Assessing Student Employment in Libraries for Critical Thinking & Career Readiness

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I. INTRODUCTION

This conference proceeding and the accompanying presentation examines the intersection of the student employment experience in the University of Oregon Libraries and the development of critical thinking skills which is a desired career readiness competency by employers.

Student employees contribute significantly to an academic library's workforce and resource allocation. In 2019, the University of Oregon Libraries employed approximately 300 students in part-time positions across its 8 libraries. This translates into 50 full-time equivalent regular library staff employees (50 FTE). The UO Libraries spent over $1.1 million dollars in compensation to these student workers. In analyzing Association of College & Research Libraries (ACRL) data from 2018, one researcher found that the average percent of student assistants to the overall Library FTE workforce "was 25% at doctoral-granting institutions, 9% at masters colleges and institutions, 7% at baccalaureate colleges, and 3% at associates colleges" (Black, 2020 p.57). The impact of this student workforce keeps the library running effectively and smoothly.

Employment in the UO Libraries offers students a reliable paycheck to assist with expenses related to the price of higher education such as books or tuition. This stable paycheck can also assist with more essential and practical needs such as food and housing. Employment in the UO Libraries also affords a safe place for students to develop skills and experiences that may impact classroom performance and enhance future employability such as critical thinking.

Research has suggested that student employment in libraries may mirror high-impact practices that contribute to student success metrics such as student retention or classroom performance, in addition to developing skills associated with workplace readiness and life-long learning (Mitola, Rinto, and Pattni, 2018; Rinto, Mitola, and Otto, 2019). A research report by the UO Office of Institutional Research yielded

evidence to support this assertion and further suggests there may be additional positive outcomes from student employment beyond a paycheck. The report found that *graduation rates for students employed at UO were about two percentage points higher than those who were not employed during their attendance.* Cumulative GPA was also higher for students who were employed at UO.[1] It should be noted that the report reflects student employment anywhere on the UO campus, not just in the libraries.

Despite evidence that student employment in the UO Libraries may have a positive impact on student academic lives, the UO Libraries do not possess a strong understanding of what experiences related to library student employment are actually conferring these benefits. Nor is there a clear articulation of how the library employment experience may contribute to the development of skills in areas such as critical thinking which are useful in the classroom as well as valued by future employers.

A systematic evaluation of student employment within the UO Libraries may assist in better illuminating what aspects of the student employment experience have the most impact on creating positive change in student lives. With this knowledge, the UO Libraries may allocate additional attention and resources to enhance these outcomes. The results of this assessment may also prove useful to other libraries building out their student employment programs in a more purposeful manner.

This paper shares the preliminary results of a survey research project that gathered evidence from current and former student employees about their learning experiences while working at the University of Oregon Libraries. This project will assist the UO Libraries in understanding where and how competencies, such as critical thinking, are being introduced and supported within its student employment program. Additional survey data has been gathered from student supervisors to triangulate and inform the overall research findings. With this evidence, the UO Libraries can better identify areas to allocate more resources, target training, or enhance existing efforts.

The overall survey is framed around two outcomes: career readiness and student success. These outcomes are drawn from the research and literature associated with student employment. Career readiness and student success are also emphasized by the University of Oregon as overall student outcomes, as well as endorsed by UO Career Services. Specifically, this conference paper reports on the preliminary survey results and the intersection of career readiness and critical thinking.

II. BACKGROUND and LITERATURE REVIEW: CAREER READINESS

The link between career readiness and general student employment has been robustly explored, as this connection is a current interest of both future employers and universities. Studies have been conducted by individual scholars, universities, and professional organizations. For example, in 2019 NASPA (National Association of

Student Personnel Administrators) did a comprehensive study of on-campus student employment at higher education institutions, including a component considering the percentage of university employers providing career readiness skills training to student employees (NASPA, 2019). Hansen & Hoag's 2019 review considered several different university student employee training programs and the reported improvements in career readiness (among other) skills. And Akos et al.'s 2021 study of a subset of university student employees (federal work-study students) investigated the improvements made in career readiness skills before and after federal work-study university employment. Each of these studies found positive, measurable gains in students' career readiness skills, and plausible connections between the student employment work and the acquisition or improvement of skills. One important issue to note though, is that a majority of the studies rely on students' self-reported perceptions of their own abilities and improvement. This is likely connected to the relative ease and cheapness of distributed online surveys as compared to outside testing or other more objective methods of measuring skills improvements.

Some research has also been undertaken specifically connecting student employment in libraries to career readiness. Allan (2016) points to case studies that show how libraries can support students by developing skills and attributes that would enhance their future employability. These include developing common learning outcomes, peer learning schemes, paid internships, student projects, and viewing students as collaborators, not just employees or customers. Researchers have also engaged students to articulate the value they receive from their library employment experience. Charles, Lotts, and Todroinova found in a survey of 121 library student employees that they "wanted additional experiences beyond their daily duties that could help them develop skills that are important for future employment" (2017, p.10–11). However, they noted that one of the most significant findings of their survey was that "students do not see a connection between their library employment and future career goals" (p.11). Conversely, Benjamin and McDevitt (2018) found in a qualitative study with library student assistants that they were able to draw comparisons to future career skills they would need such as time management and professionalism (p.259). Benjamin and McDevitt also found that students derived increased knowledge of resources and personal benefits including convenience and developing relationships from their job experience.

At the University of Oregon, the Career Services[2] and UO Student Employee Enhancement (UOSEE)[3] program have both adopted the NACE career readiness competencies[4] as skills they would like to articulate with student employees. These NACE definitions can be used to build employee training programs, common assessments, and shared job descriptions for departments across campus. Since the NACE competencies were an already established framework on the UO campus, these competencies became the learning outcomes and definitions, we built our assessment

project around in the library to further understand the specific student employment experience within the UO Libraries.

There are eight NACE career-readiness competencies:

- **Career & Self-Development:** 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.
- **Communication:** Clearly and effectively exchange information, ideas, facts, and perspectives with persons inside and outside of an organization.
- **Critical Thinking:** Identify and respond to needs based upon an understanding of situational context and logical analysis of relevant information.
- **Equity & Inclusion:** Demonstrate the awareness, attitude, knowledge, and skills required to equitably engage and include people from different local and global cultures. Engage in anti-racist practices that actively challenge the systems, structures, and policies of racism.
- **Leadership:** Recognize and capitalize on personal and team strengths to achieve organizational goals.
- **Professionalism:** Knowing work environments differ greatly, understand and demonstrate effective work habits, and act in the interest of the larger community and workplace.
- **Teamwork:** Build and maintain collaborative relationships to work effectively toward common goals, while appreciating diverse viewpoints and shared responsibilities.
- **Technology:** Understand and leverage technologies ethically to enhance efficiencies, complete tasks, and accomplish goals.

Several studies use the NACE career readiness competencies (NACE, 2022) as categories for career readiness skill sets. The NACE competencies have several advantages. NACE runs a large annual survey of several stakeholders (future employers, industry leaders, university administrative personnel, and students) to measure which skills are the most desired as well as which are the most commonly addressed in training, used in student university jobs, and perceived as valuable or competent by both students and employers. Additionally NACE provides robust background materials to help define and explain the various competencies, making it easier for stakeholders to apply them as consistent measurements. As of the most recent NACE report, "critical thinking" is the most desired skill set that employers wish to see in employees, including recently graduated students seeking work (NACE, 2021).

Although libraries must conversely be wary of seeing the student's gains in soft skills as an alternative to financial compensation for their time (Vine, 2021). Additionally, some

critique has been articulated at using NACE career-readiness criteria as evidence of student-centered employment practices due to criteria having been developed from employer statements on desirable skill sets. This critique notes that students' best interests may not be synonymous with those of the marketplace (Vine, 2021). Lastly, some thought should be given to questions of cultural competence and unconscious bias in evaluating students' progress based on soft skills such as "communication," "leadership," or "critical thinking." Ideas of good communication, or evidence of critical thinking, for example, are deeply rooted in cultural expectations and norms (Hora et al, 2018).

III. BACKGROUND and LITERATURE REVIEW: STUDENT SUCCESS and HIGH IMPACT PRACTICES

The University of Oregon defines student learning as: "Our students will graduate from the University of Oregon having had a positive experience, and will be well educated, socially responsible and career ready."

This definition of learning specifically calls out career readiness as an outcome.

The UO Libraries already have data from the UO Institutional Research office related to student employment in regards to student success metrics such as GPA and retention.[5] This research found that "graduation rates for students employed at UO were about two percentage points higher than those who were not employed during their attendance. Cumulative GPA was also higher for students who were employed at UO." What the UO Libraries did not have was a clear understanding of where or how student employment within the libraries actually might contribute to these positive student success gains.

Library student employment has the potential for students to grow their soft skills, such as critical thinking. Many student workers get a chance to interact with both their peers and with faculty and staff, providing a chance to develop skills in a diverse environment (Charles et al., 2017). While some of the ground-level work of library employees is rote (giving basic information, checking out books, or shelving), many other kinds of library work students can be assigned require developing independent judgment, such as working alone at a reference desk, learning to catalog items, providing research support, or becoming a peer instructor (for examples of such work see Seeholzer, 2013 and Everett & Bischoff, 2021). As economic forces drive academic libraries in financial downtimes, libraries are likely to train or employ student workers more deeply to maximize their efficiency.

These conditions create opportunities for student employees to not only gain experience on thoughtful, complex tasks but to deepen the impact of their work. One framework that might shed some light on the connection between student employment and student success is High Impact Practices (HIP). Using the rubric of High-Impact

Practices as a measure of applied learning, we can see the potential for library student employees to experience the six HIP criteria in their library work:

(1) Time and Effort, (2) Faculty and Peer Interaction, (3) Diversity, (4) Formal and Informal Feedback, (5) Integration, Synthesis, and Application, and (6) Connection (Kuh, 2008).

"While student employment is not one of the ten established High-Impact Practices, well-designed library student employment programs can borrow from the characteristics that define High-Impact Practices, thereby transforming student employment into student-centered learning experiences" (Rinto et al, 2019). In studies of the impact of library work on students' employability or soft skills, other researchers have noted the overlap between some student library work and the HIP criteria. For example, the student employment supervisors represent a valuable source of mentorship and connection, as does interaction with faculty and peers (Hansen & Hoag, 2018). Students employed on campuses work on average between 10 and 20 hours weekly, giving ample time for training and for the deepening of time and effort during work (Hansen & Hoag, 2018). Library work also engages students with an entire cross-section of the university population, a great depth of backgrounds, experiences and perspectives (Hansen & Hoag, 2018). Several other studies such as Charles et al. (2017), Rinto et al. (2019), and Maxey-Harris et al. (2010) have concluded that library tasks, in particular, require students to engage in deep, impactful work that builds skills over time.

While the HIP rubric of past studies has most often been used to measure whether or not student employment is generally enriching or specifically beneficial to student success, the question of whether tasks students in libraries are doing is complex and thoughtful is indicative of their value in improving career readiness skills.

While several studies have investigated the potential of library work to deepen learning and success for library student workers, fewer studies have looked at the specific connection between library student work and future career skills, particularly "soft skills" such as critical thinking (Charles et al., 2017). However, some significant studies such as Tyrer et al.'s 2013 study on employability skills in academic library student workers, and Melili et al.'s 2016 analysis of student perceptions of their library work experience in several aspects, including future employment value.

IV. BACKGROUND: CRITICAL THINKING

This conference paper is reporting on the preliminary results of our assessment project and specifically focuses on the NACE career readiness competency of critical thinking. NACE defines critical thinking as: *Identify and respond to needs based upon an understanding of situational context and logical analysis of relevant information.* We are focusing on reporting this competency first because a report from NACE has indicated

that 99% of employers consider critical thinking to be an essential skill (NACE 2020). Additionally, the American Association of Colleges & Universities (AAC&U) has found in their survey research that 95% of employers value critical thinking as being somewhat/very important (AAC&U 2021). Critical thinking is also a building block of information literacy and other problem-solving skills associated with student development in the classroom. Taken altogether, critical thinking was a natural starting point to begin examining the library employment experience for students with the data that had been collected.

V. BACKGROUND: ASSESSMENT OPPORTUNITIES FOR STUDENT EMPLOYEES

This project began with a discussion with the library's human resources staff and student supervisors about potential strategies for assessing student employment in the libraries. Different areas, opportunities, and assessment artifacts were identified associated with the student library employee experience (see Figure 1).

The assessment project reported in this paper focused on undertaking a brief survey of student employees to better understand their employment experience and identify opportunities for further training or emphasis. The survey would also gather student resumes to pilot assessment strategies such as rubrics and coding which might identify skills gained during the library employment experience. The survey was targeted to current student employees, former student employees, and student supervisors about the importance of NACE competencies to their majors, careers, and library work duties.

Figure 1: Student Employment Development Timeline
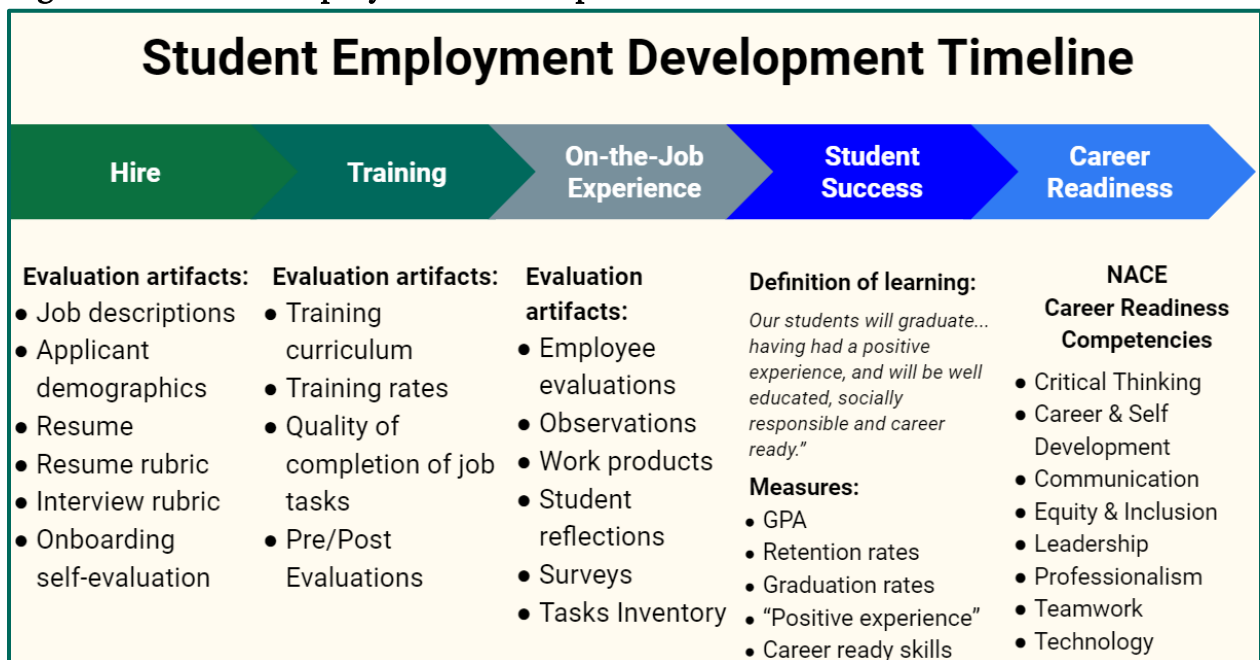
VI. SURVEY METHOD and SAMPLE DESCRIPTION

The project consisted of an online survey that was distributed via internal library communications. The project was submitted to the University of Oregon's institutional research review office and received an exempt status. Surveys were distributed to three stakeholder groups during the fall 2020 and spring 2021. The first stakeholder group is current student workers in order to capture the student employment experience as it is happening. The second stakeholder group is former student employees to capture the experience as it is being reflected on. The final stakeholder group is student supervisors in order to capture the experience of those who most directly shape the student employment experience. Distributing the survey to three different stakeholder groups allowed for triangulating some of the results and experiences as well as identifying unique gaps for each stakeholder group. The survey respondents made a sample of convenience of those who were willing and available to take the survey. An incentive of $15 was attached to the survey. The target for each survey audience was: 25 current student employees, 5 former student employers, and 5 student supervisors. The actual response to the survey was as follows: 22 current student employees, 8 former student employees, and 3 student supervisors (see Figure 2).

Figure 2: Survey Methodology
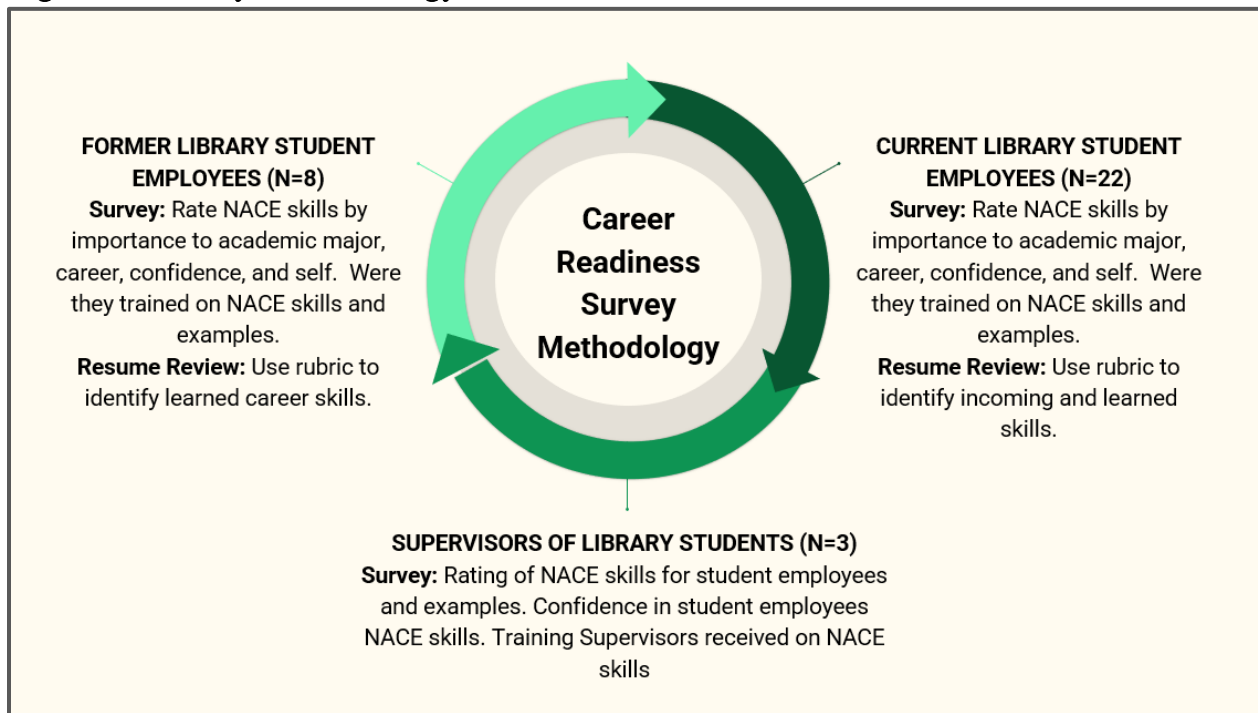
The survey software Qualtrics was used to build a series of open-ended and Ranking/Likert scale questions. The survey was constructed around these guiding evaluation questions.

- **WHO** among the library student employees are trained properly, have confidence/satisfaction in their job, and are learning competencies associated with student success and career readiness? *(Defining what success looks like)*
- **WHAT** experiences helped train library student employees, build confidence/satisfaction, and learn competencies associated with student success and career readiness? *(Uncovering high-impact experiences)*
- **WHEN** during the job experience do library student employees build competencies associated with student success and career readiness? *(Uncovering high-impact experiences)*
- **WHY** is associating student learning, success, and career readiness important to the UO Libraries student library employee program? *(Purpose: defining impact and value to students and libraries)*
- **HOW** is library student employee training happening to support student success and career readiness? *(articulate training "curriculum" — if it exists)*

Specific questions the survey hopes to answer are:

- How important are NACE workplace competencies to college graduates' degrees, careers, and former library job duties?
- How important are NACE workplace competencies to student employees' majors, careers, and library job duties?
- How important are NACE workplace competencies to student supervisors?
- Where are NACE workplace competencies learned while employed at the UO Libraries?
- Can students articulate and define NACE competencies when they describe their work experiences and on their resumes?

The open-ended responses were analyzed in the qualitative research software Dedoose. A content analysis was used to extract themes from responses. The responses were coded to identify similarities and unique experiences.

Several types of qualitative data collection were planned to supplement and help interpret the quantitative data set gathered in the student and student supervisor surveys. First, students were asked to "give an example of how you used or improved this skill at UO Libraries" for each NACE competency. Student supervisors were asked the same questions but in relation to their perceptions of the student's use, improvement, or training in their work. Additionally, students and student supervisors were given a free prompt to "share any additional thoughts" about their work or supervisory experience.

Another source of qualitative data was the resumes requested from each of the survey participants. Both students and student supervisors were requested to provide a

current resume for analysis. Personalized data was redacted and the resumes were coded for analysis. The goal of the resume analysis was to compare key coded words on critical thinking before employment at UO Libraries to the same group of words either during or subsequent to UO Libraries employment. A positive delta in coded words related to critical thinking would be some correlative evidence of increased usage or skills in critical thinking tasks.

The code words were determined using two vocabularies. NACE offers keywords associated with each competency, examples for the critical thinking competency include "decisions," "summarize," and "interpret." The AACU also provides values rubrics for understanding skill sets commonly used in measuring educational and employment goals, including a specific rubric and set of key terms associated with critical thinking. These two vocabularies were combined to create a master set of keywords. Resumes were then coded to note the instance of each word in the set both before and during or after UO Libraries employment.

VII.   SURVEY ANALYSIS AND REPORTING

The Likert and ranking questions were analyzed via the Qualtrics reporting tools and in Excel.

Current and former students were asked to rank each of the eight NACE competencies by importance to themselves, their academic major, and their future or current career. Reported below are the results of those respondents who ranked critical thinking as one of their top three competencies by importance to themselves, major, and career (see Figure 3).

Figure 3: Table of Survey Responses Ranking Importance of Critical Thinking as a Top 3 Skill toward Self, Major, and Career

Importance to:	Current Students ranking CRITICAL THINKING as a Top 3 skill (N=22)	Former Students ranking CRITICAL THINKING as a Top 3 skill (N=8)
YOU personally	45.5% (N=10)	37.5% (N=3)
ACADEMIC MAJOR	72.7% (N=16)	25% (N=2)
FUTURE CAREER or CURRENT PROFESSIONAL JOB	54.5% (N=12)	50% (N=4)

A slight majority of both current and former students agree that critical thinking is a top three competency for their future/current career. Interestingly, more current students associate critical thinking as a top three skill as important to their academic

major (72.7%) than former students who are currently in the workplace. This might suggest a difference in immediate priorities for current students who are immersed in their current academic pursuits. This may also suggest a need to better translate the necessity of critical thinking for future career paths.

Figure 4 displays the mean/average ranking for critical thinking for each area by survey population including student supervisors. There are eight NACE competencies and the lower the mean the higher they are ranked overall by each respondent group. Interestingly student supervisors rate critical thinking very highly in regard to themselves in comparison to current and former students. The importance of critical thinking towards an academic major is valued higher by current students compared to former students.

Figure 4: Table of Survey Average Importance Ranking of Critical Thinking Among 8 NACE Competencies to Self, Major, and Career (lower mean = higher ranking)

Importance to:	Current Students	Former Students	Student Supervisors (N=3)
YOU personally	4.23	4.38	2.67
ACADEMIC MAJOR	2.45	5.5	NA
FUTURE CAREER or CURRENT PROFESSIONAL JOB	2.95	4.13	NA

Current and former students employees were asked: *Which of these workplace skills or competencies did you learn on the job as part of your experience working in the UO Libraries?* Student supervisors were asked a similar question: *As a student supervisor, which of these workplace skills or competencies did you feel student employees learn on the job as part of their experience working in the UO Libraries?* The responses associated with critical thinking were as follows in the table below (Figure 5).

Figure 5: Table of Student/Supervisor Responses to Learning Critical Thinking on the Job

Student Response Options	Current Students (N=22)	Former Students (N=8)	Student Supervisors (N=3)	Supervisor Response Options
Learned on the job	63.6% (N=14)	75% (N=6)	100% (N=3)	Students learn this on the job

Student Response Options	Current Students (N=22)	Former Students (N=8)	Student Supervisors (N=3)	Supervisor Response Options
Unsure if learned on the job	18.2% (N=4)	0%	0%	Unsure if students learn this on the job
Did not learn on the job	18.2% (N=4)	25% (N=2)	0%	Students do not learn this on the job

Current student employees and former student employee responses suggest that a majority of them learn some aspects of critical thinking during on the job experiences in the library workplace. Student supervisor respondents indicate they believe students definitely do learn critical thinking on the job. However, 6 of the current/former student responses indicating they *did not learn on-the-job* critical thinking skills suggesting there might be a difference in experiences or a lack of understanding for students when critical thinking is happening or applied in the workplace.

Current and former student employees were asked: *Which of these workplace skills or competencies did you receive training on as part of your experience working in the UO Libraries?* Student supervisors were asked a similar question: *As a student supervisor, which of these workplace skills or competencies did receive training on as part of their experience working in the UO Libraries?* The responses associated with critical thinking were as follows in the table below (Figure 6)

Figure 6: Table of Student/Supervisor Responses to Receiving Training on Critical Thinking

Student Response Options	Current Students (N=22)	Former Students (N=8)	Student Supervisors (N=3)	Supervisor Response Options
Did receive training	36.4% (N=8)	75% (N=6)	0%	Students received training
Unsure if received training	27.3% (N=6)	12.5% (N=2)	66.7% (N=2)	Unsure if students received training
Did not receive training	36.4% (N=8)	12.5% (N=1)	33.3% (N=1)	Students did not receive training

The results for this question regarding critical thinking vary. It is interesting to note that 14 current/former students indicate they did receive training related to critical thinking while the student supervisors were unsure or indicated such training did not occur. This may suggest that there might be a lack of consistency or overarching program outcome for student training in the library workplace associated with critical thinking.

Current and former students were asked to rank their confidence in their own critical thinking skills prior to their employment in UO Libraries compared to now. Supervisors were also asked to rank the confidence in the critical thinking skills of the students they supervised. The results of these questions are in the table below (see Figure 7).

Figure 7: Table of Student/Supervisor Responses in Critical Thinking Confidence Level Before Employed in UO Libraries and Now

Critical Thinking Confidence Level	Current Students Before (N=22)	Current Students Now (N=22)	Former Students Before (N=8)	Former Students — Now (N=8)	Student Supervisors in Current Students (N=3)
High	63.6% (N=14)	77.3% (N=17)	75% (N=6)	87.5% (N=7)	33.3% (N=1)
Medium	31.8% (N=7)	22.7% (N=5)	12.5% (N=2)	12.5% (N=1)	66.7% (N=2)
Low	4.6% (1)	0%	12.5% (N=1)	0%	0%

The results from these series of questions suggest that both current and former students perceive some growth in their critical thinking confidence level after employment at the UO Libraries. While this is a positive finding, the evidence does not at this time suggest that employment in the UO Libraries is the direct cause of this increase. It is important to note that only 60.4% of employers rate recent graduates proficient in critical thinking (NACE 2020). Very few students rated their critical thinking abilities low which suggests that both current and former students might be overestimating their critical thinking abilities compared to employers' critical thinking expectations.

VIII.   QUALITATIVE RESUME & OPEN-ENDED QUESTION ANALYSIS

Students were asked in the survey to give examples of times when they used critical thinking skills in their work at UO Libraries. Student supervisors were asked the same in reference to their perception of the students they supervised and whether or not

they used critical thinking skills on the job. Most student respondents—93%—and 66% of supervisors expressed an opinion that student library workers did use critical thinking skills in their jobs. In comparison to the question to respondents on the amount of training provided, here the respondents focused specifically on everyday work performed.

When asked for specific examples of critical thinking tasks in their (or their students') library work, respondents elaborated on the type of work and their reasoning as to why such work involved critical thinking skills. Because the answers were open-ended the results were analyzed and coded for comparison. Coding produced ten reasons given for student library work to involve critical thinking; examples include: complexity, problem-solving, and working alone. Of the 10 reasons given, 9 naturally mapped to the NACE competency example language for critical thinking (NACE, 2022; see figure 8). The exception concept was "responsibility," which, by itself, does not naturally map to the NACE language on critical thinking (although it does map to the Leadership competency).

Figure 8: Critical Thinking related terms used by respondents in the open-ended question portion of the survey, compared to NACE descriptive terms for Critical Thinking skills

QUOTE FROM RESPONSE	MAPS TO NACE TERM	OCCURRENCE
Complexity	Diverse Information	8
Service Communication	Communication	1
Judgment	Judgment	12
Finding Information	Gather information	7
Planning	Prioritize Actions	4
Problem Solving	Problem Solving	15
Responsibility	N/A	5
Teaching	Communication	1
Time Management	Proactive Planning	10
Working Independently	Decision Making through Reason	5

Of the reasons cited, problem solving, judgment, and working alone had the highest total mentions among both students and supervisors. Many students in particular described working alone at the front or reference desk and explaining or finding

complex information for patrons as examples of the critical thinking skills they were using working in the library. A skill that was repeatedly mentioned in the open-ended questions on critical thinking was the ability to find information. This is a skill that the library likely requires of its student workers more than other on-campus jobs. Responses to the open-ended question on critical thinking point to a majority of respondents' opinions that critical thinking skills were used by library student workers and give concrete examples which mapped to the NACE competency definitions of critical thinking.

Results of qualitative student resume coded analysis showed a strong positive delta in describing their critical thinking skill sets previous to and during their UO libraries employment. As part of the survey, respondents were asked to provide a copy of their most updated resumes, and the resumes were checked for terms associated with either the NACE competency language on critical thinking or the AACU rubric on critical thinking skills. Seventy-seven percent of current students and 83% of former students added critical thinking words to their resumes associated only with their UO Libraries employment. On average, students added 2.5 new critical thinking descriptors to their resumes associated with library employment. The most commonly used critical thinking words were "teach/instruct," "research," and "design/develop," indicating high-level, complex critical thinking tasks performed as library student workers (see Figure 9).

Figure 9: Word Cloud of Critical Thinking Keywords Associated with Student Resumes

Although the student supervisors were queried in the open-ended critical thinking questions to give examples of critical thinking student workers utilized for their work, the pool of student supervisors was relatively small. While not discounting the supervisor data, this does weigh the data of this pilot survey more towards self-reported data and self-assessment. The question of whether that self-reporting is objective when compared to outside assessments of the critical thinking skills of the total population of student employees post-graduation (see NACE, 2022) should be addressed at a later phase in this study. However, by running a coded analysis of the student resumes for evidence of critical thinking-associated tasks, an important set of secondary data does point to real student engagement with critical thinking work in their UO library employment above and beyond student impressions of their own improvement in the skillset as measured by the quantitative questions in this survey.

IX. DISCUSSION and OBSERVATIONS

The overall assessment survey and resume analysis project associated with career competencies indicate that there is a need for more in-depth inquiry about the student employment experience in the UO Libraries. The results associated with critical thinking suggest that students might be overestimating their confidence in their critical thinking ability compared to employer expectations. The resume analysis and student responses suggest students are developing and applying critical thinking skills in the library workplace. However, some student respondents indicated they were not trained on this still and student supervisors are unsure at best if they receive training on critical thinking. This may suggest there is not a deliberate emphasis on developing critical thinking as a core skill within the UO Libraries and may be an area to focus on in the future through a training curriculum and assessments.

This connects with what Black (2020) suggested in their research to further enhance the student employment experience in libraries by:

- Designing positions with student learning in mind
- Train supervisors of student employees
- Coordinate Mentoring opportunities
- Focus on transferable skills
- Finding partners on campus for collaboration and support

Altogether, the survey assisted with identifying gaps in training, student/employer expectations, and confidence in critical thinking ability.

X. CONCLUSION

The UO Libraries initial Career Readiness Survey shows preliminary evidence that student library workers in UO Libraries both value critical thinking and perform tasks during their library work that would be categorized as critical thinking by both the

NACE Career Readiness Critical Thinking and the AACU Critical Thinking rubrics. Our survey shows that these students also rate themselves fairly highly on their critical thinking skills. However, NACE's general survey of employers rates current levels of all recent university undergraduates as fairly low in critical thinking skills. While it is possible that student library workers are exceptions to this general rule, it is more likely that this disparity points to a gap between students' own perceptions of their critical thinking skills and their actual skill levels.

The survey is not yet developed enough to establish causality on this gap. But it is significant to note that the survey also pointed to a lack of training in critical thinking skill sets for both the library student workers themselves and their supervisors. Engaging in further training of student workers in critical thinking skills would likely be worth the effort, as critical thinking work is already being done in the library and the training would be deepening the impact of the experience already being provided.

Other studies cited in this paper show that both student success and career readiness are positively impacted by university student employment experiences. Libraries can point to student employment as a positive contribution to their parent institutions, adding not only to total value through services, but also through student success, retention, and student satisfaction. Adding career readiness to this overall value is not only in the student's interest, but also presents measurable value-added of libraries to their universities. From this perspective, further student employee training and consideration of high-impact practices in supervision are impactful investments for the library in time and resources.

XI. Further Assessment Questions

The preliminary data on this survey suggests that further investigating will be worth the time. Several questions were raised in the course of this inquiry:

- Is there a measurable gap between students' perceptions of their critical thinking skills (or other career readiness skills), and their actual skill levels? If so, how would such a gap be measured?
- If there is a measurable gap between perception and actual skill level, what kind of skills development is appropriate, relevant and cost-effective for a university library to achieve during typical student library employment?
- What practices, high-impact or otherwise, are the best tools for cost-effectively developing student employee skill sets?
- What types of data should be gathered for evaluating the above questions? Can library supervisors or administration partner with other administrative bodies such as HR to gather this data effectively?

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I.   Endnotes

[1] Report commissioned by the UO Libraries from UO Institutional Research 2019

[2] https://career.uoregon.edu/fs/career-readiness

[3] https://uosee.uoregon.edu/

[4] https://www.naceweb.org/career-readiness/competencies/career-readiness-defined/

[5] Report commissioned by the UO Libraries from UO Institutional Research 2019