hispanic children during pandemic*. https://news.rice.edu/news/2021/digital-divide-disproportionately-affected-education-black-and-hispanic-children-during#:~:text=While%20only%20one%20in%2010,the%20author%20of%20the%20brief.

State Higher Education Executive Officers Association. (2024). *Overview of Minority-Serving Institutions in the United States*. https://sheeo.org/wp-content/uploads/2024/09/MSI-White-Paper.pdf

Talbert, P. Y., Perry, G., & Ricks-Santi, L. (2021). Challenges and strategies of successful mentoring: The perspective of LEADS scholars and mentors from Minority-Serving Institutions. *International Journal of Environmental Research and Public Health, 18*(11), 6155. https://doi.org/10.3390/ijerph18116155

Copyrights