**The Many Impacts of Student Employment on Future Careers and Graduate Studies**

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**Executive Summary**

In the fall of 2021, the Sociology/Anthropology 371 students conducted research on Student Employment. We sent an anonymous online survey to 2,249 students at St. Olaf College. We received 557 responses, a 24.8% response rate.

Prior studies have examined aspects of college student campus employment such as job training, academic performance, and relationships, and the topic of our team’s research, future career development and postgraduate studies. Our research focuses on three main questions:

1. Do specific characteristics of a students’ identity influence the extent to which they gain (or perceive that they are gaining) valuable skills for success in future careers and/or postgraduate studies through their employment at St. Olaf College?
2. Do work-study students’ supervisors provide assistance for and foster discussion about students’ future careers and/or graduate school endeavors? Does the extent of supervisor support vary by the characteristics of the student and their job?
3. Do work-study students gain insights for career and graduate study from the job experience itself? For example, do work-study jobs influence or reinforce what students intend to pursue after graduation?

The most important results of our research are:

* For the job-related skills we examined (such as communication, problem-solving, and professionalism), at least 59.9% of students reported gaining those skills to *at least* a moderate extent. This varied upward, depending on the specific skill, to more than 80%.
	+ Both international and first-generation students scored higher on skill gains in the workplace compared to domestic and continuing generation students. These differences were statistically significant.
* Regarding supervisor support for students’ futures (such as helping students think about the future and how the skills they are learning apply to post-college life), at least 44.7% and up to 55.1% of students agreed that they receive support from their supervisor.
	+ There was no statistically significant difference in supervisor support for students by student generation or race and ethnicity (aggregated).
	+ Students in higher class years had higher scores in supervisor support.
* At least 31.9% and up to 78.9% of students agreed that their jobs help prepare them for future endeavors, with percentages varying with the specific nature of the preparation.
	+ First-generation students reported higher percentages of *strongly agree* in the Job Assistance and Preparation Index than continuing-generation students.

Based on our research, we offer these recommendations:

1. Encourage more positive reinforcement from employers/supervisors to student-workers that their work is important and includes the development of transferable skills.
2. Create a system for supervisors to give students a list of skills they should be learning or developing at their job, the means by which they will be developing these skills, and how the skills could be transferable for future opportunities.
3. Develop a system for students and supervisors to connect more regarding work.
4. When posting descriptions for on-campus jobs, provide information about possible fields a job and its transferable skills could apply to.

**REVIEW OF LITERATURE**

After graduation from college, most students move on to employment and a career path, sometimes pursuing graduate education first or as a later step. To be ready for this transition, new college graduates need to possess professional job skills and future career experience. While academic coursework provides students with opportunities to gain some of these skills and experiences, employment during college is well-positioned to provide experiences that help students gain or strengthen important skills for their futures.

**Work-Study Jobs and the Federal Work-Study Program**

Colleges and universities offer many “work-study” positions for their students, such as being a front desk worker for different departments, being a supervisor for buildings, and being a server for the cafeteria. These jobs enable students to earn money toward their college expenses while taking classes and can also enable students to gain skills such as leadership, organization, multitasking, written communication, and other skills that students can use for future endeavors.

Most work-study positions in the U.S. are funded through the Federal Work-Study (FWS) program, which is a specific type of financial aid. The FWS Program started in 1964 as part of the Economic Opportunity Act, is a way of enabling low-income students to work their way through college and subsidize their tuition costs (Scott-Clayton, 2017). This program operates by providing colleges and universities with funds to support and pay the students involved. Since FWS began, it has opened its doors to students above the low-income mark but continues to keep these students first priority when awarding work-study jobs and loans. FWS has not kept pace with increases in college tuition. During the 1970s, the average FWS awards could cover up to 90% of a student’s tuition. Now, these awards only finance an average of 16% of a student’s tuition (Scott-Clayton, 2017).

While FWS is limited, it does offer a vital opportunity for students to earn money. Work hours are often on a flexible schedule with college classes (unlike many jobs outside of FWS) and FWS jobs help students gain valuable work experience and transferable skills. Anne-Marie Nuñez points out the importance of FWS for first-generation college students, specifically Latinos. Financial aid is important to help pay for tuition and other expenses (even though it is not a large portion of tuition). Even more importantly, FWS-funded jobs provide important opportunities for students to gain job experience and learn skills such as time management, work ethic, independence, and school-work-social life balance. These jobs can also provide additional benefits such as a sense of belonging on campus, greater self-confidence, stronger campus relationships, and an increased sense of purpose (Nuñez et al., 2016). FWS jobs can thus help with finances, social relationships, and skill development.

Many studies and programs have identified the skills and competencies students need for postgraduate success. These include “transferable” skills such as self-confidence, and civic engagement (the ability to focus on issues that affect one’s community and be involved with local activities and problem-solving; Akos et al., 2021). These skills can be gained through academic courses, mentoring programs, internships, and employment, especially in work-study positions. When students have the chance to work with others and develop key skills in communication, leadership, and teamwork, they can experience “cognitive and socioemotional growth, improved teaching and communication skills, and greater enjoyment of their own apprenticeship experience…. and [become] more qualified for their careers” (McIntyre et al. 2020).

***NACE Competencies***

One key set of guidelines for student preparation for post-college employment and careers comes from the National Association of Colleges and Employers (NACE), which has developed a set of “career readiness competencies.” These competencies or skill sets entail fundamental abilities that will greatly assist graduates in transitioning from college to the workplace (Akos et al. 2020). These eight NACE competencies include: 1. Career & Self-Development (constantly growing and learning, general awareness of one’s strengths and weaknesses, and building connections in the work environment); 2. Communication (clearly exchanging information and ideas within and outside of the work environment); 3. Critical Thinking (being able to recognize and adequately address problems with informed judgment); 4. Equity & Inclusion (awareness and action regarding diversity and inclusivity across individuals with different backgrounds); 5. Leadership (addressing personal and group strengths in making progress toward goals); 6. Professionalism (displaying effective work habits and doing things that benefit the work environment as a whole); 7. Teamwork (creating and maintaining effective and collaborative relationships in pursuit of a common goal); and 8. Technology (understanding and using technology to accomplish tasks in the workplace; National Association of Colleges and Employers 2021)

According to prior research, it is essential to examine and strengthen these skills, particularly through work-study jobs, because employers and graduate school admissions committees seek these skills when selecting applicants. Explicitly guiding student workers and inquiring as to whether they believe they are gaining skills such as teamwork and collaboration in the workplace are important steps. It can also be very beneficial to incorporate most if not all of these competencies into the workplace if applicable. Work-study employers and supervisors can turn to the list of NACE competencies skill sets and incorporate these skills into student employees’ regular tasks (Akos et al. 2020).

***The Importance of the Supervisor Role***

Supervisors in the workplace can have an important positive impact on student workers and their skill gains. As West and Stirling (2021) explain, when supervisors provide opportunities for students to check in, communicate openly, and experience workplace structure, students are more likely to positively evaluate their work programs. When supervisors make the work environment more comfortable for student learning and growth, students note improvements in their professional development skills. It is important for supervisors to approach work-study as a “high-impact practice” and create a proactive environment that includes collaborative experiences, leadership development (Hansen and Hoag 2018), and meaning-making, and that allows students to further their own understandings on the job. This will help prepare students to thrive in their post-undergraduate careers and education.

**Skill Recognition Programs for Growth and Future Development**

IOWA GROW is a program that integrates the role of supervisors in promoting student-workers’ skill gains. IOWA GROW centers on discussions between student employees and their supervisors twice per academic semester (Hansen and Hoag 2018). The program requires participants to gather purpose from their work and reflect upon their experiences and growth with their supervisors (Evans et al., 2010). Through IOWA GROW, supervisors ask four questions during their conversations with student employees: 1. How does this job relate to your academics?; 2. What are you learning from this job that directly is helping you within academics?; 3. What are you discovering in your coursework that applies to your job?; and 4. Can you provide examples of things this job has taught you that potentially relate to your future profession? (Hansen and Hoag 2018). There are two fundamental ways in which supervisors assist student workers in gaining skills: 1) they provide prompts, which are questions that assist students in creating meaning and purpose in their work settings (via the four questions listed above), and 2) they provide scaffolding, which are assistance systems that promote growth and fulfillment by performing occupational tasks with support. IOWA GROW is thus designed to enhance the potential positive influence that work-study employment can have on student workers’ skill gains and preparation for their futures (Hansen and Hoag 2018).

IOWA GROW and similar programs with essentially the same purpose and structure have begun to spread across higher education institutions in the United States in recent years. St. Olaf College has a similar employment program titled “GROW at St. Olaf.” In addition to implementing impactful conversations between supervisors and their student employees, GROW at St. Olaf strives to help student workers gain nine valuable skills and insights through their employment on campus. St. Olaf’s GROW program lists the following nine intended outcomes: 1. writing skills,2. verbal communication skills, 3. diversity, 4. independence, 5. conflict negotiation, 6. problem-solving, 7. preparation for real-world employment, 8. learn about career options, and 9. see connections between work and academics (St. Olaf College Human Resources, undated). Many of these skills overlap with the NACE competencies mentioned previously. IOWA GROW and other similar programs are designed to make work-study a much more valuable program by helping students gain benefits for their futures.

***Conclusion***

Student employment accessibility and benefits have changed over time and vary depending on the job and college or university. There is also variation in supervisor presence and development of skills. Student employment can in career and postgraduate school readiness, as well as provide general work experience and social community. Specifically, programs like Iowa GROW can enhance career skills like the eight NACE competencies. In order for students to get the most out of their work-study, colleges need to look into the relationships between supervisors and workers, the skills that are being taught, as well as the transparency within the student employment program and financial aid packaging. ​​Incorporating programs like IOWA GROW and making supervisors more aware of their power in helping students grow in their work-study environment, the future for impactful student employment practices is bright.

Informed by this review of scholarly literature, our research focuses on three main questions: 1) the relationship between students’ demographic characteristics and the extent to which they gain valuable skills for their futures through their work-study employment; 2) the extent to which students’ supervisors help them with this and the relationship between this help and students’ demographics and job type; and 3) students’ skill and insight gains from the job experience itself.

**METHODS**

***Data Collection***

Over the course of the fall 2021 semester, we conducted research on college student work-study. On November 9th, 2021, we sent our online survey (which remained open for a week) to every St. Olaf College student who is employed by the college. The survey questions were designed to help answer critical questions and provide us with insightful information about students’ employment experiences at St. Olaf College. The overall study was conducted together with seven other research teams in the Sociology/Anthropology Department course SOAN 371: Foundations of Social Science Research: Quantitative Methods.

Before constructing our survey, we held a focus group with five students employed at St. Olaf College. The responses from this focus group assisted us in formulating concise and well-informed questions for our survey. From that point, we joined forces with our fellow researchers to create a single survey that combined each team’s most important questions. All of our survey questions were then entered into a program titled St. Olaf College Feedback Form Creator. We then sent an invitation to this survey to a total of 2,249 St. Olaf work-study students, and 557 of them responded to the survey, providing a 24.8% response rate.

***Variables***

We researched the following questions:

1. Do specific characteristics of a students’ identity (specifically first-generation status) influence the extent to which they gain (or perceive that they are gaining) valuable skills for success in future careers and/or postgraduate studies through their employment at St. Olaf College?
2. Do work-study students’ supervisors provide assistance for and foster discussion about students’ future careers and/or graduate school endeavors? Does the extent of supervisor support vary by the characteristics of the student and their job?
3. Do work-study students gain insights for career and graduate study from the job experience itself? For example, do work-study jobs influence or reinforce what students intend to pursue after graduation?

***First-Generation Perception of Skills for Success Gained through Work-Study Jobs***

To examine student employment and its potential influence on future careers and graduate studies, we looked at several variables. Starting with our first research question, our main variables are the first-generation status of a student and the extent to which they feel equipped with the proper skills to be successful in their future endeavors. We were interested to see if this relationship existed at St. Olaf College since we found substantial evidence for it in our review of the literature. For this research question, first-generation status serves as the independent variable. This first-generation indicator was calculated from a question that asked about the highest amount of education gained by the student’s parents/guardians. Respondents were provided with six possible responses ranging from less than a high school diploma or GED to having a graduate, medical, or professional degree. This scale enabled us to create a binarized variable of students who fall under the categories of first-generation (students who do not have a parent who completed a four-year college degree) and continuing-generation students.

The dependent variable in the first research question is skills gained through work-study jobs, specifically nine skills that are valuable to employers and graduate admissions offices. These skills were provided by NACE, although we decided to split communication into the two categories of oral and written communication. The nine skills we included were as follows: oral communication, written communication, problem-solving, professionalism, work ethic, leadership, teamwork, digital technology, and ability to promote equity and inclusion. The survey asked respondents about the extent to which they feel their work-study job is helping them gain these skills. Our survey question offered five response categories of to a great extent, to a large extent, to a moderate extent, to a small extent, and not at all. We created an index of all nine skills, combining them into a single summary score.

***Supervisor assistance and preparation for success***

Our survey asked the participants questions regarding the ways in which their work supervisors may or may not have assisted them in preparing for and deciding on their future careers and/or postgraduate studies. We included four statements about supervisors, such as “My supervisor has asked me about (or has shown interest in) my post-graduation plans” and “My supervisor has helped me develop and/or practice skills for my future career and graduate studies.” We used all four statements to create an index of supervisor assistance. Response options for these items ranged from strongly agree to strongly disagree.

***Job Assistance and Preparation for Future Endeavors***

On the survey, we also asked about whether students’ work-study jobs had helped them gain self-awareness, clarification about their future career plans, and preparation for their careers or maybe more school, as well as whether their work-study job was similar to what they intended to do after graduation. We used four statements, such as “My job has helped me gain self-awareness (for example, of my strengths and weaknesses)” and “My job has helped clarify or reinforce what I want to do (or NOT do) in my future career of post-St. Olaf education.” We provided five response options ranging from Strongly Agree to Strongly Disagree. We also created an *Index of job assistance and preparation* by summing the responses to the four items.

***Validity*** ***and*** ***Reliability***

Validity, according to Nueman (2012), implies truthfulness in research and measurement. In terms of validity, we asked about certain skills in our survey that reflected the generally accepted skills needed for current careers, based on our review of literature. This provides face validity, which is a type of consensus among the science community (Neuman 2012). We also made sure to reword or explain any terms that could be confusing, providing more validity. The second type of validity we achieved is content validity, which occurs when a measure includes the entire meaning of a concept (Neuman 2012). We achieved this by conceptualizing our variables, such as “supervisor assistance,” as having multiple dimensions and then ensuring that our survey questions asked about each of those dimensions.

Reliability, according to Nueman (2012), is the dependability or stability of a measure. To ensure reliability, our survey went through many revisions based on feedback from our peers, our professor, and our clients. In addition, we consulted multiple scholarly resources on how to best write our survey questions and response categories. We made our measures specific and multi-level by using Likert scales such as strongly agree to strongly disagree for many of our response categories. We also put questions on the same topic with the same response categories into grids, making it easier for respondents to take the survey.

***Sample and Sampling Procedures***

Our target population was St. Olaf students employed by the college. Instead of using random sampling to acquire a sample of students to participate in the survey, we sent our survey to all students in work-study jobs on campus via an email alias provided by the Human Resources Department. By doing this, we gave every individual in our target population an opportunity to participate in the survey. To get as many respondents as possible, we told potential respondents that we would randomly select 20 individuals who completed the questionnaire and entered a drawing to win a $20 Visa gift card.

The total population of students enrolled in on-campus jobs is 2,249. Out of these students, 557 responded to our survey, giving us a response rate of 24.8%.

Among our respondents who responded to gender identity, 69.8% were female (352), 23% were male (116), and 7.1% identified as non-binary (36). Out of the 550 who responded to our question on race and ethnicity, 72.1% were white (396), and 27.9% were BIPOC students (154). Among the 502 who responded to a question about parent/guardian education19.8% were first-generation students (99), and 80.2% were continuing-generation students (403). For our question about international or domestic status, 539 responded; 11.4% were international students (61), and 88.6% were domestic students (478).

***Ethics***

This research project was approved by the Institutional Review Board (IRB) of St. Olaf College. All students involved in the survey creation and planning were required to complete formal ethics training (specifically the General Social and Behavioral Investigations course provided by the Collaborative Institutional Training Initiative, known as “CITI”), in order to be educated on ethical practices and how to carry them out.

The following ethics statement was included in the email invitation sent out to all of our potential respondents: “Your responses are anonymous, and we don't ask for your name or information to identify you personally. Your participation is voluntary, and you may answer or skip any portion of the survey.” We also provided information on the topic of the survey and the amount of time it would likely take to answer it.

The survey was anonymous, which allowed for privacy with responses. There is no area on the survey where a student’s name is included, and the Form Creator website keeps the answers anonymous. All of the questions were also optional, especially any demographic questions, which were asked at the end. We also included a statement about what the survey results would be used for and how to access them in the future. This provides transparency about the study so that all participants are aware of where their information is going and how it will be used. Providing this information for informed consent meant that we protected respondents’ identities and respected their rights to consent or decline to participate in our research.

**RESULTS AND DISCUSSION**

Our analysis examined the three topics of our research questions. We were interested in skill development within the workplace, support and assistance from supervisors, and the connection between student employment positions and students’ post-graduation plans. We used univariate analysis to the dependent variables we created regarding the three topics above, including the indexes, and we used bivariate analysis to look into the relationship between our three topics and students’ demographic categories.

***Research Question 1:* *Do specific characteristics of a students’ identity influence their gain or perception of gain of valuable skills important for being successful in future careers and/or postgraduate studies through their employment at St. Olaf College?***

***Univariate Analysis***

We asked respondents about the extent to which they gained important skills from their work-study jobs, as shown below in Table 1. The specific skills we asked about are based on NACE competencies. Among our sample, 512 respondents answered the questions. While many students have more than one work-study job at a time, the survey guided them to answer questions based on one work-study job only, which we called their “focus job.”

**Table 1. Student Reports of Skill Gains from Work-Study “Focus Jobs”**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Skills** | **(To at Least a moderate extent)** | **To a****great extent** | **To a****large extent** | **To a moderate extent** | **To a small extent** | **Not at all** |
| Oral Communication | (80.3%) | 34.3% | 27.2% | 18.8% | 14.6% |  5.2% |
| Written Communication | (59.9%) | 23.5% | 15.6% | 20.8% | 20.6% | 19.5% |
| Problem Solving | (84.2%) | 31.9% | 29.4% | 22.9% | 10.7% |  5.2% |
| Professionalism | (81.8%) | 27.7% | 27.7% | 26.4% | 13.6% |  4.6% |
| Work Ethic | (82.0%) | 22.1% | 27.8% | 32.1% | 13.8% |  4.2% |
| Leadership | (76.9%) | 28.8% | 26.9% | 21.2% | 15.6% |  7.5% |
| Teamwork | (73.8%) | 26.3% | 23.3% | 24.2% | 17.3% |  8.8% |
| Digital technology | (62.6%) | 19.8% | 20.7% | 22.1% | 18.0% | 19.4% |
| Promotion of equity and inclusion | (63.7%) | 19.0% | 18.0% | 26.7% | 21.9% | 14.4% |

We found that approximately one-third of the respondents reported that they learned oral communication (34.3%) and problem-solving (31.9%) to a great extent. For all of the skills, at least 59.9% and up to 84.2% of students reported skill gains to *at least* a moderate extent. At the same time, it is important to note that approximately one-fifth of respondents did not gain written communication (19.5%) or digital technology skills (21.9%) at all. We also found that more than one-third of the respondents gained skills in promoting equity and inclusion to only a small extent or not at all (36.5%, or 21.9% + 14.4%l. While many students are gaining important skills through their focus jobs to a good degree, others are not fully gaining these skills which are so valuable for students’ post-St. Olaf education and jobs. Our results are similar to findings from Akos (2020), who studied how to help students gain fundamental abilities which will assist them greatly in the transition from college to the workplace.

We created a Job Skills Index by incorporating all of the skills in Table 1. Scores on this index range from 0 to 36, and the distribution of scores is shown in Figure 1 below.

Figure 1. Histogram of Index of Skills Gained Through Focus Jobs

The mean score was 21.66, and scores clustered on the high end. However, as the histogram shows, many students scored below the index midpoint of 18, and 10.7% of students scored 10 or below, indicating overall low skill gains and possibly raising concerns.

Students may benefit from steps that make them more mindful of possible skill gains. For example, job training could inform them about transferable skills they may gain on the job and encourage them to think about specific skills they want to focus on, with more conversation about skills as time goes on.

***Bivariate Analysis - Job Skills Index and Respondent Demographics***

We also examined possible relationships between students’ scores on the Job Skills Index and other variables that may affect students’ job skill gains. We conducted a series of statistical tests to see whether students’ scores varied across demographics such as gender, race and ethnicity, and international/domestic status, as shown in Table 2 below.

**​​Table 2. Job Skills Index and Binarized Demographic Categories**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Demographic and Groups** | **Group 1 Mean Index Score** | **Group 2 Mean Index Score** | **Mann-Whitney U Score** | **p-value** |
| Gender (binarized): 1=female; 2=male | 21.56 | 22.25 | 18459.5 | p>.05 |
| Generation: 1=First generation; 2=Continuing Gen.  | 23.38 | 21.32 | 16772.5 | **p<.05** |
| Race and Ethnicity: 1=BIPOC; 2=White | 22.95 | 21.29 | 19527.0 | p>.05(p=.052) |
| International/Domestic Status: 1=International; 2=Domestic | 23.95 | 21.37 | 10816.0 | **p<.05** |

We conducted Mann-Whitney U tests to compare the Job Skills Index scores across gender (males and females only) and race and ethnicity (aggregated to BIPOC and white) and found no statistically significant differences in average scores, although the p-value for the race and ethnicity test was .052. Gender and race and ethnicity do not appear to be related to job skill gains. However, we did find statistically significant differences across the other two demographic categories.

A Mann-Whitney U test identified a statistically significant difference in average Job Skills Index scores between international and domestic students. The mean score for international students was 23.95, while the mean score for domestic students was 21.37 (p<.05). From these results, we are 95% confident that international students tend to gain more skills through their St. Olaf employment in comparison to domestic students. In considering these results, it is important to keep in mind that they do not mean domestic students are not gaining skills, but rather that international students are making greater gains in the job skills included in the index or have greater recognition of their gains.

We also conducted a Mann-Whitney U test to compare skills gains in the workplace across first-generation and continuing-generation student workers. We found a significant difference between the two groups. The mean score on the Job Skills Index for first-generation was 23.38, while the mean score for continuing generation students was 21.32 (p<.05). Based on these results, we are 95% confident that first-generation students tend to gain more of these skills through their St. Olaf employment in comparison to continuing-generation students or that they are more likely to recognize their growth in these skill areas.

Finally, we also calculated a Spearman’s Rho correlation coefficient for the relationship between respondents’ class year and their scores on the Job Skills Index created with NACE competencies. We found a slight positive correlation (r=.191, p<.001), indicating a significant linear relationship between the two variables. From these results, we are 95% confident that students with higher class rank are slightly more likely to answer that they have gained more skills through their St. Olaf “focus job” compared to students in lower class years. This is unsurprising, as students who are older have had more college and student employment experience to increase their skills and their perceptions of their skill growth. Nonetheless, it is important to think about ways to increase skills through work-study in the early years of college.

***Research Question 2: Do work-study students feel that their supervisors provide assistance and foster discussion about their future careers and/or graduate school endeavors? Does the extent of the supervisor help change depending on different characteristics of the student and their job?***

***Univariate Analysis***

We asked respondents about the extent to which they received support from their supervisors, as shown in Table 3. Among our survey participants, 510 answered the questions.

**Table 3. Supervisor Assistance/Support Index**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Supervisor Assistance Items** | **(Total Agree)** | **Strongly agree** | **Somewhat agree** | **Neutral** | **Somewhat disagree** | **Strongly disagree** |
| My supervisor has asked me about(or shown interest in) my post-graduation plans | (55.1%) | 32.7% | 22.4% | 20.2% | 12.6% | 12.1% |
| My supervisor has helped me think about my future | (44.7%) | 24.9% | 19.8% | 24.5% | 15.6% | 15.2% |
| My supervisor has helped me think about how the skills I’m learning at my “focus job” apply to my post-college work life | (47.9%) | 26.4% | 21.5% | 24.4% | 15.4% | 12.3% |
| My supervisor has helped me develop and/or practice skills for my future career and graduate studies  | (52.6%) | 27.0% | 25.6% | 24.1% | 12.9% | 10.4% |

As the table shows, for each item, about half of respondents (44.7% to 55.1%) answered at least “Somewhat agree.” Additionally, the responses of “Somewhat disagree” and “Strongly disagree” (together) show, that for each of the statements , between 22.3% (12.9% + 10.4%) and 30.8% (15.6% + 15.2%) disagree that their supervisors have supporting them regarding their post-St. Olaf pathways, whether they be careers or graduate studies.

In order to examine students’ overall experiences with supervisor assistance on these items, we created the Supervisor Support Index by summing students’ responses to all four items above. Scores on this index range from 0 to 16.

The distribution of scores is shown in Figure 2 below. The mean score was 9.54, and scores clustered on the high end. However, as the histogram shows, almost half of the respondents (43.5%) scored at the midpoint or below, indicating overall low assistance from supervisors for student-workers’ futures, which may raise concerns.

Figure 2. Histogram of the Index of Supervisor Support for Students’ Future

***Bivariate Analysis***

After looking at participants' responses to our questions in the index of supervisor future support and job assistance, we compared the index scores across different demographics of students, specifically first- and continuing-generation students and different class years of students.

We conducted a Mann-Whitney U test to compare the mean scores on the Index of Supervisor Support for Student’s Future of first-generation and continuing-generation student respondents, and found no significant difference between the two groups (U= 17767.500 p> .05), as shown in Figure 3 below. We also compared the two groups in individual items from the index and found no statistically significant differences. Supervisor support is not related to a students’ first-generation or continuing-generation status.



Figure 3. Mann-Whitney U test for Index and Generation

We were surprised by these results. We had hypothesized that first-generation students would receive significantly more supervisor support because, without the advantage of parents who have been through the college and post-college process to get support from, they might rely more on other adults to help them with college and future related opportunities, and thus seek help from their work supervisors who might be responsive to this help-seeking. Overall, supervisors could increase support for all students’ future careers and graduate school plans.

We also examined the relationship between students’ class year and their scores on the Index of supervisor's future support. We calculated a Spearman rho correlation coefficient for the relationship between the Job Assistance and Preparation Index and the class year of participants and found a weak to moderate positive correlation (r= .236, p<.05; see Figure 4), indicating a significant linear relationship between the two variables. According to the results, we can be 95% confident that participants in higher class years tend to have higher Index scores.



Figure 4. Spearman’s rho test for Index scores and year in school

These results were as we expected. Students in higher class years are more likely to be thinking about their postgraduate future than new college students. Similarly, supervisors are more likely to strike up a conversation about a student’s future with a senior than a first-year. First-years and sophomores are less likely to actively seek supervisor support in relation to their future.. Another explanatory factor could be the length of the relationship between a student and their supervisor. If a senior has been working with the same supervisor since their first year, they are likely to have a closer and more communicative relationship. Colleges may want to encourage these conversations between supervisors and students in earlier years. However, supervisors should be cautious as first-years could easily get overwhelmed by being asked to think about their postgraduate plans.

***Research Question 3: Do work-study jobs influence or reinforce what students intend to pursue post-undergraduate?***

***Univariate Analysis***

We asked respondents about the extent to which they received assistance regarding their future through their work-study jobs, separately from the question about help from their supervisors, as shown below in Table 4. Among our student-worker sample, 504 answered the questions.

 **Table 4. Job Assistance and Preparation for Future Endeavors**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Job Assistance Items** | **(Total Neutral + Agree)** | **Strongly agree** | **Somewhat agree** | **Neutral** | **Somewhat disagree** | **Strongly disagree** |
| My job has helped me gain self-awareness (for example of strengths and weaknesses) | (78.9%) | 37.7% | 41.2% | 15.0% | 3.9% | 2.2% |
| My job has helped clarify or reinforce what I want to do (or NOT do) in my future career post St. Olaf education | (62.2%) | 29.5% | 32.7% | 23.0% | 8.1% | 6.7% |
| My job is similar to what I intend to do after graduation  | (31.9%) | 13.6% | 18.3% | 14.8% | 17.6% | 35.7% |
| My job is preparing me for what I intend to pursue after graduation  | (43.3%) | 19.6% | 23.7% | 15.0% | 16.4% | 25.3% |

Surprisingly, a majority of the respondents agreed with the first two items about their jobs helping them gain self-awareness and clarity about their future (including learning what they do NOT want to do; 78.9%, or 37.7% + 41.2%, and 62.2%, or 29.5% + 32.7%), but this was not the case for the last two items. A majority of respondents disagreed that their work-study job is similar to what they plan to do after graduation (53.3%, or 17.6% + 35.7%, and a majority disagreed or were neutral about their job preparing them for what they plan to do after graduation (56.7%, or 15.0% + 16.4% + 25.3%). This suggests that, although many student-workers are gaining clarity about themselves and what they would like to do in the future, they are not gaining experience that will positively contribute to their field of interest but are perhaps working at a job simply because they need to earn money and have no other options that would align with their future goals/passions.

In order to examine respondents’ overall sense of the extent of the helpfulness of their work-study job in terms of assistance and preparation for their future endeavors, we created the Index of Job Help for Future by summing the scores for all of the items in Table 4. Scores on this index range from 0 to 16. The distribution of scores is shown in Figure 5 below.

Figure 5. Histogram of the Index of Job Help for Future

More than 40 respondents had the maximum score of 16, as shown in Figure 5. However, as the histogram shows, almost half of them (46.4%) scored at the midpoint or below, indicating overall low student gains in terms of their job helping them prepare for their future.

***Bivariate Analysis***

We wanted to examine the “Job Assistance and Prep Index” items to see if students’ responses varied across the demographics of gender, race and ethnicity, and first-/continuing-generation. To do so, we conducted a series of Chi-Square and Cramer’s V tests. Results are shown below in Table 5. Statistically significant differences between demographic groups would suggest questions about equity and inclusion.

For the first item in the Job Assistance and Prep Index, “My job has helped me gain self-awareness (for example, strengths and weaknesses),” we found no statistically significant differences for the demographics we tested, as shown in Table 5. These results are not surprising to us and are what we hoped to see.

**Table 5. Bivariate tests for “My job has helped me gain self-awareness**

**(for example, strengths and weaknesses)” across demographics**

|  |  |  |
| --- | --- | --- |
| **Demographic** | **Chi-Square Value** | **P-value** |
| Gender (Binary Only) | 5.249 | .263 |
| Race and Ethnicity (Aggregated) | 3.276 | .513 |
| First-/Continuing-Generation | 5.514 | .238 |

For the next item, “My job has helped clarify or reinforce what I want to do (or NOT do) in my future career post-St. Olaf education,” we found one statistically significant result, as seen in Table 6.

**Table 6. Bivariate tests for “My job has helped clarify or reinforce what I want to do (or**

**NOT do) in my future career post St. Olaf education” across student demographics**

|  |  |  |
| --- | --- | --- |
| **Demographic** | **Chi-Square Value** | **p-value** |
| Gender (Binary Only) | 2.036 | .729 |
| Race and Ethnicity (Aggregated) | 2.392 | .664 |
| First-/Continuing-Generation | 9.668 | **.046** |

First-generation students were more likely than continuing-generation students to answer Strongly Agree (40% versus 27.3%, respectively) and Strongly Disagree (7.9% to 5.3%), whereas continuing-generation students were more likely than first-generation students to give the mid-range answers of somewhat agree, neutral, or somewhat disagree.

For the third item in the index, “My job is similar to what I intend to do after graduation,” we found no statistically significant results across student demographics, as seen in Table 7. Again, these results are not surprising.

**Table 7. Bivariate tests for “My job is similar to what I intend to do**

**after graduation” across student demographics**

|  |  |  |
| --- | --- | --- |
| **Demographic** | **Chi-Square Value** | **p-value** |
| Gender (Binary Only) | 1.111 | .893 |
| Race and Ethnicity (Aggregated) | 3.945 | .414 |
| First-/Continuing-Generation | 8.958 | .062 |

For our final item in the index, “My job is preparing me for what I intend to pursue after graduation,” we found two statistically significant results, as seen in Table 8.

**Table 8. Bivariate tests for “My job is preparing me for what I intend to pursue after graduation” across students demographics**

|  |  |  |
| --- | --- | --- |
| **Demographic** | **Chi-Square Value** | **p-value** |
| Gender (Binary Only) | 1.694 | .792 |
| Race and Ethnicity (Aggregated) | 9.855 | **.043** |
| First-/Continuing-Generation | 14.917 | **.005** |

We found statistically significant differences in this item between white and BIPOC students and also between first-generation and continuing-generation students. BIPOC students were more likely to Strongly Agree (22% versus 19.6%, respectively) and Strongly Disagree (33.9% versus 22.6%), whereas white students were more likely to answer Somewhat agree, Neutral or Somewhat Disagree. Similarly, for generation, first-generation students were more likely to Strongly Agree (26.6% versus 18.2%) and Strongly Disagree (33% versus 23.4%), while continuing-generation students were more likely than first-generation students to answer Somewhat Agree, Neutral, or Somewhat Disagree. These results suggest that BIPOC and first-generation students tend to have a more polarized experience in terms of their jobs preparing them for their post-graduation plans compared to white and continuing-generation students.

**CONCLUSION AND RECOMMENDATIONS**

Our research aimed to explore these three research questions:

1. Do specific characteristics of a students’ identity influence the extent to which they gain (or perceive that they are gaining) valuable skills for success in future careers and/or postgraduate studies through their employment at St. Olaf College?
2. Do work-study students’ supervisors provide assistance for and foster discussion about students’ future careers and/or graduate school endeavors? Does the extent of supervisor support vary by the characteristics of the student and their job?
3. Do work-study students gain insights for career and graduate study from the job experience itself? For example, do work-study jobs influence or reinforce what students intend to pursue after graduation?

We researched these questions by reviewing previous literature, conducting a pre-survey focus group, and analyzing survey data. While there was previous research on career and graduate school readiness in relation to student employment, it was not extensive. Few articles looked at small, liberal arts schools, and few touched on the supervisor-student relationship and how it can impact skill growth. There was extensive literature about the actual skills needed for future careers and graduate school, but very few studies looked at how those skills developed during undergraduate employment.

As for our results, we found fairly positive levels of skill gains, although this differed across demographic groups. For the job-related skills, at least 59.9% of students reported gaining those skills to *at least* a moderate extent. However, both international and first-generation students scored higher on skill gains in the workplace compared to domestic and continuing-generation students. These differences were statistically significant. Regarding supervisor support for students’ futures, 44.7% to 55.1% of students agreed that they receive support from their supervisor(s), depending on the specific type of support we asked about. There was no significant difference in supervisor support for students by generation or race and ethnicity (aggregated), which is a positive finding. Students in higher class years had higher scores in supervisor support. This is unsurprising because seniors may be more likely to engage in conversations with their supervisors about their future, their skills, and their resumes since they are closer to graduation. At least 31.9 % and up to 78.9% of students agreed that their jobs help prepare them for future endeavors, with percentages varying with the specific nature of the preparation. First-generation students reported higher percentages of *strongly agree and strongly disagree* compared to continuing-generation students in two items of the Job Assistance and Preparation Index, compared to continuing-generation students: gaining clarity about what they do and do not want to do after graduation, and that their work-study job helped them prepare for what they plan to do after graduation. BIPOC students were more likely than white students to strongly agree or strongly disagree that their work-study job helped prepare them for what they plan to do after graduation.

Our research has several strengths and limitations. We achieved our desired response rate, 24.8%, and the demographics of our respondents were consistent with the demographics of the St. Olaf student population, so we are able to generalize our results to the entire population of student workers at St. Olaf. We also conducted a focus group with St. Olaf student workers to gain insight for constructing our research questions so that our survey would produce the information we needed in order to help improve the experiences of student workers on campus. However, we were unable to compare on-campus and off-campus student employment for students. We also faced the potential for bias due to our own personal experiences with student employment which could limit our perspectives on the survey questions.

Overall, the research we conducted provides useful insight regarding the career and graduate school readiness that student employment provides and regarding how well the supervisors and the jobs themselves provide that preparation. Our research helped address the gaps in the scholarly literature and can help St. Olaf College create a better and more future-oriented student employment program.

**Recommendations**

Based on this research, we make the following recommendations to St. Olaf College and specifically to those involved with campus employment:

1. Encourage more positive reinforcement from employers/supervisors to student-workers that the work being done is important and typically consists of the development of skills that are transferable beyond the walls of the workplace. Students are often gaining valuable skills and experiences without realizing it, so providing that realization will make the entirety of student employment more impactful.
2. Create a system for supervisors to give students a list of skills they should be learning or developing at their job, the means by which they will be developing these skills, and how the skills could be transferable for future opportunities. This will help students be aware of the skills they should be learning throughout their entire work experience and help them be more intentional about learning those skills.
3. Develop a system for students and supervisors to connect more regarding work. This will improve communication and enhance students’ job experiences and preparation for the future.
4. When posting descriptions for on-campus jobs, provide information about possible fields a job and its transferable skills could apply to. This would be more helpful for students looking for work that will transfer over to their career of interest.

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**Appendix A: Frequency Tables for the Indexes**

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