How Do Undergraduate Students Use ChatGPT for Career Development? An Explanatory Mixed-Methods Study of Employability-Related Activities

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Abstract

Generative artificial intelligence (GAI) tools are increasingly used in higher education to support writing, learning, and productivity, yet less is known about how students use these tools in career development contexts. This explanatory sequential mixed-methods study examined how undergraduate students in a College of Liberal Arts and Sciences at a Midwestern research-intensive university use ChatGPT for employability-related activities. Guided by the Technology Acceptance Model and an exploratory extension incorporating perceived ethical considerations, the quantitative phase (n = 102) examined patterns of use and predictors of perceived usefulness, while the qualitative phase (n = 25) explored how students engaged with ChatGPT in practice. Findings showed that students most commonly used ChatGPT for resume and cover letter development, workplace communication, and interview preparation. Students described ChatGPT as an accessible and useful brainstorming and revision tool, but also expressed concerns about accuracy, authenticity, and overreliance. Rather than replacing human judgment or career support, students primarily used ChatGPT to refine ideas, rehearse responses, and improve professional materials. These findings extend research on GAI in higher education by showing how students evaluate and integrate AI-generate content in high-stakes career preparation contexts. Implications for career development practice include strengthening AI literacy, ethical guidance, and critical evaluation skills in employability preparation.

Keywords*:* ChatGPT, generative artificial intelligence, career development, technology acceptance model, AI literacy

Introduction

Career preparation increasingly unfolds in digital environments, where students rely on online tools to support tasks such as resume development, interview preparation, and professional communication. Employability is broadly defined as “having the capability to gain initial employment, maintain employment, and obtain new employment if required” (Hillage & Pollard, 1998, p.1). In this study, the term is used interchangeably with career development to refer specifically to job search and application tasks. These activities require students to translate experiences into credible professional narratives, manage self-presentation, and navigate high-stakes career contexts (i.e., interviews, networking, and job applications) with confidence. As the job market evolves and becomes more complex due to the rise of digital technologies, understanding how individuals engage with computer-mediated career tools has become increasingly critical, particularly for undergraduate students in liberal arts and sciences (LAS) programs.

Recent research has emphasized the importance of career adaptability, workforce competency alignment, and technology readiness in navigating increasingly complex school-to-work transitions (Granillo-Velasquez et al., 2025; Lin et al., 2024; Pham Thi, 2025; Ryu & Jeong, 2021). Collectively, this work suggests that contemporary career development is no longer defined solely by occupational knowledge or job-search strategy, but also by students' ability to navigate uncertainty, translate experiences into professional language, and adapt to digitally mediated career environments. Although prior research has examined technology use and employability development among university students, few studies have focused explicitly on students in LAS majors. For example, Pham Thi (2025) reported a disciplinary distribution including Social Sciences and Humanities (5.8%), Management and Design (22.4%), Science and Engineering (37.7%), and other areas (8.6%), yet did not differentiate by academic domain. While LAS majors are inherently diverse and may be partially represented within social sciences, humanities, and certain science disciplines, these broad categorizations do not capture the distinctive career development challenges of LAS students.

The present study addresses this gap by examining how undergraduate students engage with ChatGPT as a career development support tool and how they evaluate usefulness, credibility, and ethical considerations when using ChatGPT in career-related contexts. LAS students often navigate less linear career pathways than peers in business and engineering, which may heighten uncertainty and increase reliance on external support tools during career preparation (Fong, 2019). Prior research indicated that LAS students are less likely to engage with university career resources, frequently emphasize the need for additional resources, and often feel underprepared for post-graduation employment compared to their peer in business and engineering disciplines (Fong, 2019). Consistent with these trends, post-graduation survey data at a Midwestern research one (R1) university revealed that 90% of LAS students had secured a first destination (e.g., employment, continuing education, or volunteering) compared to 96% in business and 94% in engineering (Illini Success, 2025) with similar patterns also evident at other institutions (see Career Outcomes at Michigan State University, n.d.; First Destination Outcomes at Marquette University, n.d.). These disparities highlight the relevance of examining how LAS students use career-support tools and how such use shapes perceptions of confidence, credibility, and agency in career-related decision-making.

Emergence of Generative Artificial Intelligence in Career Development

GAI tools are increasingly integrated into career services programming (see Career Education at Stanford, n.d.; Career Services at the University of Richmond, n.d.; Career Services at UW-Madison, n.d.; Dartmouth Center for Career Design, n.d.; Northwestern Career Advancement, n.d.; The Grainger College of Engineering Career Services, n.d.), with platforms like ChatGPT offering on-demand, scalable support for tasks such as resume writing, interview preparation, and career advising (Flink et al., 2024; Koukou & Stavrou, 2024; Ponce, 2024; Waikar et al., 2024). Compared to traditional career counseling, GAI offers accessibility advantages that may be especially relevant for students with limited access to personalized support. Students' use of GAI for resume refinement, communication drafting, and interview rehearsal may also reflect efforts to align their materials with labor market competency demands (Granillo-Velasquez et al., 2025). This emerging work suggests that GAI is becoming embedded within the broader ecosystem of career development resources, particularly as students seek scalable and low-

friction support for employability-related tasks. However, empirical research remains limited in explaining how undergraduate students integrate GAI into concrete career preparation behaviors.

ChatGPT as a Focal Case

ChatGPT (Generative Pre-trained Transformer) has emerged as one of the most widely used GAI tools in higher education. Prior research has examined its role in academic writing (Zhou & Huang, 2023), language learning (Baskara & Mukarto, 2023), and student productivity (Fauzi et al., 2023). Collectively, these studies show that ChatGPT is reshaping how students write, revise, and seek support in educational contexts. However, its role in career preparation remains comparatively underexamined. This omission is notable because career preparation differs from classroom use in important ways: it is often more evaluative, more identity-relevant, and more consequential for how students are judged by others.

In career contexts, ChatGPT can support a wide range of tasks, including resume writing, interview preparation, workplace communication, and professional branding (OpenAI, 2024; Smith, 2023). Yet its value in these contexts depends on more than functionality alone. Career preparation requires students to evaluate whether the AI-generated content is not only useful, but also credible, authentic, and appropriate for professional self-presentation. Smith (2023) noted that AI-generated responses may serve as a useful starting point for career exploration, but should be critically evaluated for relevance and accuracy. Similarly, concerns about overreliance, misrepresentation, bias, and outdated information raise important questions about how students regulate trust and agency when using AI in employability-related contexts (Wall et al., 2025; Wilson et al., 22). In this sense, ChatGPT functions as more than a productivity tool; its value depends not only on whether students adopt it, but on how they evaluate, adapt, and regulate its use in career development contexts. This distinction is central to the present study, which examines not only whether students' use of ChatGPT for career development but how they interpret and manage AI-generated output in contexts shaped by credibility, authenticity, and professional judgment.

Theoretical Framework

The Technology Acceptance Model (TAM) is a widely used framework for examining individuals' acceptance and use of technology (Davis, 1989). The model proposes that perceived usefulness (PU) and perceived ease of use (PEU) shape individuals' attitude toward use (ATT) and, ultimately, their behavioral intention (BI) to adopt a technology (Davis, 1989). PU refers to the degree to which a person believes that using a particular system enhances their performance, whereas PEU refers to the extent to which using the system is free of effort. In the context of ChatGPT for career development, PU reflects students' perceptions that ChatGPT enhances their employability or career readiness, while PEU refers to how intuitive or user-friendly they perceive the platform to be for employability-related activities.

Recent studies suggested that TAM is a robust model for examining students' perceptions of usefulness and AI use (Liu et al., 2022; Saif et al., 2024; Yilmaz et al., 2023; Zou & Huang, 2023). Its utility lies in explaining why students adopt emerging technologies and how beliefs about efforts and utility shape continued engagement. For this reason, TAM provides useful

foundation for examining how undergraduate LAS students perceive and use ChatGPT for employability-related tasks. However, TAM is less equipped to explain how students evaluate trustworthiness, authenticity, and responsible use in contexts where AI-generated output directly shapes professional self-presentation.

To address this limitation, the present study supplements TAM with perceived ethical considerations (PEC) (Appendix A) as a parallel evaluative dimension. Rather than treating PEC as a conventional TAM antecedent, the construct is used to capture how students reflect on the appropriateness, trustworthiness, and responsible use of AI-generated content in career-related contexts. This extension responds to growing concerns about bias, inaccuracy, and ethical ambiguity in GAI use (Al-kfairy et al., 2024; Wall et al., 2025; Wilson et al., 2022). Conceptually, this framing retains TAM's explanatory value for technology adoption while extending it to account for the evaluative judgments that become of significance when AI is used in professional contexts.

Guided by TAM, the present study conceptualizes PU as an endogenous belief shaped by PEU, ATT, BI, perceived credibility (PC), perceived social influence (PSI), and PEC. This extended framework reflects the assumption that students' perceived perceptions of ChatGPT's usefulness in career preparation are shaped not only by usability and adoption-related beliefs, but also by how credible, socially acceptable, and ethically appropriate they perceive its use to be. While ATT and BI are traditionally considered outcomes of PU in TAM, their inclusion here reflects an exploratory extension acknowledging that continued use and positive behavioral intention toward ChatGPT may also reinforce perceptions of usefulness, a reciprocal dynamic recognized in prior technology adoption research (see Marangunić & Granić, 2015; Venkatesh et al., 2003).

Research Gaps and Purpose of the Study

Recent studies highlighted that GAI tools can complement traditional learning approaches and support students' development of in-demand skills, enhancing their readiness for an evolving job market (Ganguli, 2025). However, students' attitudes toward GAI usage varied by disciplinary background (Yilmaz et al., 2023). Although GAI is increasingly used in higher education, empirical research remains limited in explaining how students use these tools in career preparation and how they evaluate AI-generated output in professional contexts. Existing studies rarely examine how students integrate these tools into concrete career preparation behaviors such as resume development, interview preparation, or professional communication. Limited evidence also exists on how students engage with these tools, perceive their usefulness, and balance efficiency with ethical and authentic career preparation. Notably, Pham Thi (2025) called for future research to validate technology-readiness models across diverse student populations and contexts.

To address this gap, the present study, situated in a College of Liberal Arts and Sciences at a public R1 university, examined undergraduate students' utilization of ChatGPT for employability-related activities through two guiding research questions:

1. What factors shape undergraduate students' perceived usefulness of ChatGPT for career development?
2. How do undergraduate students engage with GAI in their career development?

Grounded in the TAM, the first research question guided the quantitative inquiry by examining the factors influencing students' perceived usefulness of ChatGPT for employability preparation and analyzing patterns of self-reported usage across student groups. The second research question informed the qualitative phase, serving as a follow-up to the quantitative findings, to gain deeper insights into how undergraduates engage with GAI. By integrating these perspectives, the study contributes to understanding how undergraduate students utilize GAI tools for employability preparation. The findings also provide actionable insights for career development professionals and higher education institutions seeking to support AI literacy, ethical awareness, and responsible innovation in career planning.

Methods

Research Design

The purpose of this study was to explore to what extent and how undergraduate students in a College of Liberal Art and Science at a Midwestern R1 university use and interact with ChatGPT for their career development. DeCuir-Gunby and Schutz (2016) suggested the use of mixed methods designs for the triangulation and expansion of research problems. Consequently, an explanatory sequential mixed methods design was adopted, which included two phases of data collection. The quantitative phase (Phase 1) focused on identifying the acceptance of ChatGPT for employability-related activities prior to expanding upon the findings in the qualitative phase (Phase 2). In Phase 1, data related to students' acceptance and use of ChatGPT for their employability-related activities was collected through surveys to gather insights into students' acceptance and utilization on a broader scale. Then, in Phase 2, focus groups were conducted to contextualize and deepen understanding of these patterns by exploring how students interpreted, evaluated, and integrated AI-generated content into career-related self-presentation. Utilizing a mixed methods approach enabled the triangulation of findings, while also offering an opportunity for a thorough exploration of the topic.

Phase 1: Quantitative Inquiry

Sample and Data Collection

For Phase 1, current undergraduate LAS students at a Midwestern R1 university were recruited through flyers and emails distributed to students enrolled in LAS courses. The flyers and emails included a QR code to an online survey published on Qualtrics. The recruitment process adhered to the ethical guidelines established by the university's Office for the Protection of Research Subjects. As recruitment announcements were shared with multiple LAS courses, campus-wide listservs and on-campus flyers, an exact response rate could not be determined. However, of the total respondents who accessed the survey (N = 119), 102 valid (i.e., complete responses and completed by undergraduate students in LAS) survey responses were recorded between August 2024 and January 2025, resulting in a valid-to-total-response ratio of 87.93%. On average, students took approximately three minutes to complete the survey. In terms of class standing, 40.20% of the participants were Freshmen (n = 41), 13.70% Sophomores (n = 14), 31.40% Juniors (n = 32), and 12.70% Seniors (n = 13). Two participants did not indicate their year in

school. Further, 53.92% identified as female (n = 55), 44.12% as male (n = 45), and 0.20% as non-binary/other (n = 2).

Measures

The survey instrument consisted of five demographic items and 21 Likert-type items related to TAM assessing the perceived usefulness, perceived ease of use, perceived credibility, perceived social influence, behavioral intentions, and attitudes toward ChatGPT for career development. Items were adapted from Davis (1989), Edmunds et al. (2012), Lee and Lehto (2013), and Rafique et al. (2020), measured on 5-point or 7-point Likert scales.

Additionally, a three-item measure was developed to assess students' perceived ethical considerations (PEC). Participants indicated their agreement with statements about discussing AI implications with peers, verifying AI-generated information before use, and recognizing potential biases in AI-generated responses. Items were conceptually informed by prior research on AI ethics and responsible technology use (Wall et al., 2025; Westman et al., 2021; Wilson et al., 2024) and followed established practices (DeVellis & Thorpe, 2022; Hinkin, 1998). The full survey is included in Appendix A. All constructs consisted of three items and reported acceptable levels of internal consistency (PU α = .89, PEU α = .91, ATT α = .86, BI α = .90, PC α = .93, PSI α = .81, PEC α = .73). The overall scale reliability was .95.

Data Analysis for Phase 1

A total of 102 sets of completed surveys were retained for quantitative analysis. All data management and analyses were conducted in R Statistical Software (v.4.4.2; R Core Team, 2021). Descriptive statistics, including means and standard deviations, were calculated for all variables to summarize key trends. To examine differences in ChatGPT usage, we performed group-based analyses by academic year and frequency of use to identify patterns in AI-assisted employability-related activities, ensuring that variations across student populations were systematically assessed. Specifically, we portrayed ChatGPT usage rates as weighted percentages to ensure comparability despite unequal group sizes across academic years. To account for the use of mixed Likert scale formats (5-point and 7-point) across constructs, all subsequent analyses employed standardized coefficients to ensure comparability of effect sizes across variables.

Prior to the main analyses, all standard ANOVA and regression assumptions were examined, including multicollinearity (correlation coefficients and VIF), linearity, normality of residuals, homogeneity, and normal distribution of variables. No significant violations were identified. To inform the subsequent focus group discussions, we conducted targeted analyses of employability preparation engagement, assessing the most utilized AI-supported career tasks. Descriptive analyses as well as insights from a one-way ANOVA were used to highlight differences in employability-related activities across student groups. Additionally, we conducted a multiple regression analysis with a backwards elimination approach as an exploratory model-building technique to identify a parsimonious set of predictors associated with *perceived usefulness.* Following this, the variable with the highest p value was removed from subsequent models. To confirm the appropriateness of deleting a predictor in the analysis, each model and

subsequent model were analyzed using the *F*-test for change in R^2. This process was repeated until the *p* value in the *F*-test for change in R^2 was $p < .05$, indicating that deleting a predictor was no longer statistically supported. To assess whether the sample size was adequate for the regression analysis, an a priori power analysis was conducted using G*Power. For a model with six predictors (medium effect size of .15, $\alpha = .05$, and power = .80), the required sample size was 98. The final sample of 102 met this threshold. Aligned with the mixed methods design, these insights guided the development of the qualitative inquiry aimed at exploring students' perceptions of GAI in employability-related activities and should only be interpreted in conjunction with the qualitative findings.

Phase 2: Qualitative Inquiry

Research Participants and Data Collection

At the end of the survey in Phase 1, participants ($n = 71$) submitted their email addresses in a tool independent from their responses, if interested in subsequent research participation. These 71 participants were contacted through email with an invitation to participate in a focus group in Phase 2. In total, 25 LAS undergraduate students participated in virtual focus group meetings on Zoom of up to six participants each, representing diverse majors, genders, and years in school. Data collection commenced in February 2025 and concluded in March 2025. Unexpected cancellations resulted in three sessions conducted as individual interviews using the same protocol with session lengths ranging from 20 and 70 minutes. The focus group protocol was drafted based on the results of Phase 1 and included open-ended questions about students' perceived usefulness, usage patterns, and barriers to ChatGPT use for employability-related activities . Appendix B provides the focus group protocol. The focus group setting allowed students to be surrounded by peers to feel more comfortable in a collaborative environment, while also offering students an opportunity to share their unique experiences with each other, therefore serving as a peer-learning opportunity.

Data Analysis for Phase 2

The focus group recordings were transcribed verbatim with the help of the Zoom transcripts, and the data were analyzed using a thematic analysis approach informed by Braun and Clarke (2006). Since the focus groups were designed as the second phase of the explanatory mixed-methods research, TAM was applied as the primary theoretical framework to guide the qualitative data analysis and inform the development of initial themes. Additionally, PEC was incorporated as an additional construct to understand students' ethical concerns while using ChatGPT and to capture students' reflections on the appropriateness, trustworthiness, and ethical implications of using ChatGPT in employability-related contexts. Two co-coders, who are advanced doctoral researchers in the field of Human Resource Development with expertise in career development, collaboratively analyzed the data. Following transcription and data familiarization, the two coders independently reviewed the transcripts and utilized an inductive approach to identify key themes within participants' stories. The coders then compared and refined their results through iterative discussion and resolved discrepancies through consensus. Themes were developed through comparison across transcripts and iteratively refined to ensure internal coherence and

conceptual distinctiveness. To strengthen trustworthiness, coding decisions and theme development were documented throughout the analytic process.

Results and Findings

The purpose of this study was to explore to what extent and how undergraduate students in a College of Liberal Art and Science at a Midwestern research university utilize ChatGPT for their employability-related activities. This understanding is based on the analysis of data gathered through surveys (n = 102) in Phase 1 and focus groups (n = 25) in Phase 2.

Quantitative Results (Phase 1)

Descriptive Statistics

Descriptive statistics, including mean, standard deviation, skewness, kurtosis, correlation coefficients and VIF were computed for all study constructs. These constructs were derived by averaging their respective individual variables. The analysis of the correlation coefficients indicates statistically significant correlations between study variables. Table 1 and Table 2 present the results of the analyses for all study variables.

Table 1
Descriptive Statistics of Study Constructs Based on 5- and 7-point Likert Scales

Variable	Mean	*SD*	Skewness	Kurtosis
PU	3.63/5.00	1.00	-1.23	1.31
PEU	5.33/7.00	1.34	-1.16	1.71
ATT	3.60/5.00	0.95	-0.85	1.08
BI	4.80/7.00	1.70	-0.88	0.11
PC	3.04/5.00	0.98	-0.24	0.01
PSI	3.31/5.00	0.92	-0.26	0.25
PEC	3.95/5.00	0.85	-1.31	2.21

Note. Means are reported based on raw scores on 5-point or 7-point Likert scales. *SD* = standard deviation, PU = perceived usefulness, PEU = perceived ease of use, ATT = attitude toward using ChatGPT, BI = behavioral intention to use ChatGPT, PC = perceived credibility, PSI = perceived social influence, and PEC = perceived ethical considerations; skewness < |2.00|, kurtosis < |7.00|

Table 2
Correlation Coefficients and VIF

Variable	PU	PEU	ATT	BI	PC	PSI	PEC
PU	1.00						
PEU	.68***	1.00					
ATT	.74***	.73***	1.00				
BI	.70***	.71***	.72***	1.00			
PC	.64***	.66***	.66***	.70***	1.00		
PSI	.53***	.58***	.66***	.65***	.68***	1.00	
PEC	.36***	.49***	.53***	.36***	.30**	.49***	1.00

VIF	-	2.84	3.10	2.93	2.70	2.50	1.63

Note. PU = perceived usefulness, PEU = perceived ease of use, ATT = attitude toward using ChatGPT, BI = behavioral intention to use ChatGPT, PC = perceived credibility, PSI = perceived social influence, and PEC = perceived ethical considerations; VIF < 6.00, ** $p < .01$, *** $p < .001$.

ChatGPT Usage Across Groups and Year in School

A frequency analysis was conducted to examine ChatGPT usage across different student groups. The distribution of responses indicated that about 81% of students have used ChatGPT for employability-related activities at least once in the 12 months leading up to the study ($n = 83$), while 17.60% have never used it ($n = 18$). One student did not disclose the frequency of their ChatGPT usage. Additionally, 50% of students have used ChatGPT at least four times ($n = 51$), and 21.57% have used it more than ten times ($n = 22$). Further, a one-way ANOVA on *perceived usefulness* showed a statistically significant difference between usage groups ($F[4, 95] = 2.59$, $p = .042$, $\omega^2 = .06$). A Tukey-adjusted post-hoc pairwise comparison confirmed that frequent ChatGPT users (i.e., ten or more times) indicated significantly higher *perceived usefulness* than those who never use it ($t(95) = -2.96$, $p = .031$). All remaining groups did not indicate any statistical significance ($p > .05$).

Looking at usage patterns across years in school (Table 3), 30.77% of Seniors ($n = 4$), 21.95% of Freshmen ($n = 9$), and 21.88% of Juniors ($n = 7$) reported using ChatGPT more than ten times. Further, 17.07% of Freshmen ($n = 7$), 18.75% of Juniors ($n = 6$), and 0% of Seniors ($n = 0$) reported no use of ChatGPT for employability-related activities. In comparison, 35.71% of Sophomores reported no usage of ChatGPT ($n = 5$) and 42.86% ($n = 6$) have used it between one and three times.

Table 3

ChatGPT Usage Patterns Across Years in School (in % of Total)

Year in School	No Use	1-3 Times	4-6 Times	7-10 Times	>10 Times	Total (n)
Freshmen	17.07	29.27	21.95	9.76	21.95	41
Sophomores	35.71	42.86	7.14	-	7.14	14
Juniors	18.75	28.13	18.75	12.50	21.88	32
Seniors	-	38.46	30.77	-	30.77	13

Note. Percentages are based on the total per year in school. Dashes indicate no reported responses in that category.

Predictors of Perceived Usefulness of GAI for Career Development

Multiple linear regression analysis with a backwards elimination process revealed insights into variables contributing to *perceived usefulness.* Consistent with TAM's causal ordering of variables, our quantitative model focused on the antecedents of PU, rather than on intention or use. Accordingly, we estimated a multiple linear regression with PU as the dependent variable and all remaining variables as predictors in the first model. According to the results of the *F*-test, regression model 1 with all six predictors was statistically significant ($F[6, 93] = 26.94$, $p < .001$) and provided a sufficient goodness of fit, $R^2 = .63$, adjusted $R^2 = .61$. Despite the first model with

all predictor variables providing considerable explanatory power, individual variables were not statistically significant. Using a backward elimination approach, the predictor with the largest *p*-value was removed from each subsequent model. This process was statistically supported by the *F*-test for the change in R^2. The results of the final regression model identified the two most useful variables associated with *perceived usefulness* ($F[2, 97] = 74.77$, $p < .001$). Model 5 also provided a satisfactory goodness of fit, $R^2 = .61$, adjusted $R^2 = .60$. Dropping the remaining predictors was statistically supported by the *F*-test for the change in R^2 ($F[1, 97] = 3.60$, $p = .06$). The final regression model provided evidence that *attitude toward using ChatGPT* ($\beta^* = .48$, $p < .001$) and *behavioral intention to use ChatGPT* ($\beta^* = .36$, $p < .001$) positively contribute to *perceived usefulness.* The results of the backwards elimination process are included in Table 4.

Table 4

Overview of Backwards Elimination Process on Perceived Usefulness (Model 1 – Model 5)

Model	Variable	β	*p*	R^2	R^2_{adj}	*F*	*df*	p^a	ΔR^2	F^b	p^c
Model 1	Intercept	.00	.98	.63	.61	26.94	(6, 93)	<.001			
	PEU	.16	.12								
	ATT	.40	< .001								
	BI	.26	.02								
	PC	.17	.10								
	PSI	-.10	.29								
	PEC	-.02	.83								
Model 2	Intercept	.00	.98	.63	.62	32.65	(5, 94)	< .001	< .001	0.05	.83
	PEU	.16	.12								
	ATT	.39	< .001								
	BI	.26	.02								
	PC	.18	.08								
	PSI	-.11	.24								
Model 3	Intercept	.00	.98	.63	.61	40.29	(4, 95)	< .001	.005	1.41	.24
	PEU	.16	.12								
	ATT	.36	< .001								
	BI	.24	.03								
	PC	.14	.15								
Model 4	Intercept	.00	.97	.62	.61	52.38	(3, 96)	< .001	.008	2.13	.15
	PEU	.19	.06								
	ATT	.39	< .001								
	BI	.29	< .01								
Model 5	Intercept	.00	.95	.61	.60	74.77	(2, 97)	< .001	.014	3.60	.06
	PEU	.48	.001								
	ATT	.36	< .001								

Note. $N = 102$. β is the standardized regression coefficient. [a] Describes the overall regression model. [b, c] Describe the *F*-test and *p*-value for the change in R^2. PEU = perceived ease of use, ATT = attitude toward using ChatGPT, BI = behavioral intention to use ChatGPT, PC = perceived credibility, PSI = perceived social influence, and PEC = perceived ethical considerations

Employability-related Activities

An analysis of employability-related activities revealed that students most commonly use ChatGPT for resume building (52.94%), followed by workplace communication (38.24%) and cover letters (35.29%). Table 5 provides an overview of employability-related activities. Additionally, the data showed various distributions of the top three employability-related activities per year in school. Freshmen most used ChatGPT for resumes (53.65%), workplace communication (36.59%), and goal setting (29.27%). Sophomores utilized GAI tools for resumes (50%), workplace communication (35.71%), and cover letters and professional skills development (28.57% each). Students of Junior-standing used ChatGPT for resumes (53.13%), cover letters and workplace communication (40.63% each), and suggested interview responses and networking advice (31.25% each). Finally, Seniors mostly utilized ChatGPT for resumes and cover letters (53.85% each), suggested interview responses and workplace communication (38.46% each), and career planning and networking advice (30.77% each).

Table 5
Overview of Employability-related Activities

Activity	***n***	**Percentage (%) of Total**
Resume	54	52.94
Workplace Communication	39	38.24
Cover Letters	36	35.29
Suggested Interview Responses	29	28.43
Networking Advice	25	24.51
Career Planning/Self-Discovery	23	22.55
Professional Skills Development	23	22.55
Job Search Strategies	21	20.59
Goal Setting	20	19.61
Workflow Improvement/Time Management	16	15.69
Personal Branding	12	11.76
Salary Negotiation	6	5.88
Other: LinkedIn Post	1	0.01

Note. $N = 102$.

Integration of Quantitative Findings to Inform Phase 2

The quantitative findings directly informed the Phase 2 focus group protocol by highlighting key patterns in students' use of ChatGPT and their perceptions of its perceived usefulness. A large majority of students (81%) reported using ChatGPT for employability-related activities at least once in the past 12 months, with frequent users perceiving significantly greater perceived usefulness. The most common employability-related activities included resume building (52.94%), workplace communication (38.24%), and cover letter writing (35.29%). These findings guided a deeper qualitative examination of how students engage with ChatGPT in these specific tasks, including the benefits they perceive and the challenges they encounter. In addition, results showed that attitudes toward ChatGPT and behavioral intention significantly contributed to perceived usefulness, prompting further exploration of students' overall usage experiences and the factors shaping these perceptions. Descriptive analyses revealed varying

levels of perceived usefulness and ease of use, while ANOVA results indicated that frequent users reported significantly higher perceived usefulness than non-users. Final, moderate perceived credibility were observed, which also informed qualitative inquiry into how students evaluate trustworthiness of ChatGPT and how this influences their adoption and use.

Qualitative Findings (Phase 2)

The focus group sessions provided insights into how undergraduate students used ChatGPT for employability-related activities such as resume and cover letter writing, job searching, interview preparation, and workplace communication. Qualitative data also revealed students' positive experiences of ChatGPT usage in career development. The ease of use and convenience of the tool led to higher levels of perceived usefulness.

ChatGPT Usage in Employability-related Activities

All focus group participants have used ChatGPT in their employability-related activities. Aligned with the quantitative data, most students use ChatGPT for resume and cover letter writing, interview preparation, and workplace communication.

For resume and cover letter writing, students applied two main strategies: using ChatGPT to catch errors and generate revision suggestions, or providing detailed prompts alongside job descriptions to tailor content to specific roles. As one student described the latter approach: "I tailor my resume by copying the description of the job, then apply it to my resume. Then, it [highlights] specific skill sets or specific tools that the company actually asks for, and it's shown in my resume." A smaller group of students used ChatGPT to generate initial content rather than revise existing drafts, providing rough notes and asking the tool to produce polished paragraphs.

Regarding workplace communication, students mainly used ChatGPT for email drafting and revising. For instance, one student shared they were struggling with writing a professional email to decline an offer and asked ChatGPT to draft it:

> I use [ChatGPT] for emails a lot. So, I had an offer letter from a master program that I wanted to like politely declined, but I did not want to give a reason for why I was declining...So I was just like 'ChatGPT, create an email for me to politely decline something without giving a reason. So, it provided three different ones.

Others used it as a "grammar checker" or "tone adjuster" by copying and pasting a draft and asking ChatGPT to make it more or less formal. A few students, however, preferred writing emails in their own voice, questioning the value of AI-generated communication when authenticity mattered.

For interview preparation, students most commonly used ChatGPT as a brainstorming tool to "come up with interview questions" by pasting job descriptions. Beyond question generation, students also used ChatGPT to identify relevant experiences. As one student shared

> I'll put [a potential interview question] into ChatGPT, like there is [interview] question and I'm getting stuck on. And I did X and Y. I don't really go into details of what did. But [ChatGPT] highlights specific things that the company wants.

By analyzing job descriptions and students' resumes, ChatGPT helped brainstorm potential interview questions, highlighted relevant experiences, and provided recommendations.

Perceived Usefulness of ChatGPT

Most participants stated that ChatGPT is useful. Students' positive experiences using ChatGPT in employability-related activities, along with its ease of use and convenience, contributed to their perceived usefulness. First, students' overall experiences with ChatGPT were positive. As one student shared,

> I think [ChatGPT] is really helpful. Yeah, it's really useful. I think it saves time. Honestly, I think it makes content more clear because sometimes if I don't know where to start [to revise materials]. It just makes it more clear and easy.

Another student highlighted the professional quality of ChatGPT output: "It is really positive overall. [ChatGPT] is really help. I was getting like professional responses." Another student emphasized the professional tone of ChatGPT response, "I feel I don't have that much professional interaction with all my friends, definitely steps up a level."

Additionally, the ease of use and convenience of ChatGPT also contributed to students' perceived usefulness. Since ChatGPT provides instant responses and is accessible anytime, students were more inclined to use it for small edits and time-consuming tasks. One student acknowledged AI's accessibility and said, "AI is more accessible, like it is 24/7, you can do it whenever you want," while others emphasized the time savings for job searching tasks. In summary, most students perceived ChatGPT as a useful tool for their career development.

However, a few students expressed concern about ChatGPT's perceived usefulness, due to its low efficiency and inaccurate outcomes. As one student explained,

> I feel like if I use ChatGPT, especially like summarizing a cover letter or resume, that means I am unable to do it myself and I'm unable to replicate it later. It's only good for that one instance. And I'd have to redo the process over again...I feel like sometimes I have to hold the computer's hand as I go through the process. As I can just as easily find answers on Google, which also has an AI summary. I think those be wrong too.

Overall, students' perceived usefulness of ChatGPT was shaped by their direct experience. Positive interactions with ChatGPT often led to positive attitudes toward its use, reinforcing students' perception of perceived usefulness. On the other hand, concerns about low efficiency and inaccurate outcomes led students to question its perceived usefulness.

Discussion and Implications

Guided by the Technology Acceptance Model, this mixed-methods study explored how undergraduate students in the liberal arts and sciences engage with ChatGPT for employability preparation, responding to Pham Thi's (2025) call for more research on how emerging technologies shape career behaviors across diverse student populations. By situating ChatGPT use within a career development context, this study extends research on GAI beyond classroom productivity and into a more consequential domain where students navigate professional self-presentation, credibility, and judgment. In doing so, it situates technology use within a specific educational and career development context where students navigate less linear pathways and may have limited access to personalized career support (Ryu & Jeong, 2021). The integrated quantitative and qualitative findings reveal both opportunities and challenges in AI-mediated career preparation, particularly in identity-relevant, high-stakes contexts.

Across both phases of this study, ChatGPT emerged as an important support tool for drafting, revising, and refining career-related materials. Students described using ChatGPT strategically to translate experiences into more legible professional language, refine materials in relation to job descriptions, and rehearse responses for anticipated workplace interactions. Rather than functioning primarily as a source of career information, ChatGPT was most often used as a translation and calibration tools that helped students align their experiences with professional expectations. This finding is consistent with prior work showing that students often value GAI for writing support, revision, and communication refinement (Chan & Hu, 2023; Malik et al., 2023). Students also emphasized ChatGPT's accessibility and immediacy, particularly when seeking quick feedback, reducing drafting friction, or preparing materials under time constraints, aligning with prior findings on the appeal of AI's low-friction and on-demand support (Flink et al., 2024; Ponce, 2024; Tlili et al., 2023).

Students also described using ChatGPT as a low-pressure environment in which to test ideas, rehearse responses, and experiment with professional language before presenting them in higher-takes settings. This use is particularly notable because it suggests that students are not simply outsourcing writing tasks, but using ChatGPT to practice professional communication and calibrate self-presentation. In this sense, ChatGPT functioned not only as a writing support tool, but as a mechanism for professional rehearsal. Students' most common use cases (i.e., resume development, cover letters, workplace communication, and interview preparation) map closely onto workforce demands emphasizing communication, cognition, and technology-enabled work practices (Granillo-Velasquez et al., 2025). Together, these patterns suggest that ChatGPT may function as a competency signaling support tool by helping students translate experiences into professional language, tailor materials to role expectations, and rehearse workplace communication norms. For students navigating less linear pathways, this kind of translation support may be especially valuable as they work to articulate fit and credibility across diverse occupational contexts.

From a theoretical perspective, and consistent with Davis' (1989) TAM, the results suggest that students' positive attitudes toward GAI tools like ChatGPT, often rooted in curiosity, enjoyment, and perceived competence, translate into stronger beliefs about the technology's utility for employability-related activities. This extends prior research on GAI use in educational contexts (Yilmaz et al., 2023; Zou & Huang, 2023) by suggesting that when students perceive GAI as accessible and beneficial, their engagement deepens, particularly for resumes, interview preparation, and workplace communication. The findings also indicate a reciprocal dynamic in which continued behavioral intention toward ChatGPT strengthens perceived usefulness, consistent with Venkatesh et al.'s (2003) view that technology adoption is iterative and shaped by familiarity and active engagement.

At the same time, students expressed ambivalence regarding accuracy, originality, and authenticity in using ChatGPT for career development. Some participants raised concerns about AI-generated materials lacking personalization or professional credibility, echoing Smith's (2023) caution that AI should complement rather than replace individualized career guidance. This tension between efficiency and authenticity highlights an emerging ethical challenge. While GAI reduces cognitive and emotional barriers to career preparation, overreliance may limit opportunities for self-reflection and skill development. Prior research similarly suggested that

students may turn to GAI systems to manage cognitive and emotional demands associated with complex tasks, with perceived usefulness and ease of use shaping trust and continued engagement (Saif et al., 2024).

Moreover, many students demonstrated critical engagement and self-awareness in their approach. Rather than passively accepting AI-generated outputs, they used ChatGPT as a brainstorming partner to generate initial ideas, explore rehearsing, and refine direction. This reflective engagement illustrates a developing form of critical AI literacy (Velander et al., 2024), where students balance curiosity and caution. Students valued ChatGPT's ability to be a thought-starter, while also questioning its reliability and limitations. Many frequently noted generic responses, inaccurate suggestions, and the need for cross-referencing to ensure validity. As a result, participants emphasized that they did not directly copy AI-generated output. Instead, they revised and refined responses, provided more detailed prompts, or compared results across tools to enhance accuracy, aligning with Li and Kim's (2024) framing of AI literacy. Through these practices, students maintained agency over AI-supported self-presentation while also deepening their understanding of career development norms and expectations.

Implications for GAI-Mediated Career Development

The findings of this study carry several implications for career development research and practice. As ChatGPT and similar tools become normalized features of how students research occupations, prepare application materials, and rehearse professional self-presentation, understanding how students calibrate trust, regulate reliance, and maintain personal agency becomes increasingly important. The present findings suggest that perceived usefulness is shaped not only by ease of use, but by students' capacity to critically evaluate and ethically integrate AI-generated content in identity-relevant, high-stakes career contexts. This emphasizes the need to support reflective judgment alongside technical AI proficiency.

These implications align with broader calls to strengthen students' career preparedness through a combined emphasis on adaptability resources and future-oriented skills development, particularly as technology readiness and digital competence become intertwined with career motivation and career navigation (Lin et al., 2024; Pham Thi, 2025). From this lens, career services are not only supporting job-search competencies but also supporting adaptive capacity (i.e., students' ability to respond to uncertainty, revise self-presentations, and make decisions under imperfect information).

Within applied career contexts, these findings highlight several considerations for career development research and practice. As GAI tools like ChatGPT become more deeply embedded in students' learning and career preparation, the intention should not be to discourage the use of these tools but rather to offer guidance in how AI-mediated tools can be used ethically, critically, and effectively. Many career centers have already begun developing GAI resources and guidance for students (see Career Education at Stanford, n.d.; Career Services at the University of Richmond, n.d.; Career Services at UW-Madison, n.d.; Dartmouth Center for Career Design, n.d.; Northwestern Career Advancement, n.d.; The Grainger College of Engineering Career Services, n.d.). For career centers, these findings support the development of targeted AI-in-career-preparation interventions such as prompt design workshops, AI-assisted resume revision

labs, and advising protocols that help students evaluate and personalize AI-generated content. Moving forward, the role of career practitioners may also evolve from just content experts to AI literacy facilitators who support students' judgment, reflection, and agency when interacting with AI systems.

GAI literacy is also emerging as a core employability competency in its own right. As students use tools such as ChatGPT to translate experiences into professional narratives and refine application materials, the ability to evaluate and responsibly use AI-generated content becomes integral to effective career preparation. Career education frameworks developed by the National Association of Colleges and Employers (NACE) emphasize technology use, communication, and critical thinking as essential competencies for career readiness (National Association of Colleges and Employers, n.d.), all of which align closely with responsible AI use in employability-related activities. For instructors, these findings suggest value in embedding AI literacy into professional development and career readiness curricula. This may include assignments that ask students to critique AI-generated responses, revise generic outputs, and reflect on the ethical and strategic implications of using AI in high-stakes professional communication.

Given students' concerns about inaccuracy, misrepresentation, and overreliance, career centers and professional associations may also benefit from developing explicit ethical AI guidelines and ongoing professional development opportunities for practitioners. These should address transparency, authenticity, bias, and appropriate use of AI-generated materials in job applications and advising sessions. For institutions, the findings highlight the need for clearer guidance on acceptable and ethical uses of GAI in employability-related contexts. Institutional policy may increasingly need to clarify expectation around AI-assisted application materials, transparency, and responsible use, while also integrating AI literacy into broader career readiness and workforce preparation initiatives. Embedding reflection and ethical deliberation into practice, whether through conversations, workshops, or policies, can help reposition GAI from a shortcut to a collaborative partner in human decision-making.

Conclusion

This study highlights how undergraduate students in the LAS are integrating GAI into their employability preparation in thoughtful yet complex ways. While many view ChatGPT as an accessible writing assistant, others use it as a catalyst for reflection and skill refinement. Findings from both phases emphasized that acceptance of AI in career contexts is shaped not only by ease of use and perceived usefulness, but also by attitudes toward accuracy and ethical responsibility. Participants used ChatGPT primarily as a starting point before applying their own discernment and voice. This approach reflects a healthy balance between efficiency and authenticity, illustrating how users actively regulate reliance on AI-generated content. As GAI continues to reshape career preparation, embedding AI literacy and ethical awareness into career development practice will be essential to ensuring that technological tools support, rather than replace human-centered growth.

Limitations and Future Research Directions

While the findings offer insight into undergraduate students' use of GAI for career development, several limitations should be acknowledged. The study was conducted at a single Midwestern R1 university within one college, limiting generalizability to other institutional contexts. Students' use of GAI for career development may also vary across disciplinary and institutional settings. Because this study focused on students in a College within the LAS in an R1 university, patterns of use may differ in disciplines with more clearly structured career pathways (e.g., engineering, nursing, or business) or at institutions with different levels of career support and advising infrastructure. Data relied on self-reported, retrospective accounts over a 12-month period, which may have introduced recall and response bias and overrepresentation of more tech-engaged students. The sample size was adequate for medium-sized effects but may have been underpowered to detect smaller relationships, and the backward elimination approach should be understood as exploratory rather than confirmatory. Finally, the cross-sectional design limits insights into how perceptions and behaviors evolve over time, and the study's focus on ChatGPT specifically does not account for the broader and rapidly shifting GAI landscape. These limitations point to several directions for future research. Studies spanning multiple universities and colleges would strengthen generalizability and allow for comparison across institutional and disciplinary contexts. Longitudinal designs could examine how repeated AI interaction shapes trust calibration, ethical self-regulation, and perceived usefulness over time. Future work may also compare across GAI platforms or track how student preferences shift as new tools emerge.

Declarations

Funding: This research was supported by the Robert P. Larsen Grant for Research in Career Development from The Career Center at the University of Illinois Urbana-Champaign.
Ethical considerations: This study was approved as Exempt by the Office for the Protection of Research Subjects at the [Research Site] (IRB#24-0655). Participants provided informed consent by acknowledging a consent cover letter during the quantitative phase and signing a written consent form during the qualitative phase.
Authors' contributions: Author 1: Conceptualization; Methodology; Investigation; Data curation; Formal analysis; Funding acquisition; Project administration; Writing – original draft, Author 2: Methodology; Investigation; Data curation; Formal analysis; Validation; Funding acquisition; Writing – original draft; Writing – review & editing, Author 3: Writing – review & editing; Supervision.
Competing interests: The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.
Availability of data and materials: The quantitative and qualitative data supporting the results and findings of this study, including interview transcripts and coding details, are not publicly available to protect participants' confidentiality. However, anonymized excerpts relevant to the study's themes are included in the manuscript.

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Appendix A. Survey Questions (Phase 1)

What year in school are you?

- Freshman
- Sophomore
- Junior
- Senior
- Prefer not to say

What is your major? (open-ended)

What gender do you identify as?

- Male
- Female
- (open ended)
- Prefer not to say

What employability-related activities do you use ChatGPT for? (Select all that apply)

- Resume building
- Cover letters
- Suggested interview responses
- Job search strategies
- Career planning/self-discovery (e.g identifying a possible career based on interest and skills)
- Workplace communication (e.g. drafting an email to a supervisor)
- Personal branding
- Salary negotiation
- Goal setting
- None
- Other(fill in)
- Prefer not to say

In the past 12 months, how often did you use ChatGPT for your career development (resumes, cover letters, ,…)?

- 0 times
- 1- 3 times
- 4 - 6 times
- 7 - 10 times
- More than 10 times
- Prefer not to say

The following questions address your use of ChatGPT for career development purposes. Career development purposes include resume-building, drafting of cover letter or related application materials, brainstorming interview responses or job searching strategies, workplace communication such as drafting emails to supervisors, salary negotiation, personal branding, goal-setting or similar activities.

Perceived usefulness:
To what extent do you agree with the following statements:
Strongly disagree – Disagree – Neither agree nor disagree – Agree – Strongly agree

- ChatGPT can help me find the information I need quickly and easily
- ChatGPT is a valuable resource for answering my questions
- ChatGPT enhances my ability to learn

Perceived ease of use
To what extent do you agree with the following statements:
Very difficult – difficult – somewhat difficult – neither difficult nor easy – somewhat easy – easy – very easy

- ChatGPT is easy to use
- It is easy to get ChatGPT to do what I want it to do
- I find ChatGPT to be a user-friendly tool

Attitude toward using ChatGPT
To what extent do you agree with the following statements?
Strongly disagree – Disagree – Neither agree nor disagree – Agree – Strongly agree

- I enjoy using ChatGPT
- Using ChatGPT is fun
- I find it interesting to interact with ChatGPT

Behavioral intention to use ChatGPT
To what extent do you agree with the following statements?
Very unlikely – unlikely – somewhat unlikely – neutral – somewhat likely – likely – very likely

- I intend to use ChatGPT in the future
- I plan to use ChatGPT frequently in the future
- I expect to use ChatGPT more often in the future than I do now

Perceived credibility:
To what extent do you agree with the following statements?
Strongly disagree – Disagree – Neither agree nor disagree – Agree – Strongly agree

- ChatGPT is a trustworthy source of information
- I believe that ChatGPT provides accurate information
- I perceive ChatGPT to be a reliable resource

Perceived social influence:
To what extent do you agree with the following statements?
Strongly disagree – Disagree – Neither agree nor disagree – Agree – Strongly agree

- My peers think I should use ChatGPT
- I believe that using ChatGPT is socially acceptable
- I am encouraged by other to use ChatGPT

Perceived ethical considerations
To what extent do you agree with the following statements?

Strongly disagree – Disagree – Neither agree nor disagree – Agree – Strongly agree

- I discuss the use of ChatGPT and its implications with my peers or mentors
- I verify the information or advice given by ChatGPT before applying it.
- I am aware of potential biases in responses generated by ChatGPT.

Appendix B. Focus Group Questions (Phase 2)

Icebreaker Question:
To begin, what are your confidence levels with generative AI? If confident: How did you get to this point? (*Did they learn on their own? Through friends? Workshops?)* If **not** confident: can you explain some challenges, please

Question 1:
To start, can you share generative AI tools you have used for your career development?
If someone says that they haven't used any tools: inquire why
Follow up if they say resume, cover letter, workplace communication, suggested interview responses,… etc.:

A. Can you describe your process for using AI tools for these activities.
B. Do you use a specific prompt? Do you generate responses based on your resume? Job description?
C. How do you use the generated response? (*Do not say this until they start sharing:* Copy-paste? Review and change? Further develop? Engage in back and forth with ChatGPT, …)

Question 2:
What is your overall experience using generative AI for your career development?

Question 3:
How do you perceive the usefulness of utilizing generative AI for your career development?

Question 4:
Have you encountered any challenges when you use generative AI? Please provide examples.

Question 5:
Why do you use generative AI for career development, rather than career center services?

Follow up: Based on the survey results, many of you weren't sure if you perceive ChatGPT as a trustworthy source of information. What are your thoughts on this? How does it benefit your development of career development-related materials despite the challenges?
Do you consider how employers perceive your application materials/ if they notice that you used generative AI?

Question 6:
Compared with career centers, what benefits can you get from using generative AI?
What career service offerings would be helpful in supporting your use of generative AI?

Question 7:
Can you identify any factors that could enhance your usefulness of generative AI?