Integration of Career Competencies into the Undergraduate Curriculum: A Review of Data and Best Practices for Educators

Natalia Smirnova
University of Connecticut
Email: natalia.smirnova@uconn.edu

Craig Calvert
University of Connecticut
Email: craig.calvert@uconn.edu

Kaitlyn Anderson
University of Connecticut
Email: kaitlyn.anderson@uconn.edu

Svetlana Kalnova
University of Connecticut
Email: svetlana.kalnova@uconn.edu

Abstract

This paper provides a theoretical framework for building awareness of career competencies by integrating them into the curriculum. A transition mechanism between faculty awareness and students' articulation of career competencies was developed. Due to its versatility, this approach was named "Career Competencies Across the Curriculum", and it can be modified to fit in any undergraduate classroom. This work identifies various methods of career competencies' integration into the curriculum and provides examples of syllabi language, learning objectives' alignment, assignments and activities that have worked successfully in the classroom. This approach was developed as a tool for educators to use and share within their school.

Keywords: Career competencies, Undergraduate education, Curriculum integration, Articulation gap

1. Introduction: Motivation and Importance

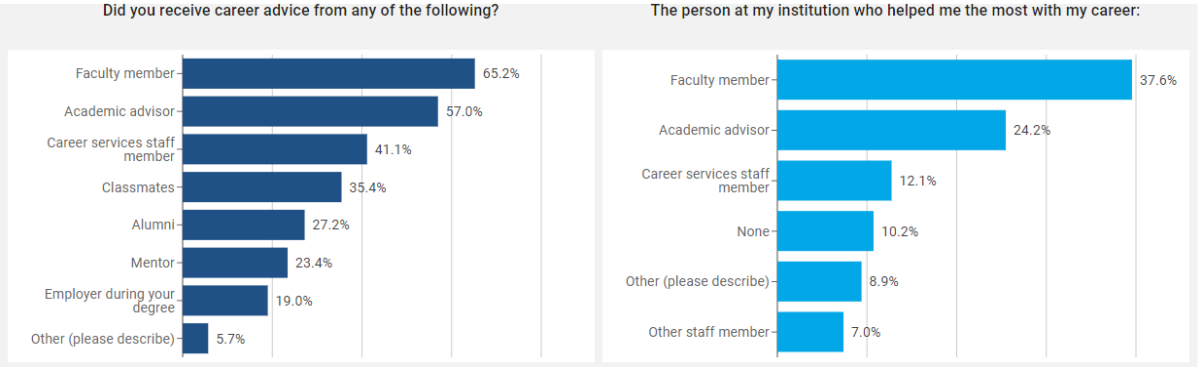
To successfully transition from college to career, students not only need to develop competencies and skills that are demanded by employers but also be able to articulate their skillset during the job application process and showcase their competencies on the job. However, according to research by the National Association of Colleges and Employers (NACE, 2023), students struggle to articulate to employers what career competencies they have acquired during their undergraduate studies. There is a need for usable resources for higher education instructors to increase not only student awareness but also student proficiency in the competencies. This article reviews current data and provides examples of activities used successfully in the college classroom.

The National Association of Colleges and Employers has a long-standing history of setting standards and best practices in areas of career development, recruitment, and employment through quantitative research. NACE conducts research and collects data on

employment trends, salaries, hiring practices, and other relevant topics. Colleges can use this data to inform their career services offerings, curriculum development, and advising strategies. Overall, colleges use NACE as the go-to resource to enhance the quality of their career services programming and partnerships, better prepare students for the job markets, and strengthen their relationships with employers.

Faculty are the trusted source of career advice for students. According to the 2020 National Alumni Career Mobility (NACM) survey, 65% of a public, large R1 university's graduates said that they have received career advice from faculty, and 57% of graduates said that they have received career advice from their academic adviser (see Figure 1) (NACM, 2020). Therefore, faculty emerges as a high impact leader in helping students transition skills from the classroom to their careers. However, according to a Large Public R1 University survey, around 74% of faculty are unfamiliar with career competencies.

Figure 1: Career Advice for Students: Large Public R1 University, 2020.



Source: National Alumni Career Mobility (NACM) Survey (2020)

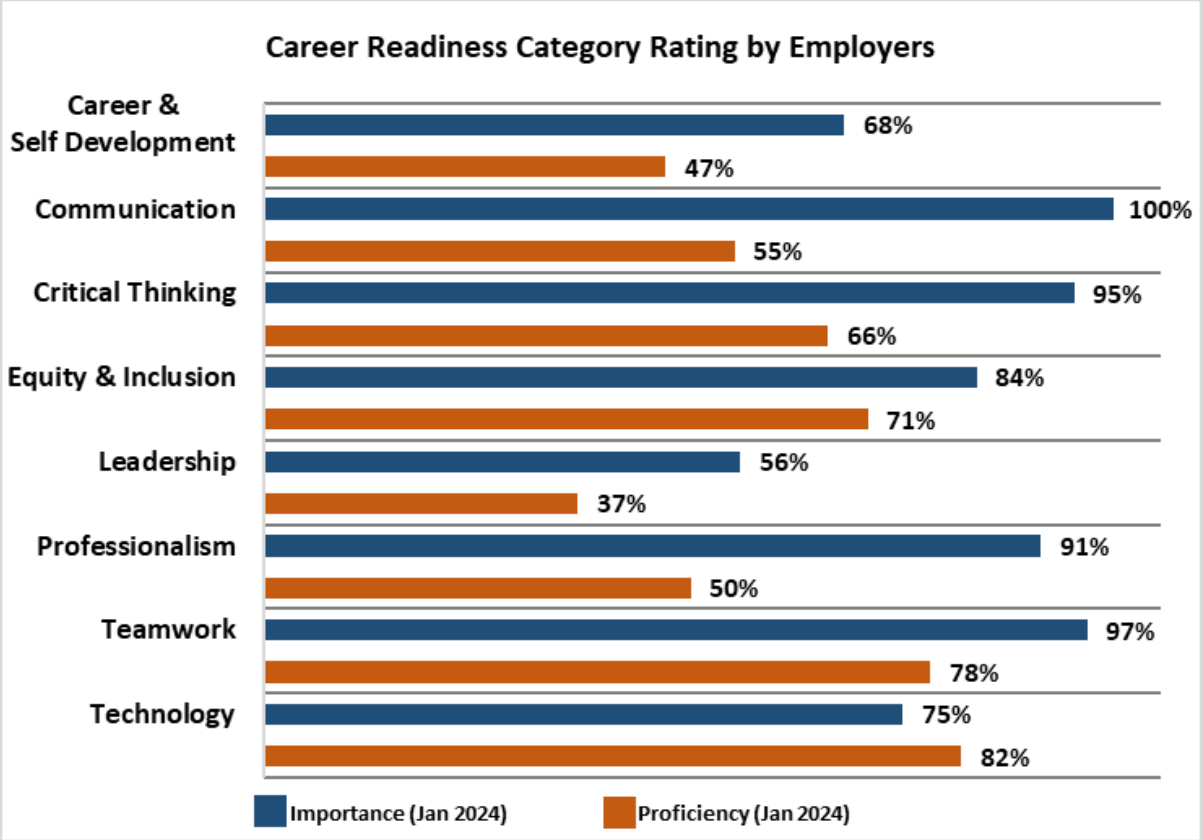
Thus, the problem is that faculty are not aware of the career competencies, and though they may be already practicing the soft skills related to the competencies in their classes, they are not articulating and aligning them with their curriculum. As a consequence, students are unable to articulate these skills within application materials and at the job interview. The importance of this paper is in bringing this disconnect forward and providing ideas on how to help faculty integrate career competencies into their courses. This will subsequently improve students' ability to be successful in their job search at the start of their career.

The paper is organized as follows. The Literature Review section summarizes research and data on the mismatch between employers' demands and students' proficiencies. This section also outlines emerging strategies that could be helpful in closing this gap. The Methodology section develops the transition mechanism framework, which is the essence of the Career Competencies Across the Curriculum approach. The Application section showcases data and evidence of the impact of this approach on students' success. The Conclusion section discusses the limitations of this approach and provides ideas for future research.

2. Literature Review: Mismatch and Corrective Strategies

A key source of data on career competencies is the National Association of Colleges and Employers (NACE). This professional organization connects thousands of college career service professionals and regularly reports data on college employment. An important NACE publication used for the analysis in this paper was the NACE annual job outlook report. In these reports, different data sets have been collected from NACE and industry professionals. These reports are published in the fall with a spring update.

Figure 2: Mismatch between Importance and Proficiency on Career Readiness Competencies (2024 data)



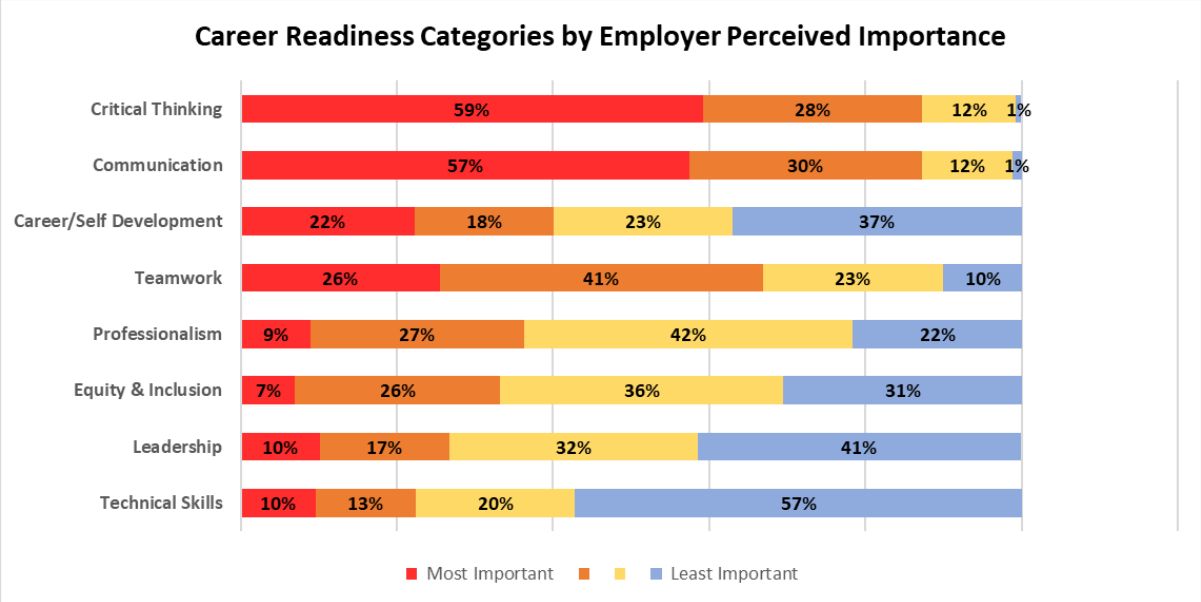
Source: NACE 2024 Job Outlook.

Note: This chart shows the importance as rated by employers and the proficiency as rated by employers for the 2024 data. The percentages corresponding to "importance" represent, among all responding employers, the percentage that, on a five-point scale, indicated that the respective competency was either "very important" (4) or "extremely important" (5) for college graduates to have to enter their workforce. The percentages corresponding to "proficiency" represent, among all responding employers, the percentage that, on a five-point scale, rated recent graduates either "very proficient" (4) or "extremely proficient" (5) in the respective competency.

The NACE job outlook reports contain many useful data sets. One data set looks at the employer's stated importance of job skills versus the employer's stated proficiency of job skills for new hires. Figure 2 shows the categories and the ratings by the employers, and Figure 3 breaks each category down by the importance. The stated proficiency of employers may not be a real lack of skills, but it can reflect a student interviewee's or a new hire's ability to articulate their competency skill set. The mismatch between students' ability to articulate career competencies they have acquired at college and employers' demand for those competencies is well documented. The NACE 2024 job outlook data from September 2023 and NACE 2023 job outlook data from October 2022, Figure 2, shows that in all competencies, except Technology, students' proficiency is lagging behind the importance to employers. Figure 3 shows that Critical thinking and Communication were both rated highest for importance. Figure 4 shows the difference between the employer's stated importance and the employer's stated proficiency. The biggest gap was recorded in the Communication (44%) and Professionalism (41%) competencies. This disconnect between the material taught and the ability of students to articulate their skills to employers needs to be alleviated. This can be alleviated through informing college instructors of this mismatch and providing resources to help faculty better

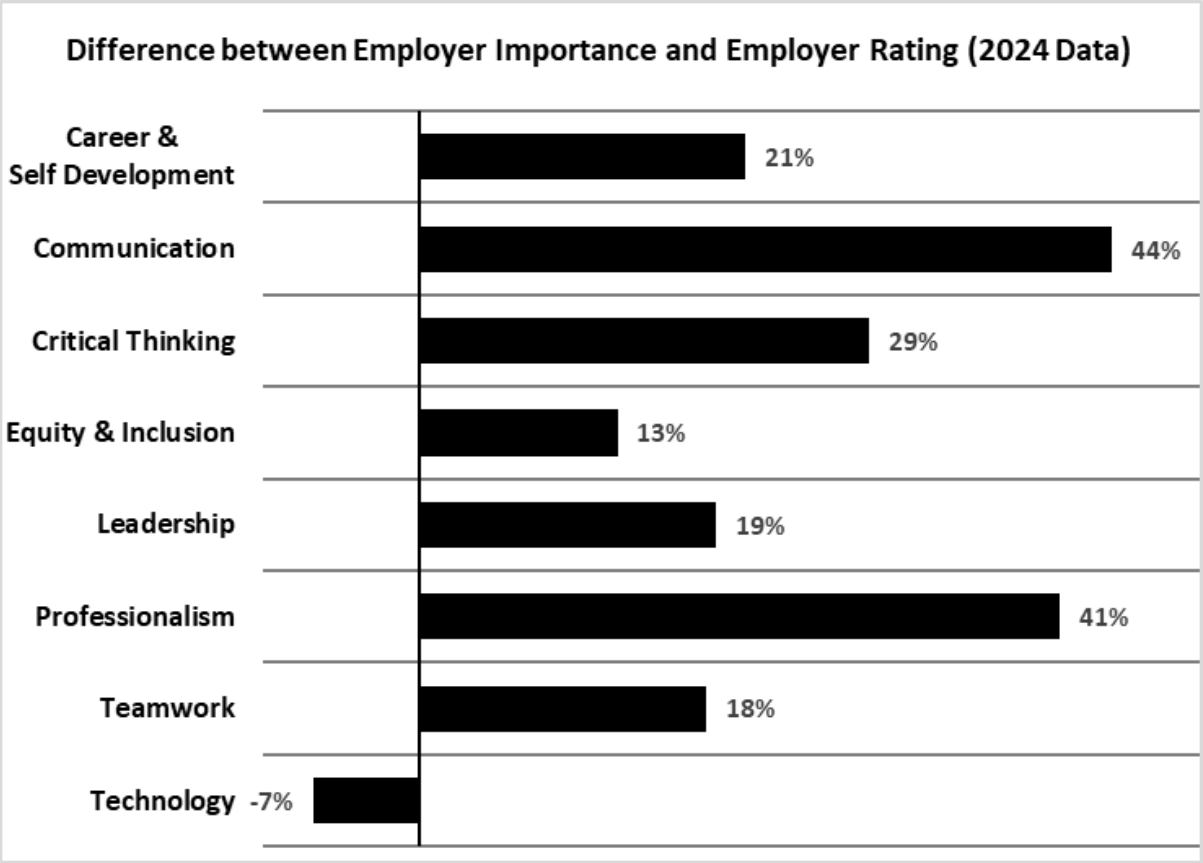
articulate how their curriculum imparts career competencies. The integration of career competencies in the curriculum and the articulation of such integration by instructors will help students articulate their skills to employers.

Figure 3: Importance of Career Competencies



Source: NACE Job Outlook 2023, Spring Update.

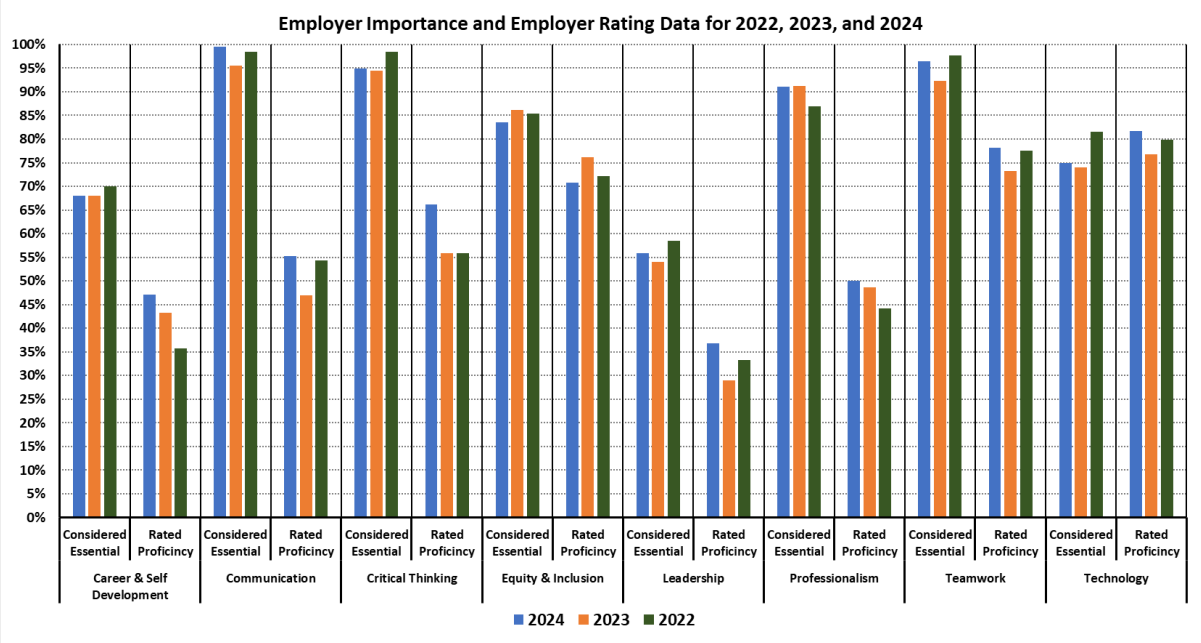
Figure 4: Difference between Employer Importance and Proficiency (2024 data)



Source: NACE 2024 Job Outlook (September 2023), NACE 2023 Job Outlook (October 2022).

Further analysis comparing the data from the previous three years shows that the data is relatively consistent. Figure 5 shows the data for the last three years. Older data is not included, as the competency categories were changed in 2020. The employer's importance data showed little change over the three years of data. This indicates that employers were consistent in their stated importance for each NACE competency category. There are two potential trends in the data. The data for rated proficiency in the Career and Self-development category has shown an upward trend from 36% to 43% to 47%. A smaller trend is shown for the rated proficiency in the Professionalism category, showing improvement from 44% to 49% to 50%. Future data will help identify if this is a trend. The lack of improvement in the other categories is a strong indicator that the perceived employer rating needs to be addressed.

Figure 5: Employer Data from 2022, 2023, and 2024



Source: NACE 2024 Job Outlook, NACE 2023 Job Outlook, and 2022 NACE Job Outlook.

The National Alumni Career Mobility (NACM) Annual Report of a public, large R1 university graduates survey (2022) collects data on alumni careers and other post-graduation information. Part of this report is a section on High Impact Career Practices. That section of the report has alumni identify what practices contributed most to their professional success. Table 1 shows the top 9 practices. It can be seen that the third highest High Impact Career Practice was "receiving helpful career advice from faculty" (NACM, 2022, p.5). Table 1 also shows that a high percentage (89%) of respondents reported to the NACM survey that faculty's advice was helpful to their careers. The faculty advice was higher than career service advice, internships, and networking, three practices that are commonly thought of as having a high impact.

Faculty, thus, emerge as a trusted source of career advice for students. The impact of faculty can take several forms, such as advising, mentoring, and teaching. While during an advising session there are many opportunities to introduce students to careers in their selected field, the actual instructional time is rarely used by faculty to extend the career advice. The American Association of State Colleges and Universities (AASCU, 2021) reports that "in

addition to equipping faculty to engage in career advising conversations and activities, efforts have been made to integrate career advising into the classroom experience as well. While there is at times resistance among liberal arts faculty to discuss "career" within their context, effective integrations have helped faculty connect skills to students' futures, whether the next step is graduate school or a first job" (AASCU, 2021, p. 39).

Table 1: Engagement in High Impact Career Practices

NACM High Impact Career Practices	***Percent of Respondents Reporting It Being Helpful to their Careers***
Helpful career advice from employer	92%
Learn critical thinking	90%
Helpful career advice from faculty	**89%**
Receiving helpful career advice overall	83%
Helpful career advice from career services	75%
Internship related to current career	61%
Understanding career opportunities	54%
Networking with employers	41%
Creating a career plan	40%

Source: NACM 2022, pp. 5 and 17.

AASCU (2021) documents that embedding career advising into instruction and curriculum is one of the most mentioned trends across focus groups, current literature, and individual interviews. The growing body of evidence shows that the potential for faculty to have a substantial impact on the long-term well-being and career mobility of students is substantial (AASCU, 2021, p. 38).

The skills and competencies identified as important for student success are the NACE Competencies (NACE, 2021). This paper focuses on the eight NACE competencies presented in Table 2.

Based on Figure 3, which shows the data on the importance of each of these competencies to employers, faculty might decide to prioritize some competencies over the others in their instruction based on the field of study, course level, and course-based learning objectives.

The practices of embedding career development stages into current and new curricula and instructional activities are growing, and the evidence of the positive impact of these practices on students' learning outcomes is expanding. Brodka, Kruger, & Porterfield (2023) report results from the survey of SUNY-Buffalo students who were exposed to career competencies integration into their course assignments. At the end of the course, 79% of students strongly agreed with the statement "I felt more motivated to complete my assignments by having them tied to career readiness competencies", and 88% of students strongly agreed with the statement "I would like more of my courses to focus on career readiness".

Based on the review of the literature, this paper is aimed at (1) creating a theoretical framework for the "Career Competencies Across the Curriculum" approach, and (2) sharing various successful methods of integration of career competencies into the curriculum.

Table 2: National Association of Colleges and Employers (NACE) Career Competencies

Career Competency	**Definition**
1. Career and 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 outside one's organization.
2. Communication	Clearly and effectively exchange information, ideas, facts, and perspectives with people inside and outside of an organization.
3. Critical thinking	Identify and respond to needs based upon an understanding of situational context and logical analysis of relevant information.
4. Equity and 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.
5. Leadership	Recognize and capitalize on personal and team strengths to achieve organizational goals.
6. Professionalism	Knowing work environments differ greatly, understand and demonstrate effective work habits, and act in the interest of the larger community and workplace.
7. Teamwork	Build and maintain collaborative relationships to work effectively toward common goals, while appreciating diverse viewpoints and shared responsibilities.
8. Technology	Understand and leverage technologies ethically to enhance efficiencies, complete tasks, and accomplish goals.

Source: NACE, 2024.

2.1 Faculty Involvement in Students' Career Success

The Center for Career Development at a large public R1 university was interested in faculty and staff involvement in student career success. To measure this, a survey was sent out to university personnel, referred to as the Faculty/Staff Survey. The respondents included faculty, staff, graduate students, and "other." The results were then broken down by Career Champions and non-Career Champions. The summary of respondent data to this survey is included in Table 3.

Career Champions are university-affiliated partners that are committed to being part of a community that actively assists students in determining and reaching their career goals. These stakeholders advocate for incorporating career development, career readiness, and career competencies into all facets of the University student's experience, in what is called Career Everywhere at one large public R1 university. An individual is identified as a Career Champion when they complete an enrollment form voluntarily expressing interest to be part of this

community. The Center for Career Development creates and delivers best practices, up-to-date hiring trends, and markets support services to assist Career Champions and university partners to ensure all university students are "Career Ready" at graduation.

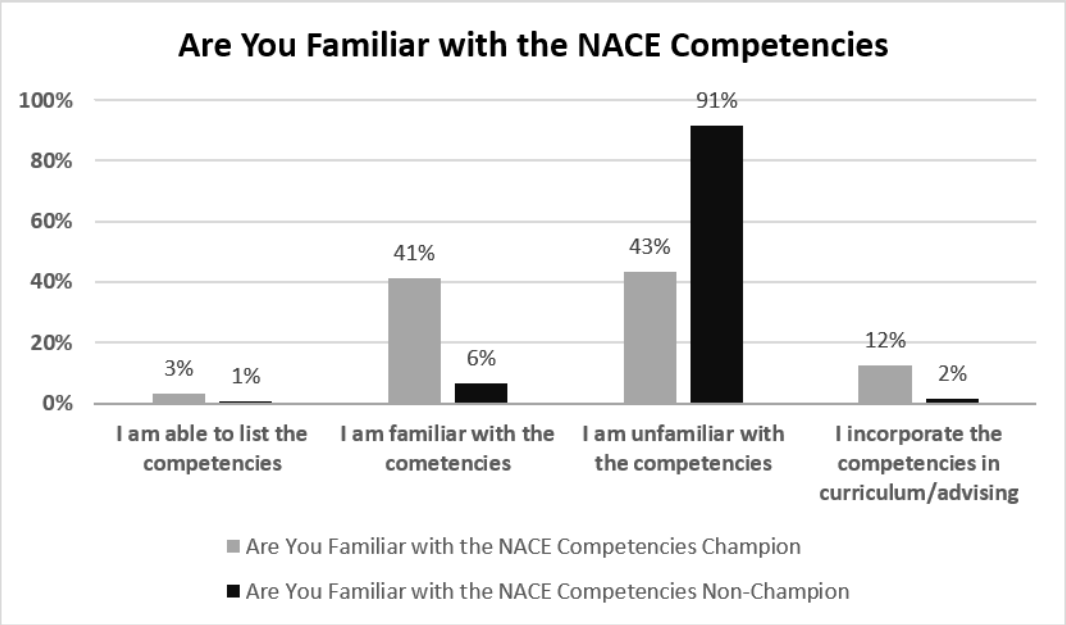
Table 3: Statistics of Survey Participants by Category (Large Public R1 University), N=514

Role	Career Champion		Non-Champion	
	Count	Percent	Count	Percent
Faculty	92	50%	173	52%
Other	5	3%	5	2%
Staff	87	47%	138	42%
Graduate Assistant	0	0%	14	4%
Total	***184***	***100%***	***330***	***100%***

Source: University Career Center Faculty/Staff Survey, 2023.

Beyond the awareness and referral of the Center for Career Development's services, the Faculty/Staff survey asked respondents about their awareness level of the NACE Career competencies. Figure 6 illustrates that 91% of non-Champions are unfamiliar with the NACE Career Competencies, compared to 43% of Career Champions being unfamiliar. This demonstrates the effectiveness of the resources and training provided to Career Champions by the Center for Career Development. Through internal newsletters, training, and events, Career Champions are provided with up-to-date information on career competencies. External information such as research reports, career service offerings, and employer insights provide additional information on career competencies to Career Champions. However, the fact that more than half of Career Champions and almost all non-Champions are unfamiliar with competencies that are required by employers justifies the goal of this paper of developing a framework and sharing authors' ideas on how to close this knowledge gap.

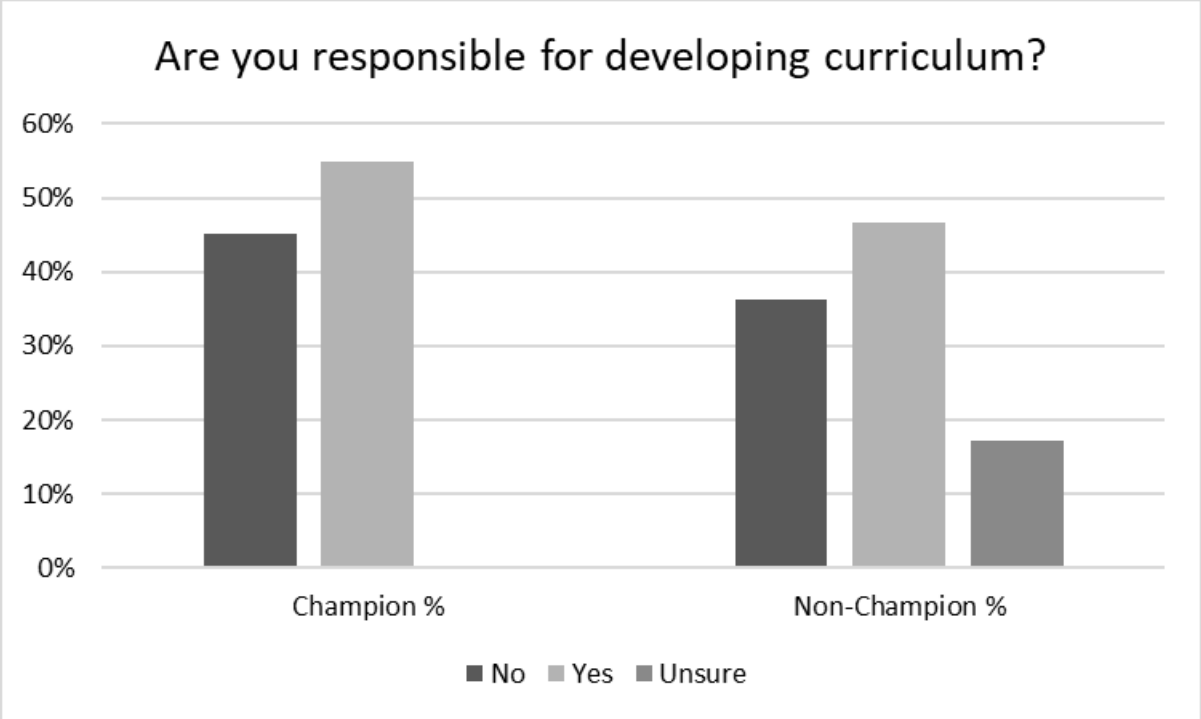
Figure 6. Familiarity with NACE Competencies



***Source:** University Career Center Faculty/Staff Survey, 2023*

Further analysis of the Faculty/Staff survey provides additional insights. Understanding that some roles at the university are not in direct control of the curriculum, survey respondents were asked, "In your role, are you responsible for developing curriculum?" The results in Figure 7 show that 55% of Career Champions and 47% of non-Champions are responsible for curriculum development. This shows that for approximately half of Champions and non-Champions, there is no barrier for competency integration in the curriculum - with respect to control over its development. Being aware that career competencies are identified through NACE research, understanding their importance in the career development of their students, and strategizing curriculum methodology that allows students to articulate their enhancement of these skills should be a priority in curriculum development for student success post-graduation.

Figure 7: Responsibility for Developing Curriculum



***Source:** University Career Center Faculty/Staff Survey, 2023*

Another Faculty/Staff survey question asked respondents responsible for developing curriculum about how they are incorporating career competencies in the curriculum. The responses are summarized in Table 6. A larger percentage of Career Champions are incorporating career competencies into their curriculum than non-Career Champions. Another interesting finding in Table 6 is that a larger percentage of non-Career Champions are inviting guest speakers from industry to speak with their classes on specific industry topics. This should help students better understand "A day in the life in…" from these speakers. Using guest speakers also generated the second largest response of Champions, noting that it is a highly used strategy in career integration, with the top response being inviting guest speakers from the Career Center to talk about career related topics. Non-Champions are finding value in having someone come in to talk about their career.

Table 6: Incorporating Career into the Curriculum

Incorporating career into the curriculum	**Champion %**	**Non-Champion %**
Including NACE Career Readiness Competencies into course learning objectives	29%	3%
Incorporating discussion questions regarding career-related topic into small group work	30%	33%
Incorporating discussion questions/reflection regarding career-related topic into HuskyCT posts	23%	22%
Inviting guest speaker from industry to talk about specific industry topics	35%	57%
Inviting guest speaker from the Career Center to talk about career-related topic(s)	37%	15%
Utilizing career-related modules developed by the Career Center	20%	4%
Other	17%	35%

Source: University Faculty/Staff Survey, 2023

The evidence from the Faculty/Staff survey at the Large Public R1 University points to the faculty's and staff's gap in knowledge about career competencies and career services offered within the University. Combined with the national evidence that faculty is the main source of career advice for students, it can be concluded that there is a need to educate faculty about the NACE Career Competencies and about Center for Career Development's career readiness programs to positively impact students' success during the job search process.

3. Methodology: Transition Mechanism

The Literature Review section of this paper provides data indicating that students cannot articulate to employers what career competencies they have acquired during their university coursework. In addition, the majority of faculty are not aware of these competencies even though they may be teaching them in their courses. The Literature Review section also provides empirical evidence that students and alumni report that faculty are the first line of inquiry about potential careers in a selected field.

This paper proposes a 4-step transition mechanism to facilitate career competencies integration into the curriculum. This mechanism will help students become more career ready and able to articulate career competencies. This 4-step transition mechanism is shown as a process in Figure 9 and detailed below.

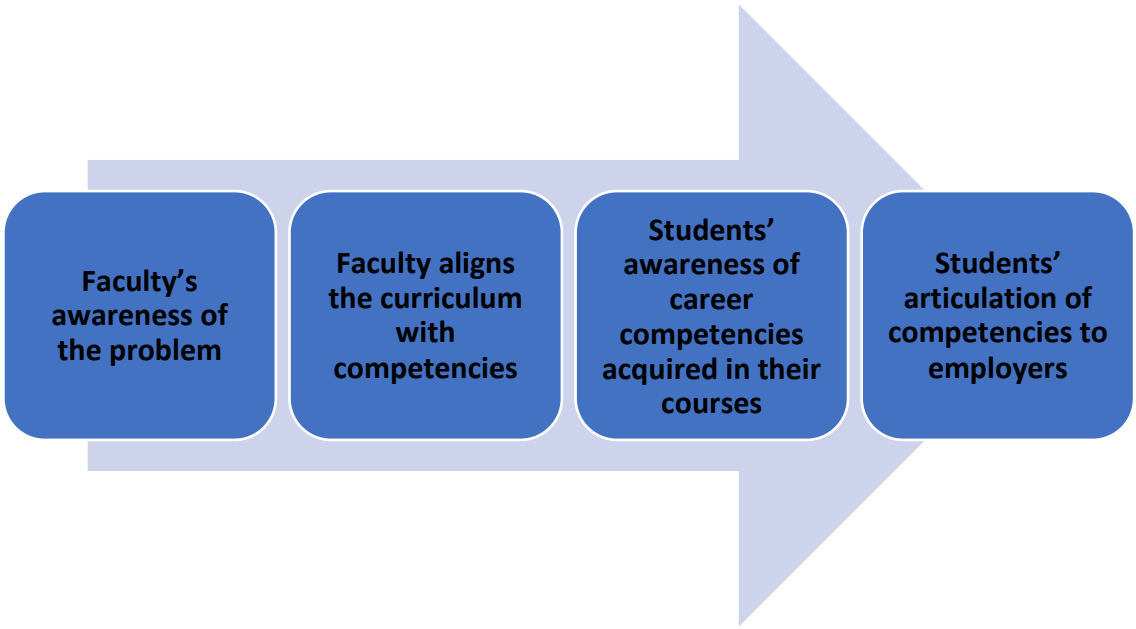
To help understand the process shown in Figure 9, the following set of definitions was developed and called the **4As**:

I. **Awareness**: Staying up-to-date on best practices and trends by collaborating with the Career Center and utilizing resources developed by the Center for Career Development. Use NACE competencies in oral and written communications with students.

II. **Alignment**: Matching competencies with curriculum, learning objectives, assignments, lectures, research, field experiences, etc. Making the connection for students allows them to absorb how competencies play a role in their learning and future career.

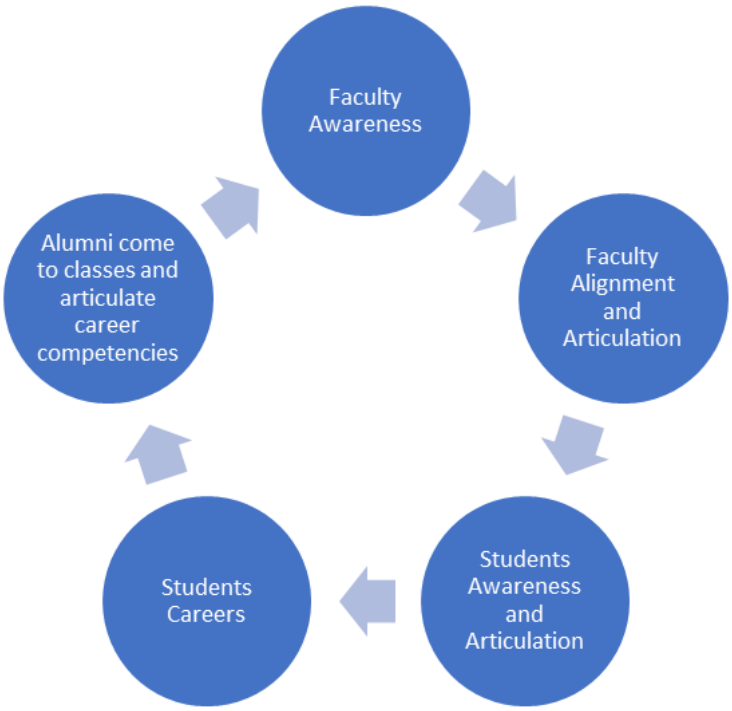
III. **Articulation**: Encouraging and involving students in the process of connecting career competencies to coursework. Having students reflect on the process of developing competencies and on how competencies elevate learning.
IV. **Assessment**: Allowing time for self-assessment and reflection on competency development. Assessing how well students articulate these competencies in preparation for post-graduation success.

Figure 9: Awareness – Alignment -- Awareness - Articulation Process



A feedback loop diagram is proposed to clarify the 4A's. This model is shown in Figure 10. While the user can begin anywhere to start integrating career competencies, the description of this diagram will start with the Faculty Awareness node. This step includes the suggested faculty role as the catalyst of the integration process. It also includes awareness of best practices and trends, collaboration with the Center for Career Development, and use of NACE competencies in communication with students. The next step is Faculty Alignment and Articulation of the career competencies through their curriculum and articulation of the alignment with students. This could be done by appropriate syllabus language, course assignments' language, special assignments related to career, and career class presentations. Examples of methods to articulate career competencies for students are presented in the next section. The next step in the process will be made by students. With the help of faculty, students will become aware of competencies and will learn to articulate them in their assignments, at interviews, and during their careers. Finally, the circle completes when former students articulate the career competencies that are needed in jobs to the faculty, which increases faculty awareness of the desired career competencies. As Figure 10 indicates, the ongoing process of assessment and feedback loop will help faculty, Center for Career Development staff, and other university employees refine and coordinate the efforts of competencies integration. This is done in addition to analyzing the impact on students through annual after-graduation surveys.

Figure 10: Feedback Loop Process of Assessment of Career Competencies' Integration in the Curriculum



4. Application: Career Competencies Across the Curriculum

Infusing career competencies into the course framework helps students view the process of learning through career-focused lenses, which prepares them for a successful transition to the professional world (NACE, 2021). There are several ways that faculty can integrate career competencies into their curriculum, starting from including the competencies into the syllabus language, aligning corresponding competencies with course learning objectives, and highlighting them in specific assignments and semester-long projects.

4.1 Syllabi Language Identifying Competency Development

The first step to intentionally infuse career development into your curriculum is to include career-relevant language in your syllabus. Adding the career language below into the syllabus will introduce students to the important career-related skills and add value to your courses from the first day.

"Identifying and articulating the NACE Career Competencies technical and transferable skills you acquire in this course are critical to becoming career ready and your success both as a student and post-graduation. In this syllabus, opportunities have been noted where you can enhance and gain the Career Competencies and skills that employers and graduate programs are seeking. This will occur via assignments and class discussions and will contribute to your ability to identify and articulate these competencies and skills when applying for leadership roles, internships, jobs and graduate school". (Career Center, Large Public R1 University, 2024). The syllabus's career integration language could be modified for humanities, STEM, and common/Gen Ed curricula. See more examples in Appendix 1.

4.2 Aligning Course Objectives with Career Competencies

The second step in articulating career competencies in a course is to align your course objectives with corresponding competencies and create an inventory of the competencies for future use in the activities and assignments (see Appendix 2).

Course objectives are used as a guide in the learning process to help the learner focus on specific expectations and goals that are measurable. By being transparent about expectations of learning, students become encouraged to take more control of their learning. The same benefit holds true for the NACE career competencies. Divulging the purpose, task, and/or evaluation of the learning before work begins boosts a student's academic confidence, sense of belonging, and skills valued most by employers, as found by Winkelmes et al. (2016). Furthermore, Walton and Cohen (2011) showed a student's persistence increased as did their grades if they had an increased confidence and sense of belonging. Figure 11 shows an example of alignment of course learning objectives with NACE competencies.

Figure 11. Aligning Course Learning Objectives with NACE Competencies

1. Identify job/internship opportunities. (Career & Self Development)
2. Working individually and with peers, instructors, and guest lecturers to develop and execute a strategy for obtaining a research internship in a non-academic setting such as private industry, a high-tech start-up, or in a national lab. (Teamwork, Critical Thinking, Equity and Inclusion)
3. Form a cohort/network/community/peer group within the class to support and mentor each other for success and to enhance active participation and build teamwork. (Communication and Teamwork)
4. Identify effective practices for job application and networking. (Critical Thinking)
5. Create an impressive resume, cover letter, and LinkedIn profile (Technology and Professionalism)
6. Identify the requirements and procedures for job opportunities for international students. (Critical Thinking, Equity and Inclusion)

4.3 Aligning Assignments with Career Competencies

Aligning assignments is another way to make students aware of the career competencies that they practice in your class. When developing an assignment, look over the list of NACE career competencies. You may already have several competencies present in your assignments; however, you need to take an extra step to articulate it to your students. Each assignment within your course has students developing many of these skills, but students are not always cognizant of the specific skills they are developing. If there are multiple competencies being targeted, prioritize the top three and specifically state them on the assignment by utilizing the footnote, learning objectives, or rubric. Appendix 3 contains an example that transparently states the competencies being enhanced within the assignment.

4.4 Processes of Aligning Class Activities with Career Competencies

The last step is to develop specific assignments that include competencies. To assist with this step, it is usually helpful to create a curriculum map to align activities and assignments with career competencies. This exercise completes the assessment loop, where faculty checks how their course materials align with specific career competencies and analyzes potential opportunities to include other competencies. An example of such a curriculum map is presented in Table 7. The example map is for an example course. To develop this map, list the NACE competencies on the left, and then list the planned course activities along the top. For each activity place an "X" in the box corresponding to the applicable competency. The total activities using a specific competency can be added for each row. The total competencies in

each activity can be added for each column. These two totals provide insight into the distribution of competencies throughout the course. It should be noted that there is no correct number of competencies to include in the course. This depends on the instructor's preference for how many competencies to include and where to include them. It should also be noted that not all the course activities need to be graded. For instance, the "Outside Company Talks" activity may not be graded, but since it is part of the course material, it should be included in the analysis. Activities that are specifically career-oriented, such as career reflection can be included to complement technical-focused assessments such as the mid-term. When developing this course, the instructor might have noticed that Equity & Inclusion was not included in the course. This could have prompted the instructor to include it in In-Class Group Activity 3. Further analysis shows that the Group Case Analysis includes seven of the competencies. This might require special attention, because it might be difficult to include seven competencies in one activity. Some general examples are provided below to highlight the use of this table. See Table 7 as a sample table.

Table 7. Example of Course Mapping of Career Competencies for an Example Course.

Competency Map: EDUC 1000 - Example Course / **Course Actvity** / **Career Competency**	In-Class Career Reflection	In-Class Group Activity 1	In-Class Group Activity 2	Mid-Term Exam	In-Class Group Activity 3	Group Case Analysis	Outside Company Talks	Outside-Class Activity	Final Exam	***Total Competencies***
Career/Self Development	X					X	X	X	X	***5***
Communication		X	X		X	X				***4***
Critical Thinking		X	X		X	X		X		***5***
Equity & Inclusion					X					***1***
Leadership			X		X	X				***3***
Professionalism						X	X	X		***3***
Teamwork		X	X		X	X				***4***
Technical Skills		X	X	X	X	X			X	***6***
Total Competencies	***1***	***4***	***5***	***1***	***6***	***7***	***2***	***3***	***2***	***31***

4.4.1 Semester-Long Projects

One way to incorporate career skills is an assignment that turns the student's job search or career path into a semester-long project (Calvert, 2021). This assignment was developed for an undergraduate project management course to reinforce project management tools and techniques. The career aspect was added to connect the course to something that the student is personally involved in. Through the process of completing this project, students are formally or informally introduced to the skills needed for career preparation. The student responses regularly contained phrases about not being prepared and not knowing the amount of work that goes into planning a career. This assignment ties into the 4A's Articulation section and the Career & Self Development Career Readiness Category. These ties are evident by the fact that the student is learning awareness of skills needed and the steps needed to be "career ready."

4.4.2 In-Class Activities

In-class activities are a method to connect career competencies directly and indirectly with course material. The activities could directly connect by having students practice technical skills and perform critical thinking. Technical skills can be practiced by students using relevant computer programs, performing calculations, or following processes. Critical thinking can be accomplished through providing problems that need to be solved using skills from the course. Indirect connections to the Communication, Equity & Inclusion, Leadership, and Teamwork competencies can be accomplished through activities that teach the course material using these skills. For instance, group work can require students to use all the competencies labeled as indirect above. Changing an activity from an individual assignment to a group assignment allows the student more practice with career competencies. This seemingly simple change can help students practice their competencies. This is particularly important for fields such as engineering where many assignments can be completed individually.

Some examples of in-class activities from different disciplines that use career competencies are included next. (Calvert, 2024, 2020; Patterson, Calvert, Mocarsky, Cho, & Harmon, 2023):

Example 1: In a project management course, the teacher has profession/industry experience. While developing weekly group cases, weekly group case studies were written based on the instructor's experience. Real scenarios are presented for students to solve.

Example 2: In an operations management course, the activity can be modified to align it more with career skills. This can be accomplished by adding a more realistic scenario or simulating the choices needed in a business setting.

Example 3: A sports economics course included an activity that presented the course materials using a method that required students to use more advanced data analysis techniques to improve career readiness.

Example 4: Other examples of the in-class activities can be simulations, where students work in teams and use hands-on learning in real-life situations.

4.4.3 Out-of-Class Activities

Out-of-class activities could also be aligned with career competencies. It is important to identify the competencies and articulate them for students, so as they complete activities, they are aware of the competencies they have mastered. For example, if there is a career fair at your university, you can turn it into an out-of-class activity, asking students to research the participating companies and participate in networking. You can also turn it into the in-class role play assignments, asking some students to play the role of the company recruiters. Appendix 4 gives an example of a Career Fair pitch that your students can adjust to fit their needs. It covers Communication, Career/Self Development, and Professionalism.

4.4.4 Portfolios

Portfolios are a great example of showcasing the students' work to potential employers. Students can create digital portfolios or upload their work to their LinkedIn accounts.

4.4.5 Experiential Learning

An experiential learning class, such as an internship or a service-learning course, is another example of showcasing a combination of competencies.

4.4.6 Equity & Inclusion

This can be a difficult competency to indirectly include in learning activities depending on the course. This would be truer for technical courses such as science and engineering. Courses focused on social and interpersonal interactions might not have this issue. It could be assumed that any group work or other person-to-person interactions would improve this competency. However, a separate competency-focused activity might need to be generated. This could include an activity where questions are posed about how gender impacts perception in the workplace or having female speakers from outside discuss their experiences. Another course-long activity could be to ask students to keep track of how many times they say "guys" when referring to a mixed gender audience and then reflect on the impact.

The processes described above could be extrapolated for any course. The first step is to evaluate the syllabus, course objectives, and assignments/activities for opportunities to include career competencies. Then, a course map is developed to inventory and align course activities to career competencies. The simplest way to do this is to map and align career competencies to existing activities. For the assessment piece in the 4As framework, instructors could use competency-based questions as part of the formative or summative assessment. See Appendix 5 for examples.

5. Conclusion

This paper presents evidence that faculty is one of the prime sources for students to learn about their majors and careers. However, not all faculty are knowledgeable about the career competencies that are demanded by the marketplace. Therefore, faculty are missing the opportunity to help students articulate their career preparation for prospective employers.

To alleviate this problem, the paper suggests a simple transition mechanism based on 4As: Awareness, Alignment, Articulation, Assessment. Additionally, the feedback loop of this process is presented. In a nutshell, the solution is in empowering faculty to integrate career competencies into their curriculum. The paper suggests several methods and examples of successful integration, which are not a heavy lift for faculty.

The suggested methods are syllabi alignment, learning objectives' alignments, and assignments' and course activities' alignment with career competencies. The paper shares several ideas of assignments and activities, which could be easily adapted to any course. The versatility of ideas and examples in this paper makes it applicable to any institution, any level of courses, or any field of study. We hope that this paper helps educators to help students in their job search endeavors.

References

American Association of State Colleges and Universities (2021). *Integrating Career Advising for Equitable Student Success: A Higher Education Landscape Analysis.* The Career Leadership Collective, Washington, D.C.

Brodka, E., Kruger, J., & Porterfield, W. (2023). A Faculty Champion Approach and Tools You Can Use to Help Students Articulate Career Competencies. *NACE Competency Symposium 2023*, March 29, 2023.

Calvert, C. (2024). Active Learning: Positive Impact on Student Mental Health, Engagement, and Course Learning. *Business Education Innovation*, 16(1).

Calvert, C. (2021). Creating an Engaging Assignment for a Business Course by Connecting to Career Paths of Students. *Journal of Education for Business*. 96(8). - https://doi.org/10.1080/08832323.2020.1860872.

Calvert, C. (2020). A Transportation Matrix Activity Using Monte Carlo Simulation to Generate Variable Shipping Costs. *Business Education Innovation.* 12(1).

Hameroff, N. & Niedzwiecki, L. (2022). National Alumni Career Mobility Survey (NACM): Understanding Student Outcomes. *Career Everywhere Conference*, September 2022.

National Alumni Career Mobility (NACM) Annual Report. (2022). The Career Leadership Collective.

_____ 2020. The Career Leadership Collective.

National Association of Colleges and Employers (NACE). (2023). *Job Outlook 2023*. NACE, October 2022.

National Association of Colleges and Employers (NACE). (2023). *Job Outlook 2023*, Spring Update. NACE, April 2023.

National Association of Colleges and Employers (NACE). (2021). *Competencies for a Career-Ready Workforce.* NACE, March 2021. https://www.naceweb.org/career-readiness/competencies/career-readiness-defined/

Patterson, A., Calvert, C., Mocarsky, M., Cho, J., and Harmon, O. R. (2023). Teaching Data Literacy and Sports Economic Fundamentals using Fantasy Sports. *Business Education Innovation.* 15(1).

University of Connecticut. (2022). Champion vs Non-Champion Comparison Faculty Staff Survey.

Walton, G. M. & Cohen, G. L. (2011). *A Brief Social-Belonging Intervention Improves Academic and Health Outcomes of Minority Students. Science*, 331(6023), 1447-1451. doi/10.1126/science.1198364

Winkelmes, M., Bernacki, M., Butler, J., Zochowski, M., Golanics, J., & Harriss Weavil K. (2016). A teaching intervention that increases underserved college students' success. *Association of American Colleges and Universities: A Peer-reviewed Publication*, 18, (1-2), 31-37.

World Economic Forum. n.d. *Skills for Your Future.* https://www.weforum.org/focus/skills-for-your-future

Appendix 1

Transparency in Learning and Teaching:

Syllabi Language Identifying Competency Development

One way to intentionally infuse career development into your curriculum is to include career-relevant language in your syllabus. Adding the career language below into your syllabus is an important step in helping students to recognize the valuable career-related skills and competencies they are gaining in the courses you teach.

General Syllabus Language

Below is a standard paragraph that can be added as-is to your syllabi. For a list of NACE competencies, visit https://career.uconn.edu/channels/become-career-ready/

Identifying and articulating the NACE Career Competencies, technical, and transferable skills you acquire in this course and during your time at UConn are critical to Becoming Career Ready and your success both as a student and post-graduation. In this course, you have opportunities to enhance and gain the Career Competencies and skills that employers and graduate programs are seeking. This will occur via assignments and class conversations and will contribute to your ability to identify and articulate these competencies and skills when applying for leadership roles, internships, jobs, graduate school, fellowships, and more. For assistance in identifying and articulating these competencies and skills, schedule an appointment with a Career Coach at the Center for Career Development.

Adaptable Syllabi Language

Below is a modifiable paragraph that can be added to your syllabi. Please update the highlighted areas below to include content that is relevant to your course. For a list of NACE competencies, visit https://career.uconn.edu/becoming-career-ready/

You will have the opportunity to work with me and the Career Center in identifying and articulating the NACE Career Competencies, technical, and transferable skills you acquire in this course and during your time at UConn which are critical to Becoming Career Ready and your success both as a student and post-graduation. In this course, you have opportunities to enhance and gain transferable and technical skills such as (initiative, time management), and (Adobe Photoshop, MATLAB), as well as Career Competencies including (communication, critical thinking) that employers and graduate programs are seeking. This will occur via assignments and class conversations and will contribute to your ability to identify and articulate these competencies and skills when applying for leadership roles, internships, jobs, graduate school, fellowships, and more. For assistance in identifying and articulating these competencies and skills, schedule an appointment with a Career Coach at the Center for Career Development.

Humanities Syllabus Language

Courses and degrees in the humanities equip you with limitless possibilities for meaningful and successful career paths. This course helps you develop transferable skills that are essential to almost any career or graduate program without being tied to a specific vocation. These skills include the ability to think critically, communicate effectively in verbal and

written forms, research effectively, solve complex problems, and collaborate across diverse settings. The National Association of Colleges and Employers (NACE) has categorized these skills into eight Career Competencies that students need in order to be successful post-graduation. Moreover, this course will prepare you to identify and articulate these competencies and skills when applying for leadership roles, internships, jobs, graduate school, fellowships, and more. These are critical to your success both as a student and post-graduation, in charting a meaningful career path by Becoming Career Ready.

You will have the opportunity to work with me and the Career Center throughout the semester. Schedule an appointment with a Career Coach at the Center for Career Development to learn more about how career competencies can influence your career development.

STEM-Centric Syllabus language:

Courses and degrees in science, technology, engineering and mathematics (STEM) equip you with many transferable skills for successful career paths. The National Association of Colleges and Employers (NACE) has categorized these skills into eight Career Competencies that are essential to post-graduation success:

- Career and Self-development: Proactively develop oneself using awareness of one's strengths and weaknesses
- Communication: Clearly and effectively exchange information, ideas, facts, and perspectives
- Critical Thinking: Identify and respond to needs based upon an understanding of situational context and logical analysis of relevant information.
- Equity and 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.

Moreover, this course will prepare you to identify and articulate these competencies and skills when applying for leadership roles, internships, jobs, graduate school, fellowships, and more. These are critical to your success both as a student and post-graduation, in charting a meaningful career path by Becoming Career Ready.

I encourage you to use the Career Center services throughout the semester. You can schedule an appointment with a Career Coach at the Center for Career Development to learn more about how career competencies can influence your career development.

Common Curriculum

Syllabi language:

This course is part of the Common Curriculum for Leadership and Global Citizenship which is designed to allow you to build skills in other areas that will help you in your career and beyond. The National Association of Colleges and Employers (NACE) has highlighted these skills into eight Career Competencies that colleges and employers indicated as essential for student success post-graduation. The ability to explain in clear language how the courses you took helped you to foster skills that employers need is a proven skill in its own right, so knowing how this course translates to the workplace is an essential step on your pathway to Becoming Career Ready.

You are encouraged to work with me and the Career Center throughout the semester. Schedule an appointment with a Career Coach at the Center for Career Development to learn more about how career competencies can influence your career development.

Additional Opportunities for career integration into curriculum:

Utilizing assignments is another way to bring awareness and alignment to students. When developing an assignment, look over the list of NACE career competencies. Each assignment within your course has students developing many of these skills, but students are not always cognizant of the specific skills they are developing/engaging. If there are multiple competencies being targeted, prioritize the top three and specifically state them on the assignment by utilizing the footnote, learning objectives, or rubric. Here is an example from Dr. Natalia Smirnova, Associate Professor in Residence in the Department of Economics at the Stamford campus, that transparently states the competencies being enhanced within the assignment. For additional information, please visit the faculty/staff page on the Center for Career Development's website.

Appendix 2

Transparency in Learning and Teaching:

Career Competencies in Course Objectives

Course objectives are used as a guide in the learning process to help the learner focus on specific expectations and goals that are measurable. By being transparent about expectations of learning, students become encouraged to take more control of their learning. The same benefit holds true for the NACE career competencies. Grounded by Transparent in Learning and Teaching (TiLT), "transparent teaching/learning methods benefit students who are unfamiliar with college success strategies by explicating learning/teaching processes." Divulging the purpose, task and/or evaluation of the learning before work begins will boost a student's academic confidence, sense of belonging, and skills valued most by employers, as found by research conducted by Mary-Ann Winkelmes (2016). Furthermore, a 2011 study by G. Walton and G. Cohen showed a student's persistence increased as did their grades if they had an increased confidence and sense of belonging (2011, Walter and Cohen).

Below is a sample of a set of course objectives for a 1.0 credit graduate level course in the School of Engineering.

1. Identify job/internship opportunities. (Career & Self Development)
2. Working individually and with peers, instructors, and guest lecturers to develop and execute a strategy for obtaining a research internship in a non-academic setting such as private industry, a high-tech start-up, or in a national lab. (Teamwork, Critical Thinking, Equity and Inclusion)
3. Form a cohort/network/community/peer group within the class to support and mentor each other for success and to enhance active participation and build teamwork. (Communication and Teamwork)
4. Identify effective practices for job application and networking. (Critical Thinking)
5. Create an impressive resume, cover letter, and LinkedIn profile (Technology and Professionalism)
6. Identify the requirements and procedures for job opportunities for international students. (Critical Thinking, Equity and Inclusion)

Course objectives can be paired with career competencies by matching the measurable action with the skill the students will develop by achieving the course objective. If a course objective encourages the development of more than one competency, it is suggested to prioritize up to 3 competencies.

After matching each objective with the relevant competency development, it is important to inventory the competencies being developed throughout the course as shown in Table 8.

As you can see from the inventory table below, all competencies are accounted for except Leadership. After pointing out this exception to the instructor of this course, the instructor knew that this skill was developed by students within the course. Therefore, they developed an additional learning objective with the leadership competency in mind (See Objective 4). Although communication is also a competency being developed in this objective, the instructor found it important to only denote Leadership within this course objective. It is important to note that all competencies do not need to appear within the course objectives. The idea of quality over quantity is expected within college courses. Moreover, the competency inventory should be vertically articulated throughout the courses within a program of study.

Table 8. Inventory Table by Competency

Competency	**Course Objective**
Career & Self Development	Obj. 1
Communication	Obj. 3
Critical Thinking	Obj. 2, Obj. 4, Obj. 6
Equity & Inclusion	Obj. 2, Obj. 6
Leadership	
Professionalism	Obj. 5
Teamwork	Obj. 2, Obj. 3
Technology	Obj. 5

Appendix 3

ECON 2411 – Money and Banking Dr. Smirnova

Group Research Project

Monetary Policy

Your group is the Federal Open Market Committee (FOMC). Your task is to develop a monetary policy recommendation appropriate to the current economic conditions of the United States. You will present your recommendation at the next FOMC meeting (end of the semester) and avail it to the public through oral presentation.

Your oral presentation to the public (class) should include the following elements:

1. **an analysis of current economic conditions**; these conditions may include broad macroeconomic conditions as well as conditions experienced in different geographic areas, urban/rural areas, or different demographic and socioeconomic groups (e.g., racial and ethnic groups, age groups), borrowers and savers, etc.
2. **a forecast of near-term economic and financial conditions** relevant to the formulation of monetary policy;
3. **a discussion of significant risks to the economy** that should receive special attention in formulating monetary policy; these risks may include the possible effects (positive or negative) of monetary policies on different segments of the population.
4. **a monetary policy recommendation**, encompassing both traditional tools and newer approaches as warranted. Presenters should give supporting reasons for their recommendation.

To start, check the following resources:

1. FOMC website: https://www.federalreserve.gov/monetarypolicy/fomc.htm
2. Beige Book: https://www.federalreserve.gov/monetarypolicy/beige-book-default.htm
3. Data: https://www.newyorkfed.org/research/data_indicators
4. Research: https://www.newyorkfed.org/research/publication_annuals
5. Speeches of the Chair: https://www.federalreserve.gov/newsevents/speeches.htm
6. Bureau of Economic Analysis (BEA): https://www.bea.gov/
7. National Bureau of Economic Research (NBER): https://www.nber.org/
8. FRED Blog: https://fredblog.stlouisfed.org/

++

Grading: this group project is worth 20% of the course grade. Grading Rubric: link

++

Skills: Analysis, Inference, Problem Solving, Communication.

Career Competencies: Critical Thinking, Communication, Professionalism

Appendix 4

Career Fair Pitch (Out-of-class activity, or can be used as a Role Play activity in class)

Hi, my name is_____, it's my ____ year here at (the name of the university), majoring in_____ and I'm excited about _____(company's name) being here, because the work you do matches with my interests in_____(mention at least one area of interest or 2). I've learned that your company is working on_____(mention specific things about the company) and received an award in____ (include something that shows you've done your research on the company). Currently I'm working on projects connected with_____ (mention specific area or task). This should strengthen my experience in (Include most relevant career competencies: teamwork, problem solving, critical thinking).

I'm here today because I wanted to connect with people who are passionate about_____ (area of interest or specialization) and hope to learn more about this career path. Thank you for your time, I'm eager to connect with you and your colleagues! (Leave your email and ask whether you can follow up with your CV, or job shadowing, or an informative interview).

Appendix 5

Examples of Assessment Questions

- In about 150-200 words, describe how this course helped you towards the career(s) that are you most interested in pursuing at this time.
- Any skill(s) that you particularly developed in this course?
- What skills would you like to learn more?
- Let's think about specific readings, in-class activities, assignments and exams. Write 1-2 sentences on how three different contents/activities/assessments in this class strengthened one or more career competencies. (Think about how you would articulate this to potential employers and consider putting it in your resume.)
- What career competency did this course help you to develop and how?
- What one word best describes career-focused activities?
- How did **X** activity elevate your career readiness skills?