

# **The Role of Faculty in Durable Skills Development in Higher Education**

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*Although Emsi and other market researchers have found that employers desire durable skills (formerly known as “soft skills”) in new hires, there have been few studies dedicated to identifying how faculty perceptions of skill development differ in degree and by area, and how that might impact how such skills are embedded in classroom instruction. This study proposes to investigate the perceptions of faculty from different academic backgrounds and how their disciplines and experiences may contribute to their perceived role in curricular, cocurricular or extracurricular offerings that support durable skill development. Results from the study demonstrate the differing perspectives and expectations of faculty with regards to developing durable skills. Faculty primarily pointed to experiences outside of the classroom to develop and reinforce these skills, including internships, volunteering, student life—athletics and student clubs. Educating faculty on their role in developing skills, as students see those primarily in the classroom, will support career readiness in general.*

*Keywords: transferable skills, power skills, durable skills, faculty, curriculum*

## **INTRODUCTION**

Higher education has received increased pressure to demonstrate measurable outcomes, directly tied to career competencies. Historically, the debate between “hard and soft skills” has favored those employable skills dedicated to technical competencies that are measurable (Archer & Davidson, 2008). Detweiler (2021) recently noted that the pressure students feel to focus on mastering immediately practical, job-specific information still overshadows those lasting, durable and transferable skills. While college graduates continue to rank job placement among the top motivators for pursuing a degree, there exists two competing strategies: 1) the traditional liberal arts approach that focuses on lifelong value and transferable skills, and 2) vocationally focused training in job-specific information that leads to more immediate career

applicability (Pasion, Dias-Oliveira, Camacho, Morais, and Franco, 2020). These seemingly incompatible strategies have set the pedagogical approaches and teaching agendas for university faculty. In fact, there is a general consensus in studies of higher education that previous generations of faculty needed only expertise in their own disciplines. However, content-laden disciplines now require “soft skill” development among faculty to be successful educators (Lindblom-Ylänne, Trigwell, Nevgi, & Ashwin, 2006; Major & Palmer, 2006). The contribution of the Humanities and General Education as primarily promoting “soft skills,” including empathy, teamwork, and critical thinking, has been reconsidered as of late. The term, Bowen and Schapiro (2014) argue, “feminizes” the Humanities disciplines and undermines their importance when compared to the “hard skills” provided in other fields, such as STEM. As such, with the latest research on the global economy (Emsi, 2021) emphasizing the need for these skills, a rebranding has occurred in terminology and now they are referred to as “durable,” “transferable,” “indispensable,” and/or “power skills,” reflecting their indelible importance for the future of work (Adler, 1992; Madsbjerg, 2017; Khakhalkina, 2018; Weise, 2020; Abd Majid, Hussin, Norman, and Kasavan, 2020; Edmondson and Formica, 2021; Smydra, 2021; Barbuti, Zanni, Russo, and Valentini, 2021).

Market analysis performed by Emsi (2021) noted that the previous role of institutions of higher education was to maximize academic achievement. However, the need to include “durable skills” has increased as the demand for technical skills has. Regardless of field or career path, Emsi has identified 100 durable skills within 10 major competencies that transcend technical proficiency or discipline expertise and will become the most sought after in the future, including: Leadership, Character, Collaboration, Communication, Creativity, Critical Thinking, Metacognition, Mindfulness, Growth Mindset, and Fortitude. NACE (National Association of Colleges and Employers) includes many of the same competencies in their 8 Career Readiness Competencies, which include Career and Self-Development, Leadership, Communication, Professionalism, Critical Thinking, Teamwork, Equity and Inclusion, and Technology. Interestingly, NACE refers to these as Employability Skills. Of the top 20 careers by SOC (Standard Occupational Classification) code at the moment, all current postings have at least two durable skills listed as requirements (Emsi, 2021). The study notes a failure in postsecondary education to meet these goals and provide these necessary skills and calls upon K-12 curriculum to also be mindful of this need. NACE also confirms faculty resistance to their roles as including career preparation in many fields, as well as administrative failure to address institutional shortcomings in this area (Smydra, 2021). Yet, neither Emsi nor NACE identify where and how these skills can be/are attained. Are these skills embedded in activities in or outside of classroom experiences? What is the role of faculty in helping students develop durable skills?

There remains scarce evidence and few studies to support the assertion and identify where durable skills are being taught and how these may be highlighted for instructors, students, administrators, and future employers. This study seeks to identify where, how, and when soft/durable/power skills are introduced, developed and reinforced by way of faculty self-reporting. Faculty were surveyed for patterns and experiences in teaching (or not) durable skills in seven categories that align with NACE, major Emsi competencies, and the University’s Graduate Attributes, including: Critical thinking and problem-solving; Teamwork and professionalism; Leadership; Career and self-development (life-long learning); Oral and written communication; Equity and inclusion; and Information literacy, quantitative and analytic analysis. Special attention was paid to where and how durable skills were thought to develop in curricular, co-curricular and/or extra-curricular activities while students attend college. Results from the study indicate the rich array of opportunities students have in their educational environment to further refine these transferable skills that are highly desirable among employers. However, out of ten possible choices, faculty identified four areas where several durable skills were developed most frequently (more than 50% of the choices), and faculty acknowledged the different ways in which these could be engaged with. At the same time, faculty identified durable skills outside of the classroom and reinforced the belief that in-class learning outcomes were primarily for the learning of discipline-specific content. As such, institutions need to highlight the importance of durable skills in curriculum and provide training and resources for faculty to support student development of these skills. The artificial division between liberal arts and vocational programming in universities need also be reevaluated. This study offers a pathway for a third option for

institutions of higher education in a blending of vocational training and liberal arts made possible through academic and non-academic experiences of faculty members and how those may be leveraged in durable skills development. Faculty may be supported through professional development programs that highlight how skills development may be fostered in their coursework, such as with the University's R.I.S.E. project (<https://www.lindenwood.edu/human-resources/lindenwood-learning-academy/teaching-and-learning/rise-project/>).

## LITERATURE REVIEW

Given the relevance of such skills, a growing body of research has focused on models for directly promoting durable skills in academia (Moore, 2004). A meta-analysis of previous studies conducted across the globe reveals the perceived importance of various durable/transferable skills and the level to which these skills are developed in higher education programs. Beneitone and Yarosh (2021) examine the perceptions of four stakeholders in this topic: academics, employers, students, and graduates. The study shows that academics tended to see the largest gap between the importance of various durable skills and the levels at which these skills have been acquired by students/graduates. Students and graduates suggested the smallest gap between importance and achievement—i.e., they were more likely to see themselves as having achieved the skills that are important for their careers (p. 49-50/235-236). Interestingly, faculty self-reported a lower satisfaction than even employers when it came to how well their programs were teaching durable skills.

The strategies that can be used by higher education institutions to promote transferable skills are diverse and can include different levels of engagement and scope of interventions (Jääskelä, Nykänen, & Tynjälä, 2018). Indeed, academic institutions can promote capillary projects, focused primarily on raising awareness, with extensive face-to-face, fully online or blended events that are sustainable for both medium and large universities (Valverde & Ciudad, 2014). The effectiveness of online training for these skills is controversial, given their specificity and the central role of interpersonal relationship in fostering these skills. However, there is research evidence of the effectiveness of online courses in achieving some basic goals of soft skills acquisition, such as their understanding and awareness of their importance (García García, Biencinto López, Carpintero Molina, & Expósito Casas, 2016).

The role of faculty is also vital in encouraging the introduction of innovative teaching and evaluation strategies in academic courses (Zhang, 2012) to promote the development of “soft skills” in students (Virtanen, Tynjälä, & Eteläpelto, 2014). However, a faculty's perceived role in the process is influenced by many factors, including if they themselves possess such skills or have worked in industry where durable skills were valuable. Hora and Lee (2020) investigated how industry experience affects if/how faculty members teach soft skills in STEM courses. They found that instructors who had industry experience were more likely to emphasize some soft skills in their courses (e.g., oral communication, teamwork, and problem-solving) than were faculty members with no industry experience (p. 19). The interview responses indicated that many instructors with industry experience were focused on providing students with experience that would simulate workplace situations, which could suggest that instructors with industry experience view the classroom as an appropriate place for students to acquire the durable skills needed in the workplace (p. 22). However, Hora and Lee note that there tended to be a low emphasis on the five targeted soft skills from all the faculty surveyed: “The relatively low mean scores for these five skills suggest that faculty in our study do not place a strong emphasis on them in their teaching, with most reporting that the survey items describing different instructional methods were between “minimally descriptive” (1) and “somewhat descriptive” (2) of their teaching” (p. 15). This suggests that even faculty with industry experience placed comparatively little emphasis on the development of durable skills.

Other studies have indicated that faculty believe the responsibility for developing durable skills lies on students and employers. Taylor (2016) conducted a study using two questionnaires to analyze the perceptions of IT companies, IT students, and faculty regarding the development of soft skills, where/how those skills are developed, and how the teaching of soft skills could be improved (p. 6). Many of the lecturers surveyed indicated a belief that it is the students' responsibility to develop soft skills, or blamed

students' failure to develop soft skills on their lack of motivation. One response indicated that soft skills are developed outside of the classroom (p. 8). Some lecturers suggested that they lack the time and resources to teach soft skills and must focus on technical skills (p. 8). Taylor notes that questionnaire responses indicate that there is disagreement or confusion regarding who is responsible for developing these skills and where they ought to be developed, with industry professionals and students indicating that they believe these skills should be developed through coursework, while some lecturers believe the responsibility for soft skill development ought to fall to the students themselves or to industry (p. 14). Likewise, a study by Cranmer (2006) questioned whether it is possible for employability skills to be taught effectively in classrooms and suggests that employment-based training should be the focus of efforts to develop employability skills in students.

In order to address the consideration of responsibility, the first step in developing skills in students is for centers of teaching excellence to create and promote training programs for faculty members. The centralized, "global" approach is effective as "transfer problems" are avoided from one individual professor developing a strategy that does not universally align with institutional directives (Laker & Powell, 2011; Misseyanni, Papadopoulou, Marouli, & Lytras, 2018). The institutional approach is also effective in promoting motivation among a broader swath of the faculty population, according to large meta-analysis studies (Kember, Leung, & Ma, 2007). On the other hand, institutions may choose to carry out projects targeting specific groups of students (whether struggling or high potential) or for targeted training, explicitly designed to promote one or more durable skills (Emanuel, Ricchiardi, Sanseverino, & Ghislieri, 2021).

The targeted approach can be seen in a number of studies dedicated to improving "soft skills" in business and STEM programs (Gruba & Al-Mahmood, 2004). Asonitou (2021) reported on attempts to improve career prospects for accounting graduates in Greece through development of such skills and the impediments in doing so. The study noted the increased blurring of roles between actuary competence and technical excellence and interpersonal skills. Faculty, students, and administrators reported the requirements from accreditors and lack of external partnerships as central obstacles to developing such skills. In essence, various "soft skills" were expected to be developed outside of classroom instruction with experiential learning opportunities and internships. Other studies (Boyce, Williams, Kelly, & Yee, 2001; De Villiers, 2010) have called upon accounting educators to reevaluate their role in developing both discipline-specific skills and "soft" or "generic" skills. The task of addressing student attitudes and learning styles necessitates a fundamental change from the entrenched objectivist mindset. Instructors must see themselves as part of the learning process and rethink the goals of instruction and assignments. For instance, strategies to address elaborative process elements may include the use of case studies, peer teaching, and interactive classroom design. Canelas, Hill, and Novicki (2017) offer such an example for cooperative learning strategies in organic chemistry; Weisblat and Sell (2012) argued for faculty mentoring programs built into graduate curricula to improve communication skills; and Klegeris (2021) suggested using active learning in small teams to improve generic problem-solving skills.

What these studies have in common is the role of the faculty member in the classroom. Instead of delivering information, faculty are actively involved in the development of content and skills development. Väisänen and Hirsto (2020) elaborated on the potential of the flipped model and active classroom structure. Väisänen and Hirsto gathered survey data that analyzed how well a flipped classroom approach could support the acquisition of "working life skills," (i.e., soft/durable skills). Faculty noted that a flipped classroom approach offers more opportunities for active learning and cooperation (p. 365). They also note that the flipped classroom approach helps students develop some of the professionalism and self-development soft skills that students will need in the workplace. The flipped classroom model requires students to take responsibility for their own learning and manage their time. The flipped model requires that students complete their learning before class sessions and come to class prepared to apply new knowledge (p. 366). Faculty survey respondents noted that the flipped model allowed more class time for learning experiences that promoted problem solving and critical thinking (p. 366). As Väisänen and Hirsto's results show, the flipped classroom model allows instructors to better incorporate durable skill development in their courses, especially in disciplines that are traditionally focused on the acquisition of technical skills.

Other arguments have been made that in order to design higher education training programs that promote the acquisition of “soft skills,” those designing, developing, and implementing such programs must have an optimal level of these skills first (Korthagen, 2004). In the study of American higher education professionals, Fernández-Arias, Antón-Sancho, Vergara, and Barrientos (2021) noted that intrapersonal and interpersonal skills that serve as the basis for implementing technical competencies in the work context is expected by the year 2030. Faculty from all of the Americas were surveyed on their competence in “soft skills.” Of the faculty surveyed, female and younger respondents fared better in many areas, as did faculty from the Humanities and Social Sciences with higher mean values than those in STEM fields.

The focus on the economic impact higher education has on creating a sustainable and well-trained workforce is reflected internationally. Studies in Asia, in particular, find a parallel to those in the Americas. For instance, a study of Malaysian undergraduates identified “endurance force, time management, research experience and activities involvement in university” as the most significant variables in successful employment (Abd Majid, Hussin, Norman, and Kasavan, 2020, p.1). Of these factors influencing employability, so-called “endurance force” was identified as the most influential, representing 68.5% of predictors of employment. Included in the characteristic is “consistency of stress, physical endurance, adaptability, risk-taking, enthusiasm, high motivation, and willingness to work hard for success,” what otherwise Emsi would refer as “Fortitude” (Emsi, 2021; Abd Majid, Hussin, Norman, and Kasavan, 2020 p.42). Recommendations from the study include institution’s highlighting the marketability of their graduates; providing more community-based, extra-curricular activities; increasing experiential learning opportunities; and, finally, the government should ensure new jobs are created for graduates.

With the conversations around skills development changing, and greater emphasis being placed on non-job specific skills, further investigation into where these are actually being developed during a student’s time in college is warranted. What is of note in the preceding and other research is that the “soft skills” gap can be seen to be more pronounced between the Humanities and Social Science fields and others that seek to integrate the skills studied in these disciplines (Boyce, Williams, Kelly, & Yee, 2001; Gruba & Al-Mahmood, 2004; De Villiers, 2010; Segeč, Drozdová, & Mikuš, 2015; Purwanto, 2020; Asonitou, 2021; Fernandes, Jardim, & Lopes, 2021; Sultanova, Hordiienko, Romanova, & Tsytsiura, 2021). For instance, in their study of faculty across various fields, Chamorro-Premuzic, Arteché, Bremner, Greven, and Furnham (2010) found that “soft skills” were more prominent in “soft” disciplines (i.e., Humanities and Social Sciences) and that is reflected both in faculty and students. The value of durable skills is not in dispute, and those in industry and STEM all agree that students coming out of college need further development in these areas to refine these competencies. In order to identify strategies to further develop durable and transferrable skills, understanding where and what associated activities or events students and faculty believe are most impactful needs to be researched. As such, the following study will survey faculty across disciplines to identify where the major career competencies are best fostered and refined in curricular, co-curricular and/or extracurricular areas.

## **METHODOLOGY**

The mixed-methods study included data from surveys collected from faculty. The sample was collected from Lindenwood University, a private, four-year, liberal arts institution in the suburban ring of St. Louis, Missouri. Participants included 91 faculty from the College of Arts and Humanities, College of Education and Human Services, Plaster College of Business and Entrepreneurship, and College of Science, Technology and Health. The purpose of the project was to assess where students developed durable skills during their time at college. Results gathered were compared with the corresponding themes answered by faculty. This project utilized a mixed-methods study design which included qualitative (open ended comments) and thematic (quantitative) results from an online survey. The survey was administered in Spring of 2022 and collected data on student demographics, modality of attendance, where NACE competencies and Graduate Attributes were developed in curricular, co-curricular or extracurricular activities, and what had the greatest impact on the development of said skills. The instrument was designed using the categories and meta-categories identified by Emsi, NACE, and the Lindenwood University

Graduate Attributes and previous literature (Adler, 1992; Madsbjerg, 2017; Khakhalkina, 2018; Weise, 2020; Abd Majid, Hussin, Norman, and Kasavan, 2020; Edmondson and Formica, 2021; Smydra, 2021; Barbuti, Zanni, Russo, and Valentini, 2021).

Participants were asked to indicate via a 1-10 Likert scale their perceptions of durable skills and also rank available options of where they were developed from most to least impactful. Faculty were asked an open-ended question regarding what activities they found to be most important for developing durable skills. Students were contacted either through the University course management system or were emailed with links to online surveys. The survey was available for approximately two weeks in the middle of the term and all data was collected using Qualtrics to ensure privacy and anonymity of responses. These results were sorted based on demographics (age, gender, major, modality, and first-generation, veteran, student athlete and student worker statuses) and data were exported for the survey system. Descriptive statistics were calculated and used for comparisons between groups.

## RESULTS

### Faculty Respondent Characteristics

The faculty respondents were instructors at a mid-size comprehensive, Carnegie large master's institution with a focus on teaching. The institution comprises four colleges: The College of Arts and Humanities; The College of Science, Technology, and Health; The Plaster College of Business and Entrepreneurship and The College of Education and Human Services. The following discussion of graphs provide an overview of the make-up of the faculty respondents.

The institution enjoys a foundation of instructors (both full-time and adjunct) who have many years of experience in teaching, either at the study institution or elsewhere (**Figure 1**). Most respondents had 10+ years of teaching service. The number of faculty with non-academic and/or industry experience (both full-time and adjunct) is in keeping with the mission of preparing students for lives of professional and personal success (**Figures 2-3**). A vast majority of the adjuncts had non-academic experience, one of the strengths that adjuncts often bring. All full-time faculty respondents from the Plaster College of Business and Entrepreneurship have non-academic experience, whereas a majority of the faculty respondents from the College of Science, Technology, and Health do not have non-academic experience.

In addition to teaching, full-time faculty also engage in advising of students, primarily after the first two years of a student's undergraduate curriculum. Roughly half of the respondents reported having an advising load of 16 or more students, with a significant number advising 30 or more (**Figure 4**). In general, advising is assigned to faculty who have 10 or more years of teaching experience. More than half of the full-time faculty respondents have 16 or more advisees. Faculty who have less than 10 years of experience tend to have few or no advisees.

In addition to their own scholarship and/or creative activity, full-time faculty also engage students in research, scholarship, or creative activity (**Figure 5**). However, a majority do not engage students in their research or scholarship. The exception among faculty was found in The College of Science, Technology, and Health.

To ensure that instructors have access to faculty development that enhances the quality of the educational experiences for all students, the institution has implemented the R.I.S.E. Project initiative. The initiative emphasizes "Rigor", "Inclusiveness", "Support", and "Engagement." In each college, roughly half of the instructors (both full-time and adjunct) report feeling "Somewhat engaged" or "Very engaged" in the first year of the initiative (**Figure 6**).

### Durable Skills

This summary focuses on three durable skills: critical thinking and problem solving, teamwork and professionalism, and career and self-development as lifelong learners. This set of durable skills represents a range of skills (cognitive to personal development) that faculty members may or may not feel is part of their role as teachers, advisors, or mentors.

Although participants in the survey had the opportunity to select from a broad set of experiences where students could develop durable skills (the categories are: major coursework/capstone, minor coursework, general education, experiential learning (which includes service learning, study abroad, undergraduate research, internships), UNIV (first-year seminar), student life, work study, mentoring, and volunteering), for clarity, the discussions and data focus on the top three or four areas commonly selected by each group of faculty considered. All of the choices presented to faculty appeared among the top three or four choices within different groupings, with the exception of the first-year seminar courses. These UNIV courses have just recently undergone revision to incorporate the new institutional graduate attributes that align generally with the durable skills studied. Participants were also provided the opportunity to submit other experiences that they felt contributed to the development of durable skills beyond the set of experiences provided. This summary does not cover responses to this open-ended question.

The summaries below describe and discuss percentages of respondents in each faculty grouping who identified a particular experience as important in durable skill development. In addition to gaging agreement for a particular experience, the graphs provide a tool for comparing relative agreement with other student experiences. A group that identifies several experiences as important in developing a skill might indicate either a perception that several student opportunities play a part in skill development (high percentage agreeing) or uncertainty about where students actually develop those skills (low percentage agreeing).

### **Critical Thinking**

As a higher-order cognitive skill according to Bloom's taxonomy, critical thinking and problem solving, is one touchstone for defining "Rigor" within the R.I.S.E. project. Launched fall of 2021, the project aims to enhance the culture of teaching and learning at Lindenwood such that all faculty are working to design courses and create classroom cultures characterized by rigor, inclusiveness, support, and engagement. These pillars provide a framework for effective teaching that can help faculty to elevate learning for a diverse student body. (<https://www.lindenwood.edu/human-resources/lindenwood-learning-academy/teaching-and-learning/rise-project/>) As shown in **Figure 7** below, regardless of whether a faculty member felt engaged or unengaged with the R.I.S.E. program, faculty tended to agree that students developed their critical thinking and problem-solving skills in major courses/capstones, in experiential learning (such as service learning, research, study abroad, and internships), in mentoring, and in general education courses. All respondents agreed in general to the relative importance of courses in the major, experiential learning, and mentoring.

Full-time faculty who engaged students in research and scholarship were outnumbered by those who did not. However, both groups tended to select the experiences where students developed critical thinking skills with the same relative importance: major courses/capstone, experiential learning, general education, and mentoring (**Figure 8**). The responses of the faculty who involve students in research mirror very closely the responses of faculty based on their engagement with R.I.S.E. This similarity is not too surprising given that 85% of the faculty who engage students in research identify feeling very engaged or somewhat engaged with the R.I.S.E program. There was a similarity that should be noted in response patterns compared with R.I.S.E. engagement.

The different ways that faculty view the role of mentoring in the development of critical thinking skills shows up more clearly when considering responses based on non-academic and/or industry experience (**Figure 9**). Faculty without such experience do not tend to see mentoring as important compared to faculty who do have industry experience.

Both faculty non-academic experience as well as years of teaching seem to influence perceptions about the role of mentoring in developing critical thinking and problem-solving skills (**Figure 10a**). This pattern seems to hold as well for adjunct faculty, who also have the opportunity to serve as mentors (**Figure 10b**).

In this sample of faculty who responded to the survey, there is a correlation between the years of teaching and the advising load. Full-time faculty who had less than 10 years of teaching experience typically had few or no advisees, whereas those with more than 10 years of service were entrusted with the responsibility of advising, sometimes with heavy loads. It is not too surprising then that those faculty

members who had large advising loads (greater than 20 advisees) tended to also place importance on mentoring in the development of critical thinking skills (**Figure 11**). Interestingly, adjuncts who did not have advising duties also placed importance in the mentoring process, perhaps due to their experience in non-academic settings.

### **Teamwork and Professionalism**

Depending on the academic discipline, faculty in an area might not have a long tradition of incorporating teamwork skills in major coursework. In contrast to critical thinking skills, “Mentoring” becomes less frequent and while “Student Life”, “Work Study”, and “Volunteering” become more frequent as areas where teamwork skills can be developed. Faculty who have industry experience tend to identify major coursework more frequently than colleagues without outside experience as an area where teamwork is developed (**Figure 12**). One possible explanation is that those faculty who have industry experience know the importance of teamwork in non-academic careers and have incorporated teamwork development in their courses.

Faculty who have more advisees tend to recognize the importance of experiential learning and student life in the development of teamwork skills. This recognition could be especially helpful as faculty advisors guide and encourage students in their participation with co-curricular and extra-curricular activities. Faculty with fewer or no advisees tend to more frequently identify major coursework as an important experience in the development of teamwork skills (See **Figure 13**).

It may appear that “Mentoring” is identified in a special way when considering the years of teaching experience in the perception of skill development (See **Figure 14a** and **14b**). However, in contrast to **Figures 12** and **13**, which encompass five categories, **Figure 14** encompass six categories because of multiple categories have the same number of faculty selecting those categories. Adjuncts tend to have less agreement about which categories of experiences are important in the development of teamwork skills (lower percentage agreement).

No too surprisingly, faculty who involve students in research and scholarship tended to identify “Experiential Learning” as a category where students develop teamwork skills, more so than faculty who do not engage students in a similar way.

### **Career- and Self-Development as Lifelong Learners**

As with teamwork skills development, faculty tended to identify a broader set of experiences for career- and self-development than they identified for critical thinking. While “Mentoring” and “Work Study” join “Major Coursework” and “Experiential Learning”, “Student Life” do not show up in the following figures. In addition, as in critical thinking, “General Education” and “Minor Coursework” are identified as important experiences in career- and self-development.

Full-time faculty with non-academic/industry experience tend to value the role of “Mentoring” in career- and self-development than full-time faculty without non-academic experience (**Figure 16**). In career- and self-development, adjuncts start to report the importance of work study in the career development, more so than full-time faculty (**Figure 16** and **Figure 17**). For adjuncts, work study is ranked third in importance in career-development skills. For full-time faculty, work study ranks fourth. Faculty with ten or more advisees tend to value the importance of mentoring in career- and self-development skills more than faculty who have fewer than ten advisees (**Figure 17**). Faculty who have 10 years of experience or more in teaching tend to view major coursework and experiential learning as more important in the development of career- and self-development skills than less experienced faculty (**Figures 18a** and **18b**). Full-time faculty who have less than 10 years of experience tend to see value of several different curricular and co-curricular activities contributing to the development of those skills.

Faculty who involve their students in research and/or scholarship tend to place more value in major courses and capstones as opportunities where students develop career and self-development skills than in mentoring. Faculty who do not involve students in research and/or scholarship have less of a gap between major coursework and mentoring opportunities. This is similar to the trends seen in **Figure 15**, which provides data on perceptions regarding teamwork skills.



### **R.I.S.E. and Its Potential Role in Teamwork Development**

As a relatively recent faculty development initiative, R.I.S.E. was able to generate deep discussion among participating faculty regarding “Rigor”, “Inclusion”, and “Support”. The data shows a difference between the perception of the role that major coursework plays in the development of teamwork skills in students among faculty who felt more engaged with R.I.S.E. and those less engaged. However, teamwork can be used as a technique that supports and engages students as they are challenged to develop higher-order skills like critical thinking and problem solving.

### **An Emerging Taxonomy of Durable Skills**

There are similarities in faculty responses to both the development of cognitive skills (like critical thinking) and career-development skills, especially in the role that coursework and mentoring plays. The faculty are employed at an institution that emphasizes the connection between educational experiences and career success, like many other institutions. On the other hand, teamwork (free of context) elicited different responses from the faculty, acknowledging a range of experiences including the importance of student life, work study, and volunteering. There is an opportunity to help show connections between teamwork and career skills and to support faculty who want to incorporate teamwork development in their coursework.

## **DISCUSSION**

Students develop durable skills in curricular, co-curricular, and extracurricular activities while in college. While traditional-age populations that live in campus may develop durable skills such as teamwork and professionalism in extracurricular activities such as Student Life or experiential learning, faculty preference coursework and the curriculum which is under their purview. However, depending upon faculty background, discipline, and industry experience, where and the extent to which durable skills were developed differed. For instance, mentoring was important to certain segments of the faculty that had more industry or non-academic experience, and faculty involved in the R.I.S.E. project were more likely to find experiential learning significant. Additionally, responses reflect that career development skills align with critical thinking skills by way of faculty rankings. The tenure of faculty also impacted their openness to attempting a broader range of activities in an attempt to develop durable skills with junior faculty more open and faculty with a decade or more of experience skewing towards fewer examples.

It should be noted that durable skills, such as those investigated for this study, can effectively be divided into three areas, including cognitive (critical thinking), social (teamwork), and professional (career and life-long learning). Faculty impact students in all these areas but not all were considered part of the collective faculty consciousness, making many durable skills easier to assign to areas that are co- or extra-curricular. Therefore, training is required to bring to elucidate the manner in which faculty are able to contribute to durable skills and provide examples of how that may be accomplished. As with any academic endeavor, skills development should start with institutional learning outcomes (or graduate attributes) in order to clearly integrate various transferable skills across all activities of college students during their matriculation. One successful area to foster a sense of collegiality in the process are projects, such as R.I.S.E. noted here. Targeted development efforts have the ability to demonstrate success and assist with faculty perception of such skills. Next steps would include forming a community of dialogue with a diversity of perspective in order to assist in identifying strategies to leverage in other areas where certain types of skills would not be as common.

## **CONCLUSION**

The development of durable skills can be attained in a variety of ways in curricular, co-curricular and extracurricular activities during time in college. The results from the study here indicate the rich array of opportunities students have in their educational environment to further refine these transferable skills that are highly desirable among employers. The study also confirms that durable skills are formed in all three areas of the collegiate experience, both in and outside the classroom. At the same time, faculty have a clear

role in skills development even outside the classroom. The variables that lead to faculty perception in their engagement and responsibilities in development of durable skills include years of service, industry or non-academic experience, discipline and college, number of advisees, full-time status, collaboration in student scholarship, and engagement in professional development projects, such as R.I.S.E. For instance, faculty regularly ranked their own role in teaching coursework in their majors as much more influential- especially for critical thinking, problem solving, teamwork and professionalism, career and self-development, and written and oral skills. The more traditional “academic” skills, such as writing and quantitative analysis, displayed much narrower top choices for faculty. At the same time, non-traditional “academic” skills, such as equity and inclusion, leadership, and teamwork and professionalism found faculty pointing to activities outside of the classroom, especially experiential learning, and student life activities. Faculty seemed to consider the content of their disciplines as their primary purview and thus many durable skills fell outside of the classroom for them. As such, institutions need to highlight the importance of durable skills in curriculum and provide training and resources for faculty to support student development of these skills. The artificial division between liberal arts and vocational programming in universities need also be reevaluated. This study offers a pathway for a third option for institutions of higher education in a blending of vocational training and liberal arts made possible through academic and non-academic experiences of faculty members and how those may be leveraged in durable skills development. Recommendations for a follow up study would include grouping durable skills into a tripartite grouping– cognitive, social, and professional- in order to better understand how they align and to what degree with the spheres of student experience- curricular, co-curricular, and extracurricular.

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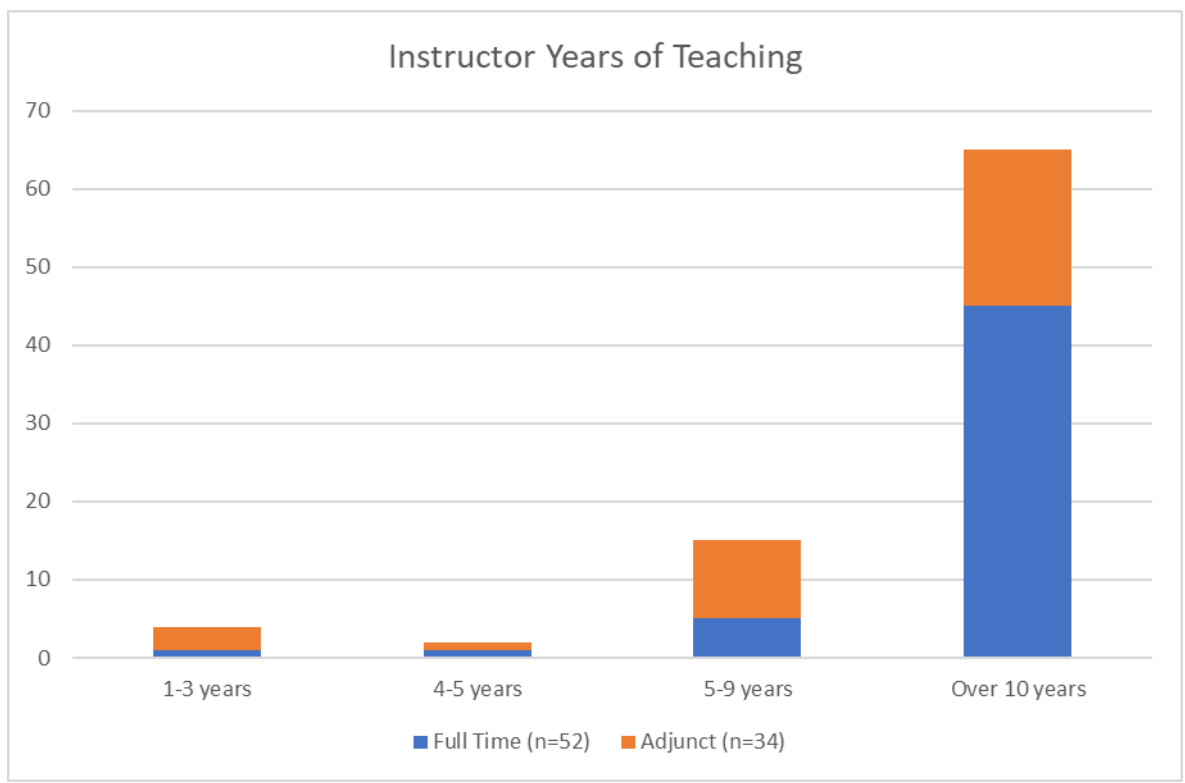
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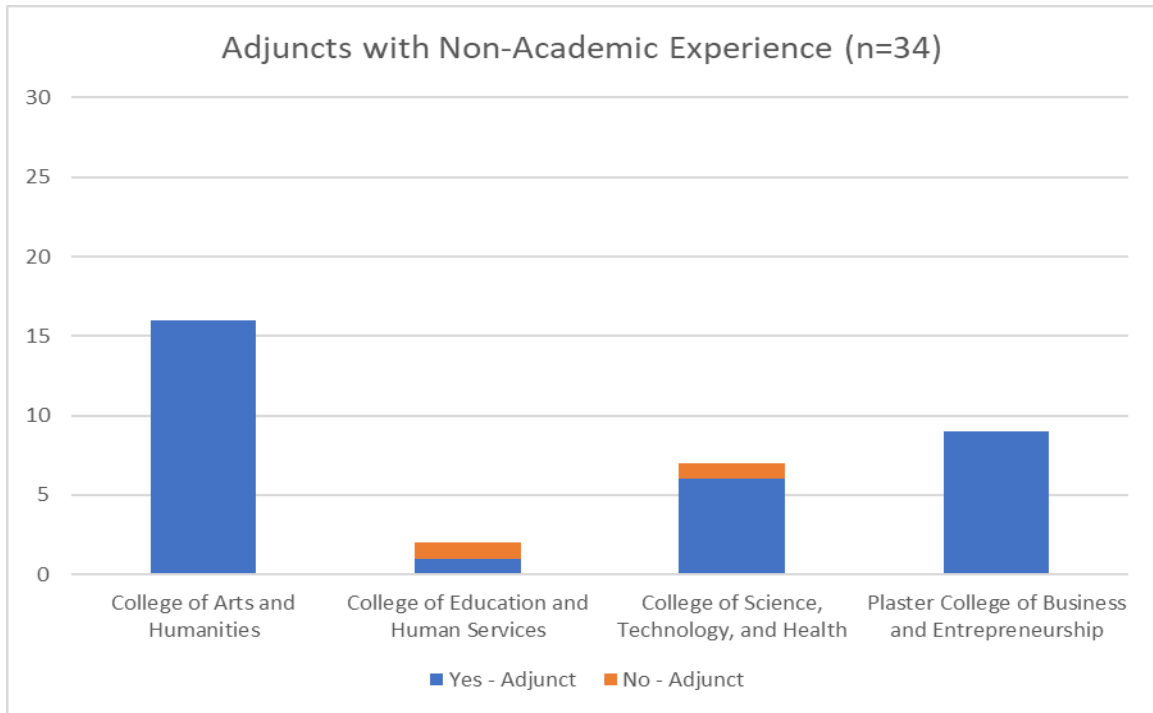
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**APPENDIX: FIGURES**

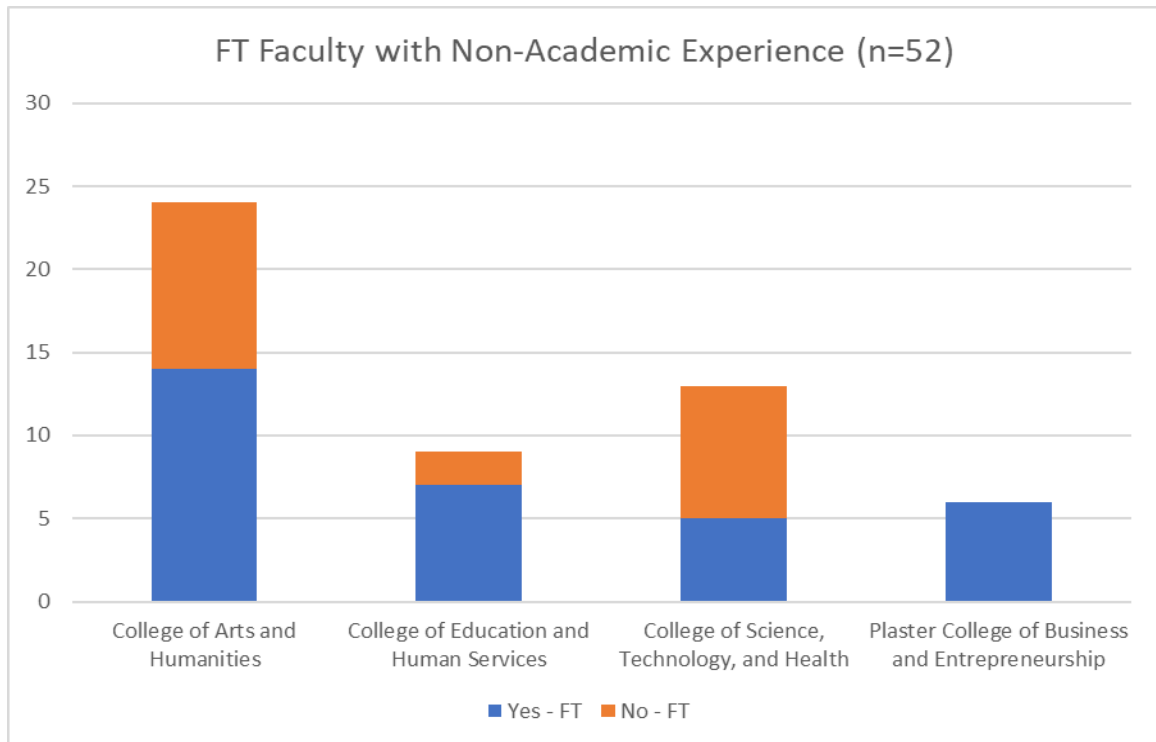
**FIGURE 1  
COMPARISON OF YEARS OF SERVICE**



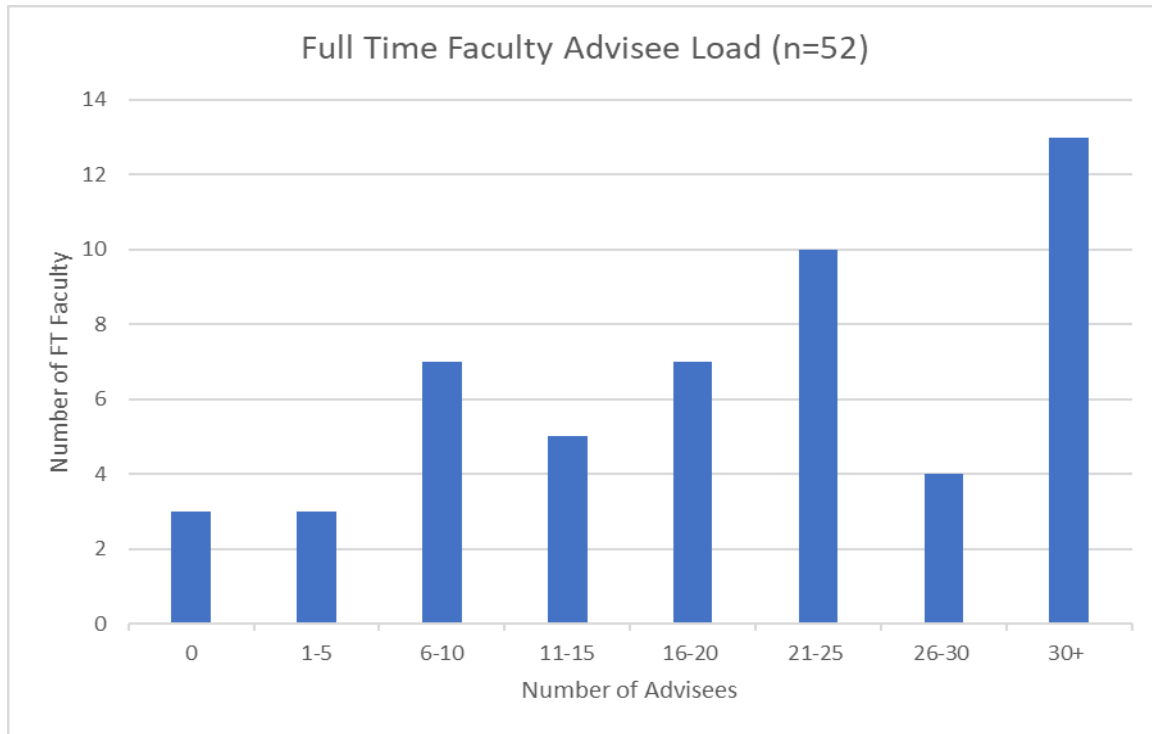
**FIGURE 2**  
**ADJUNCT FACULTY WHO HAD NON-ACADEMIC OR INDUSTRY EXPERIENCE**



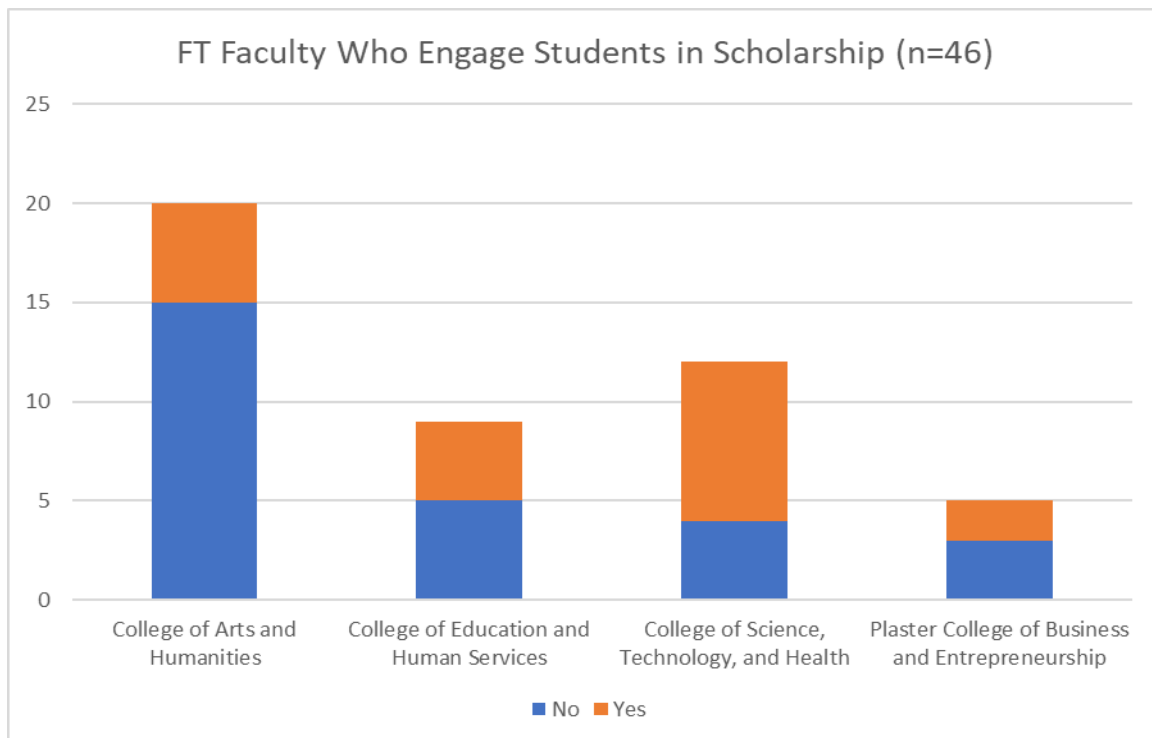
**FIGURE 3**  
**FULL-TIME FACULTY WHO HAVE NON-ACADEMIC OR INDUSTRY EXPERIENCE**



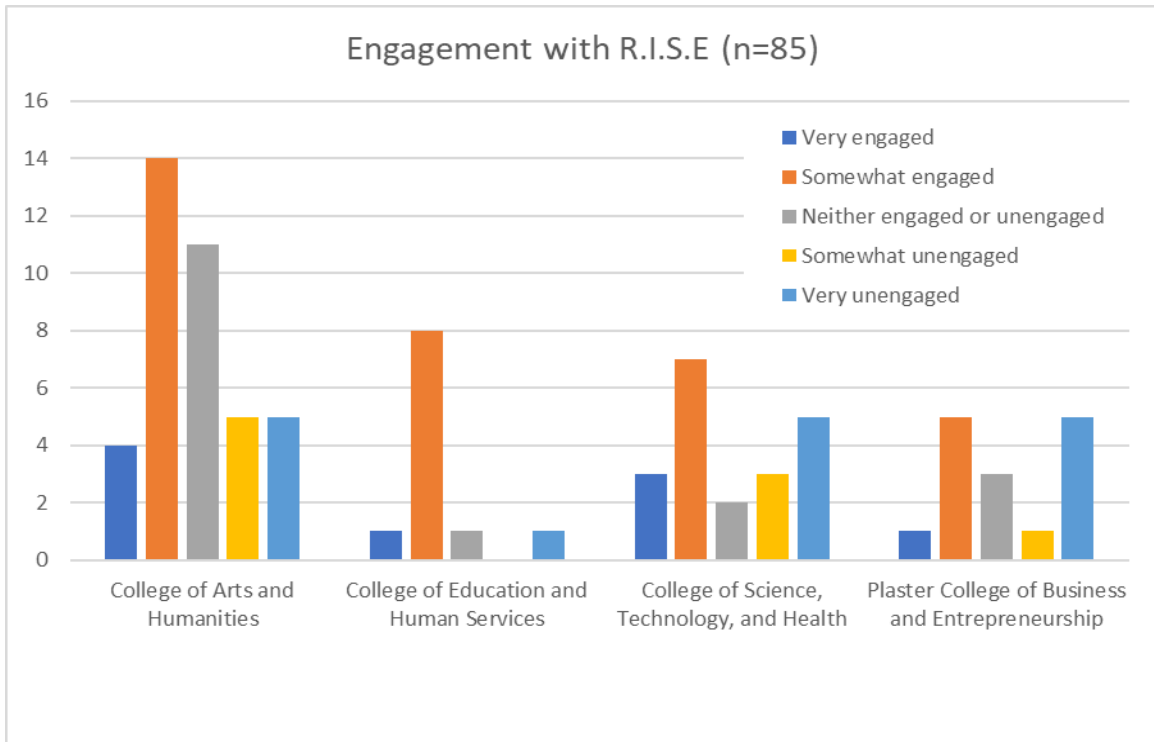
**FIGURE 4**  
**FULL-TIME FACULTY ADVISEE LOADS**



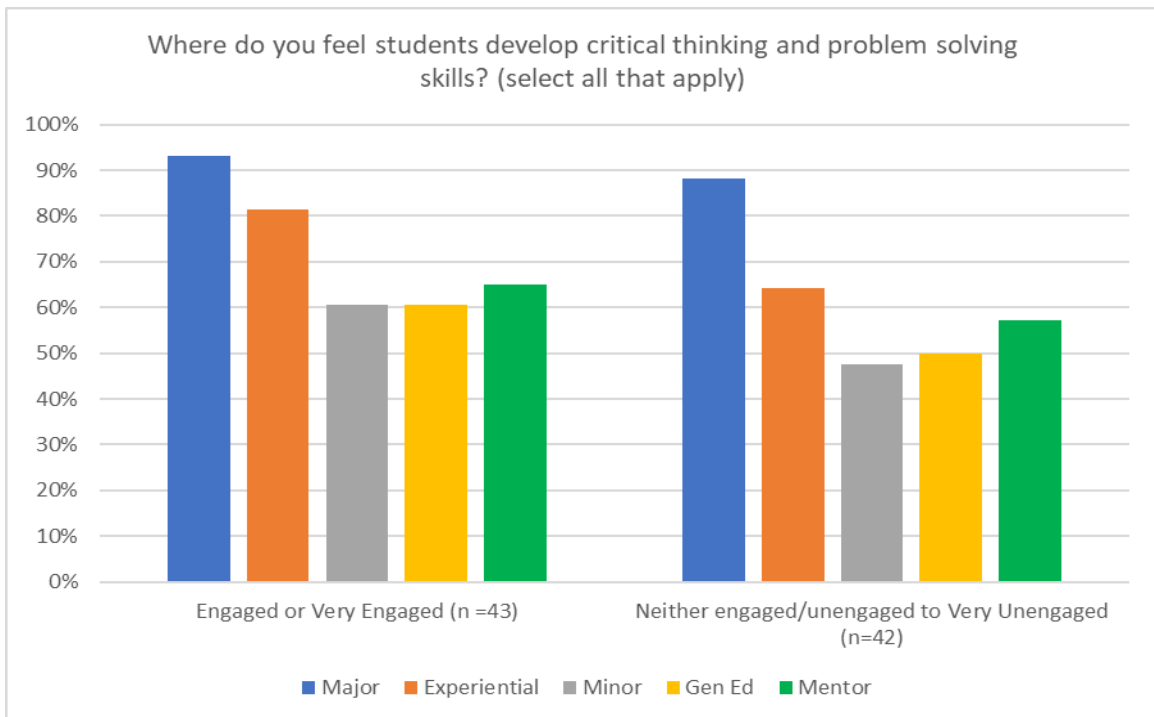
**FIGURE 5**  
**FACULTY AND STUDENT SCHOLARSHIP ENGAGEMENT**



**FIGURE 6**  
**INSTRUCTOR ENGAGEMENT WITH THE R.I.S.E. FACULTY DEVELOPMENT PROGRAM**

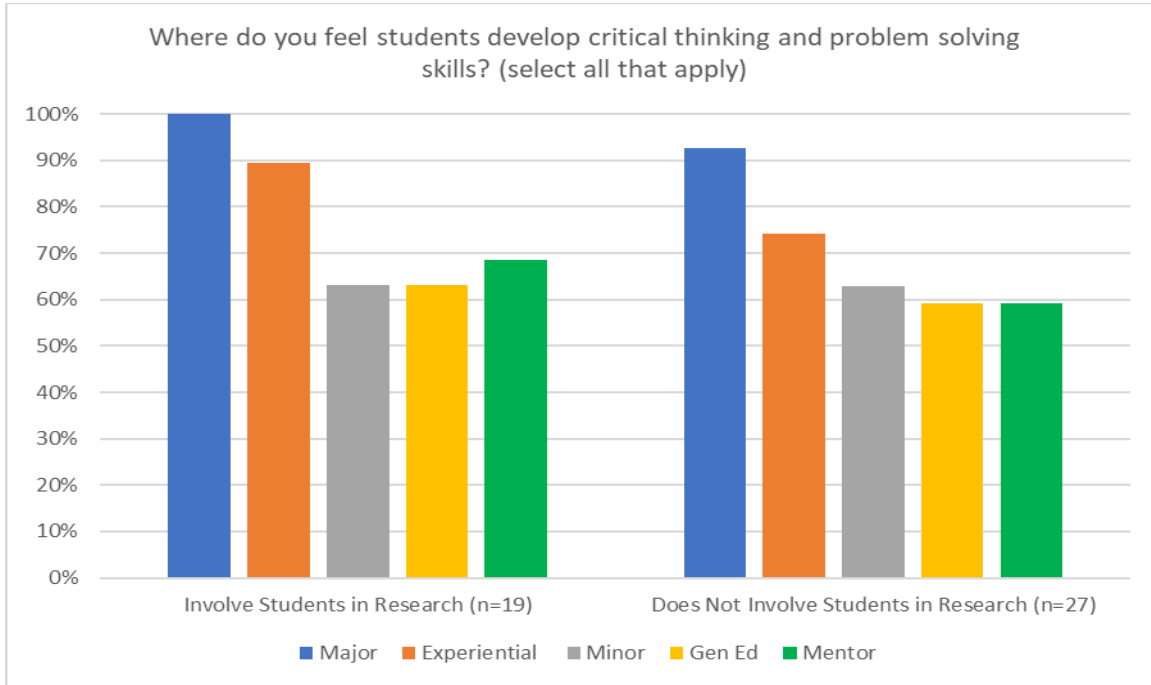


**FIGURE 7**  
**CRITICAL THINKING AND ENGAGEMENT AMONG THE R.I.S.E. PROGRAM**

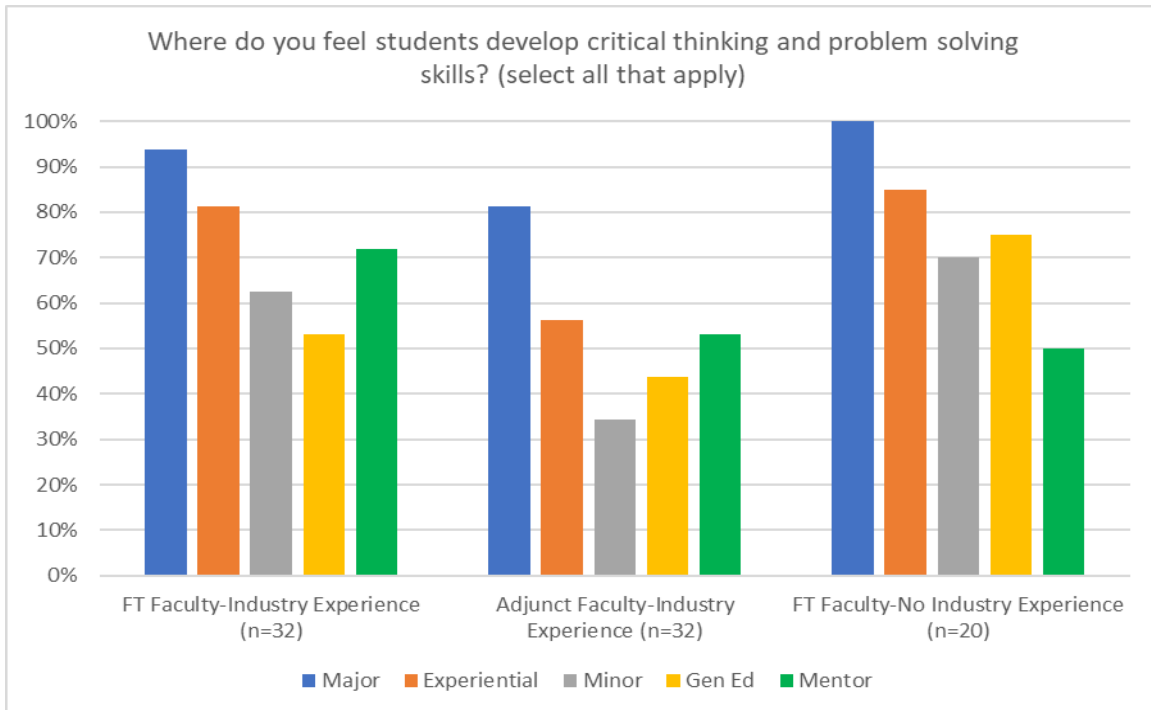




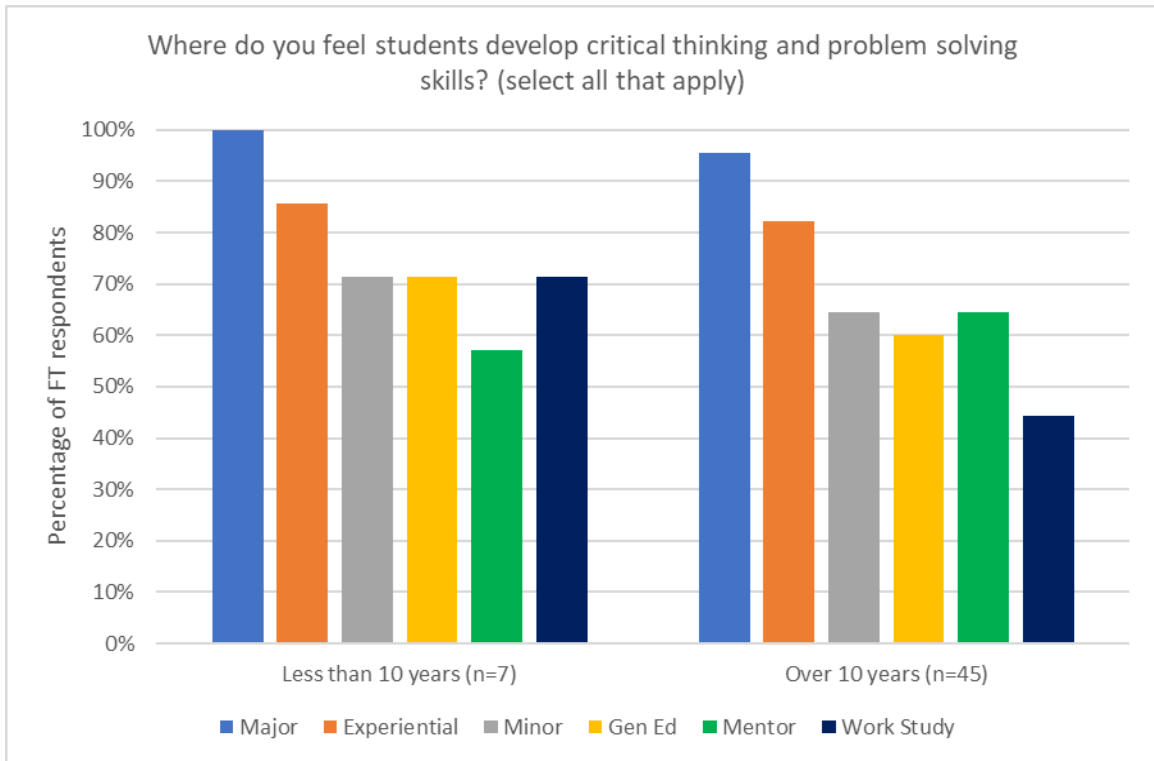
**FIGURE 8**  
**FULL-TIME INSTRUCTORS WHO ENGAGED STUDENTS IN RESEARCH AND SCHOLARSHIP**



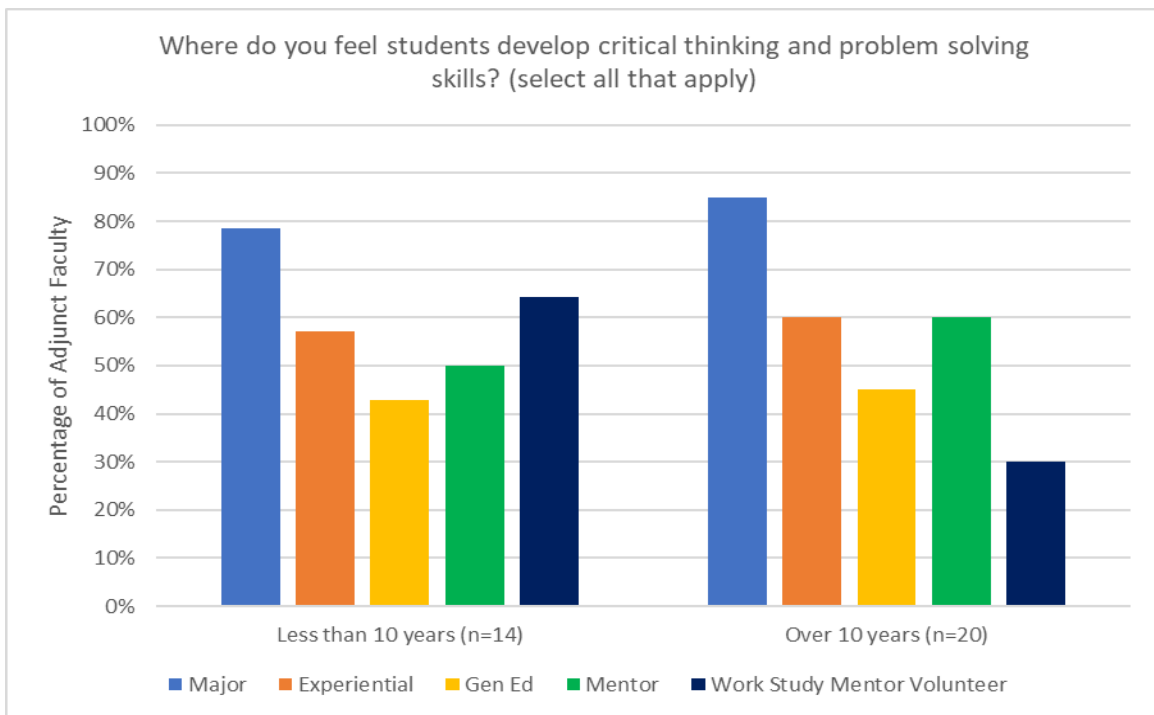
**FIGURE 9**  
**CRITICAL THINKING AND FACULTY WHO HAVE NON-ACADEMIC AND/OR INDUSTRY EXPERIENCE**



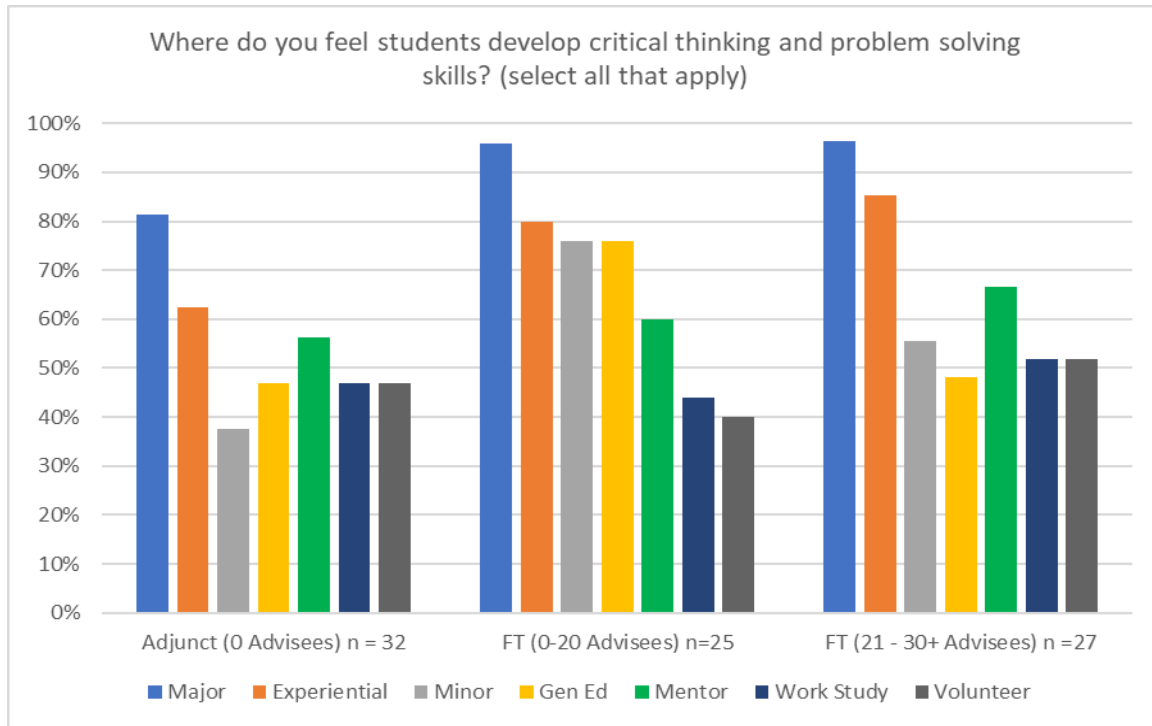
**FIGURE 10A**  
**FULL-TIME FACULTY YEARS OF TEACHING AND CRITICAL THINKING SKILLS**



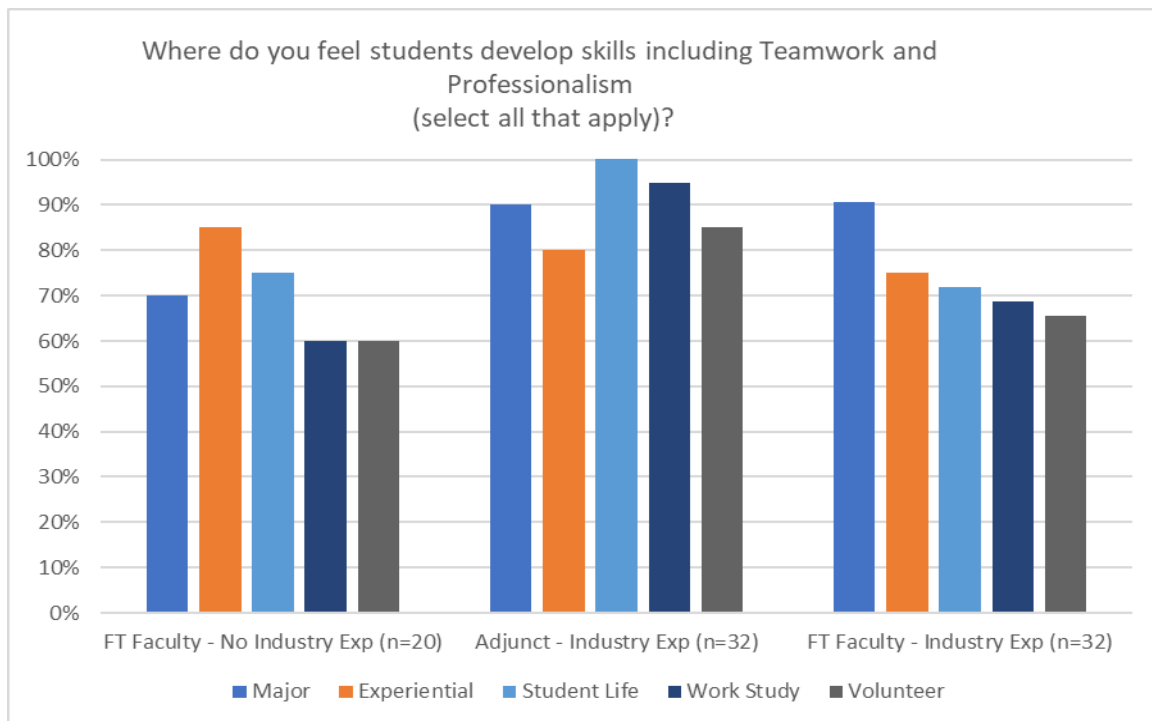
**FIGURE 10B**  
**ADJUNCT FACULTY YEARS OF TEACHING AND CRITICAL THINKING SKILLS**



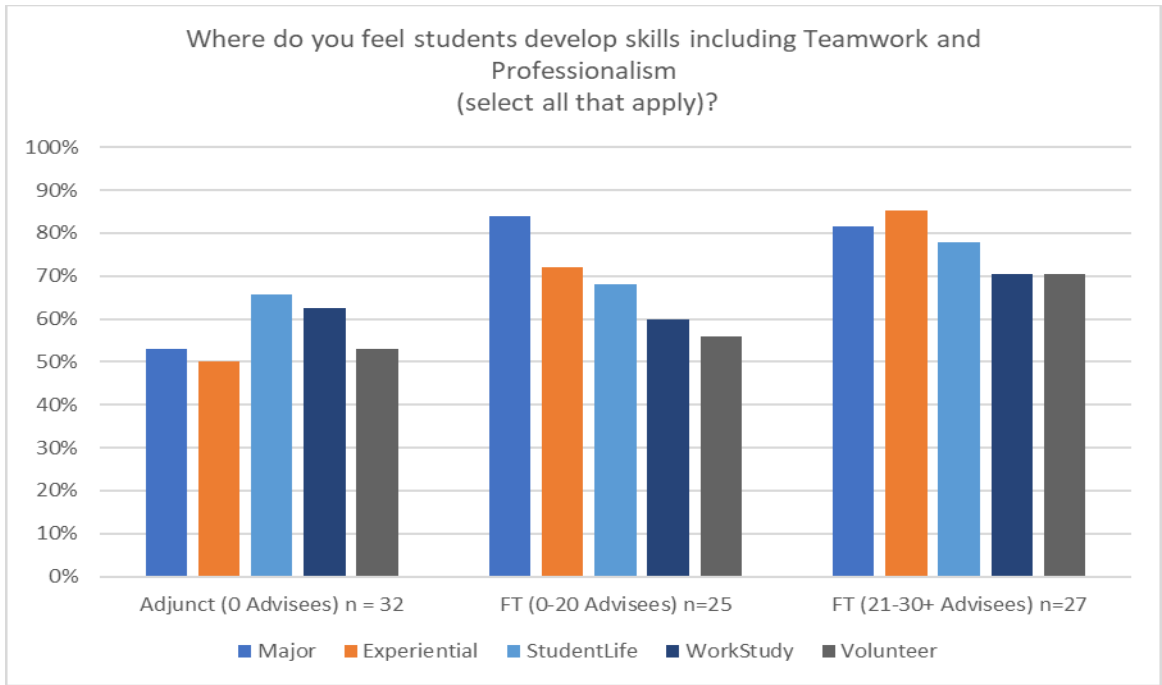
**FIGURE 11**  
**ADVISING LOAD AND CRITICAL THINKING**



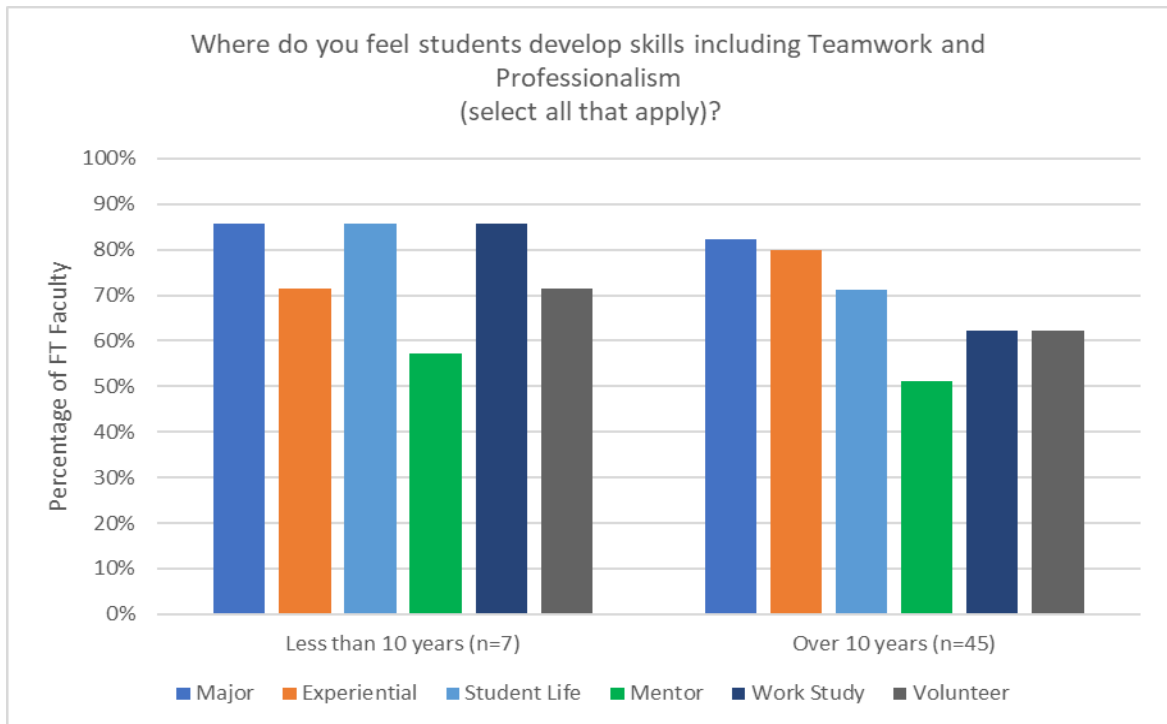
**FIGURE 12**  
**FACULTY WITH NON-ACADEMIC AND/OR INDUSTRY EXPERIENCE AND PERCEPTION OF TEAMWORK SKILLS DEVELOPMENT**



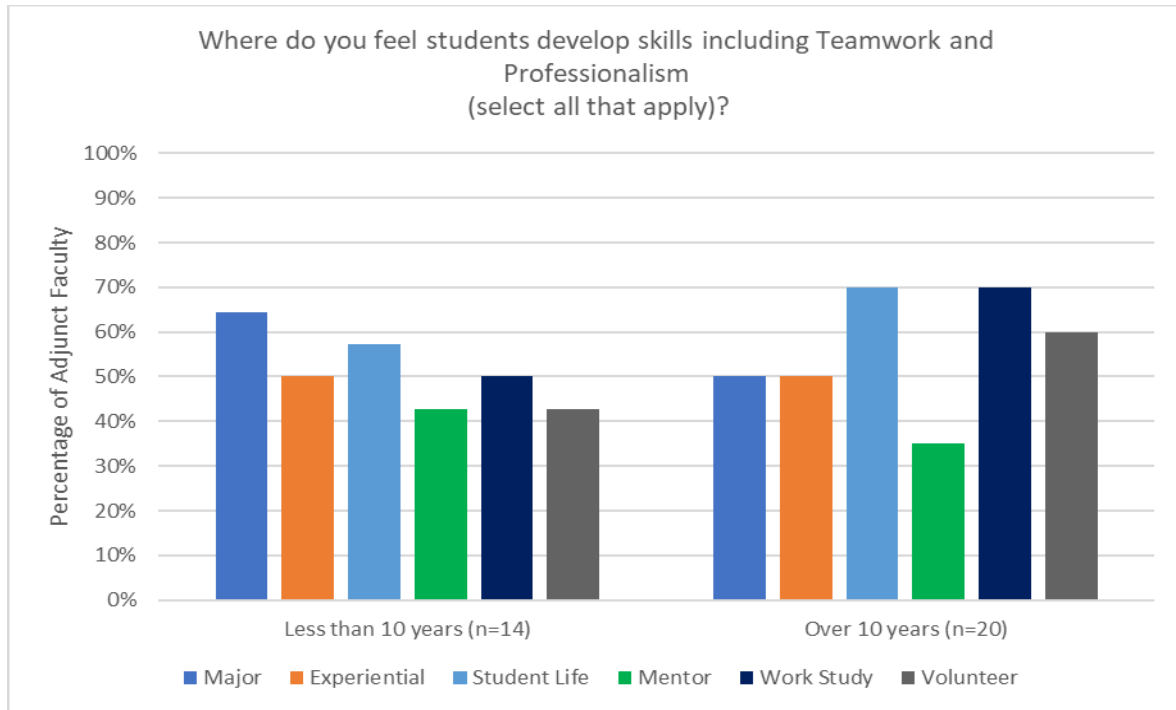
**FIGURE 13**  
**FACULTY BY NUMBER OF ADVISEES AND PERCEPTION OF TEAMWORK SKILLS DEVELOPMENT**



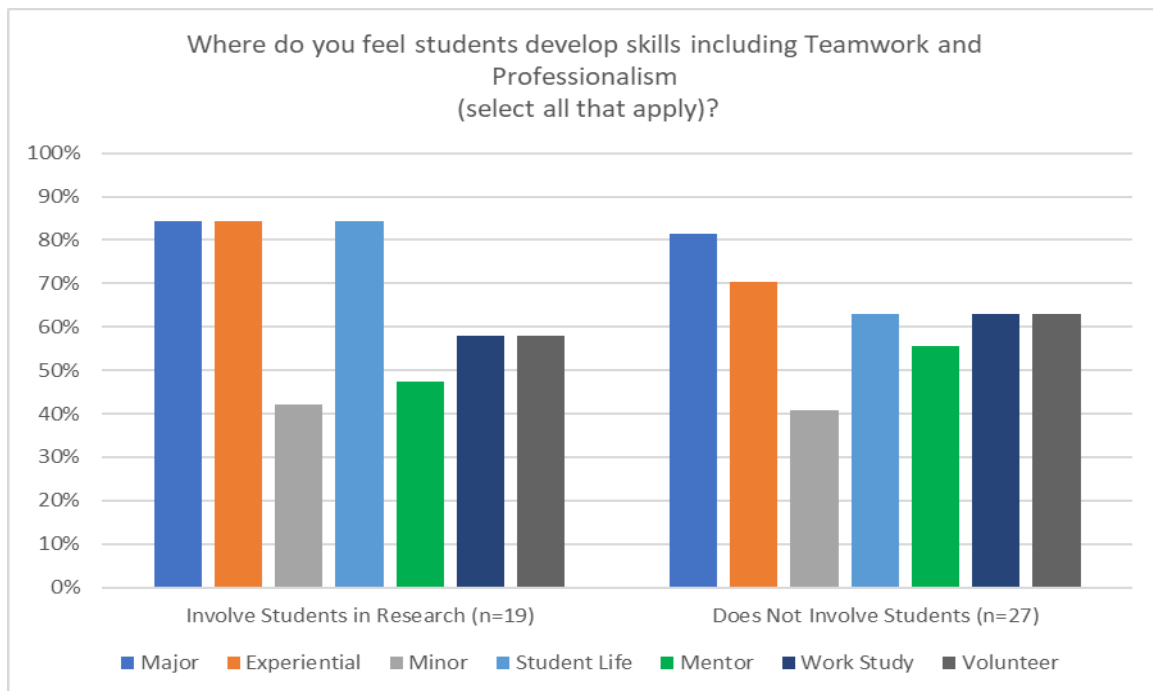
**FIGURE 14A**  
**YEARS OF TEACHING AND PERCEPTION OF TEAMWORK SKILLS DEVELOPMENT (FULL-TIME FACULTY)**



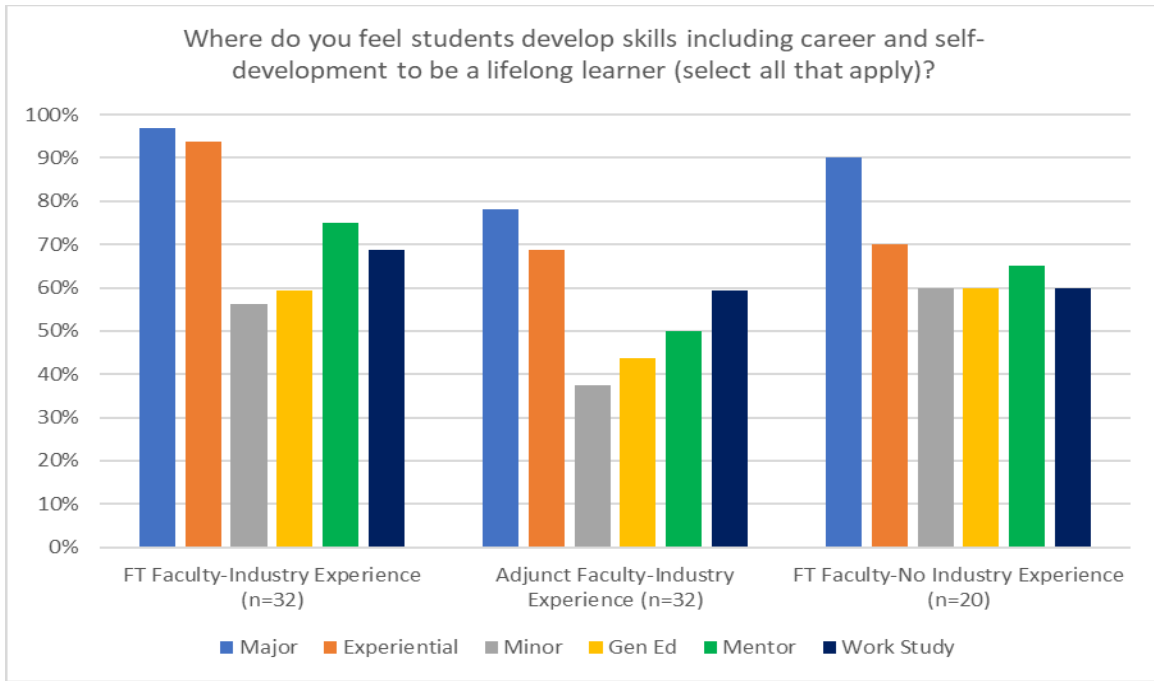
**FIGURE 14B**  
**YEARS OF TEACHING AND PERCEPTION OF TEAMWORK SKILLS DEVELOPMENT**  
**(ADJUNCT FACULTY)**



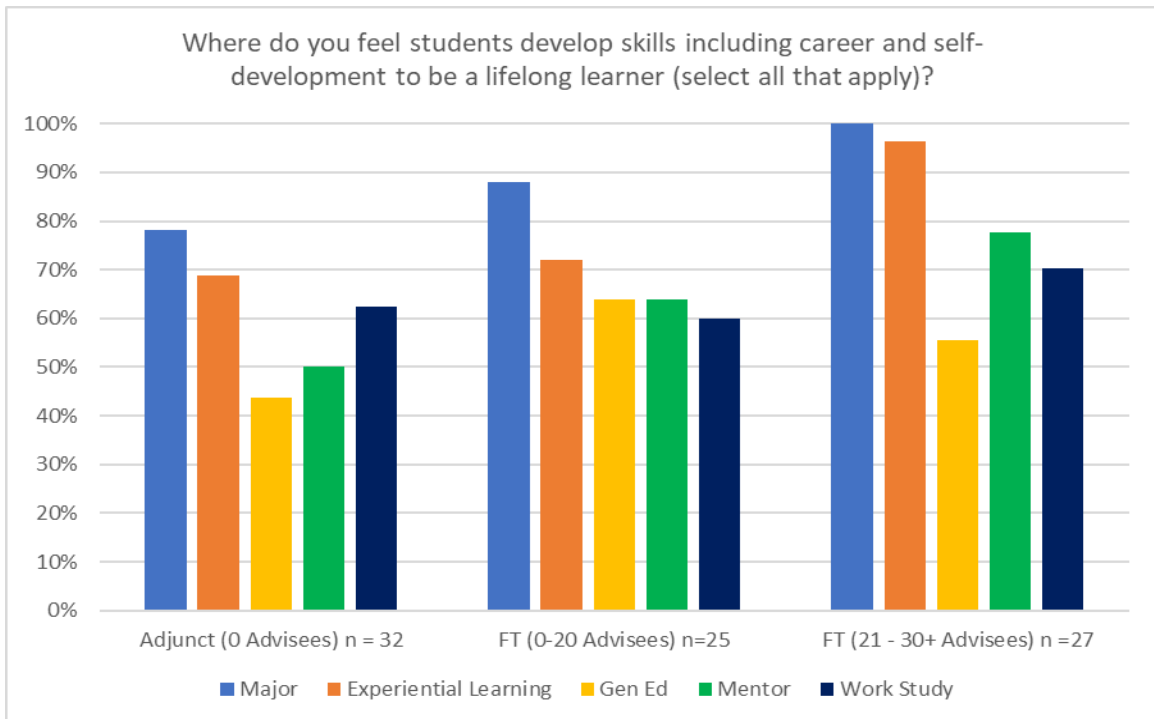
**FIGURE 15**  
**FACULTY WHO INVOLVE STUDENTS IN RESEARCH/SCHOLARSHIP AND PERCEPTION**  
**OF TEAMWORK SKILLS DEVELOPMENT**



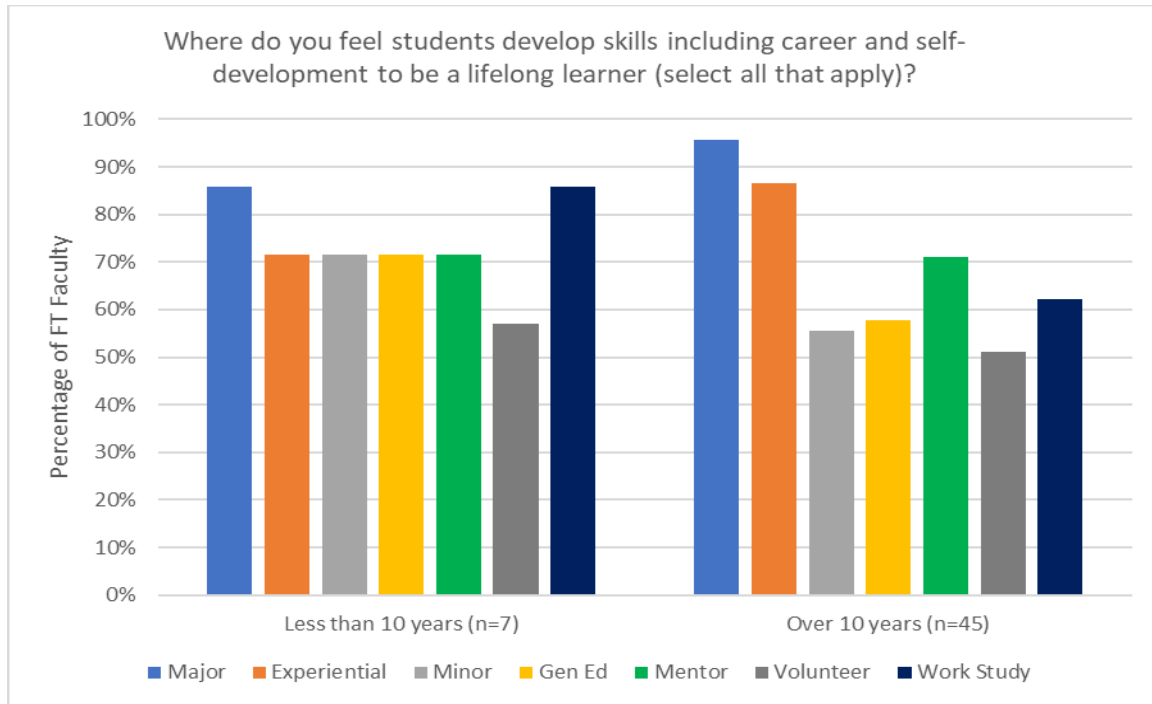
**FIGURE 16**  
**FACULTY WITH NON-ACADEMIC/INDUSTRY AND PERCEPTION OF CAREER- AND SELF-DEVELOPMENT SKILLS**



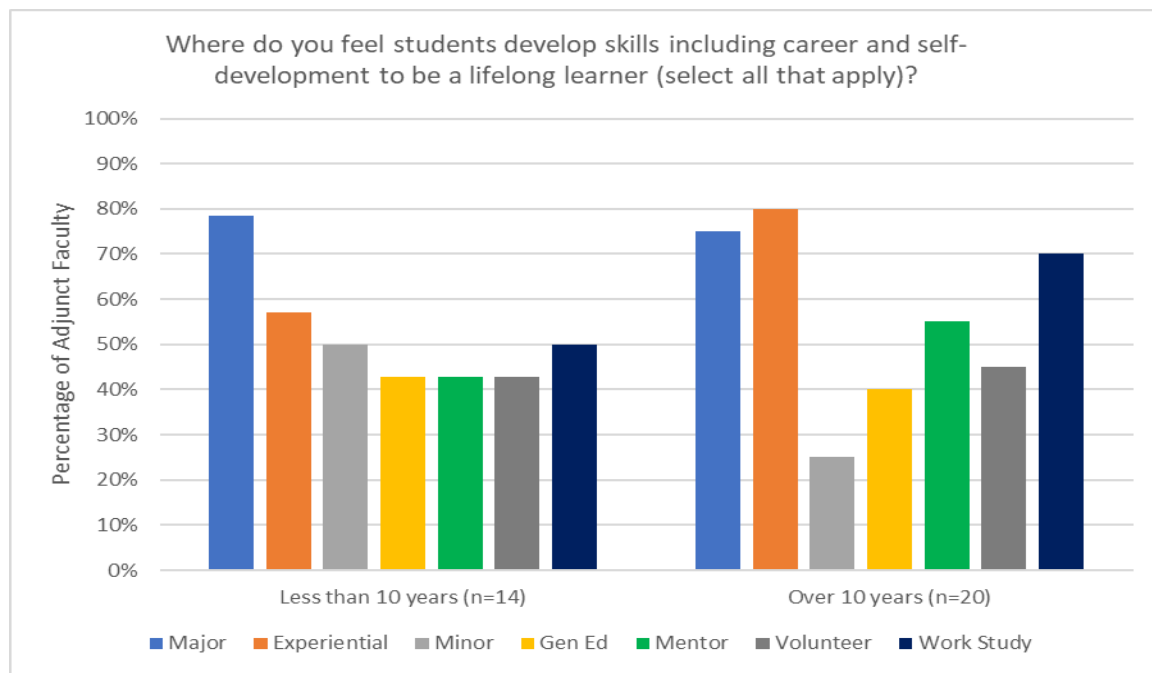
**FIGURE 17**  
**FACULTY BY ADVISEE LOAD AND PERCEPTION OF CAREER- AND SELF-DEVELOPMENT SKILLS**



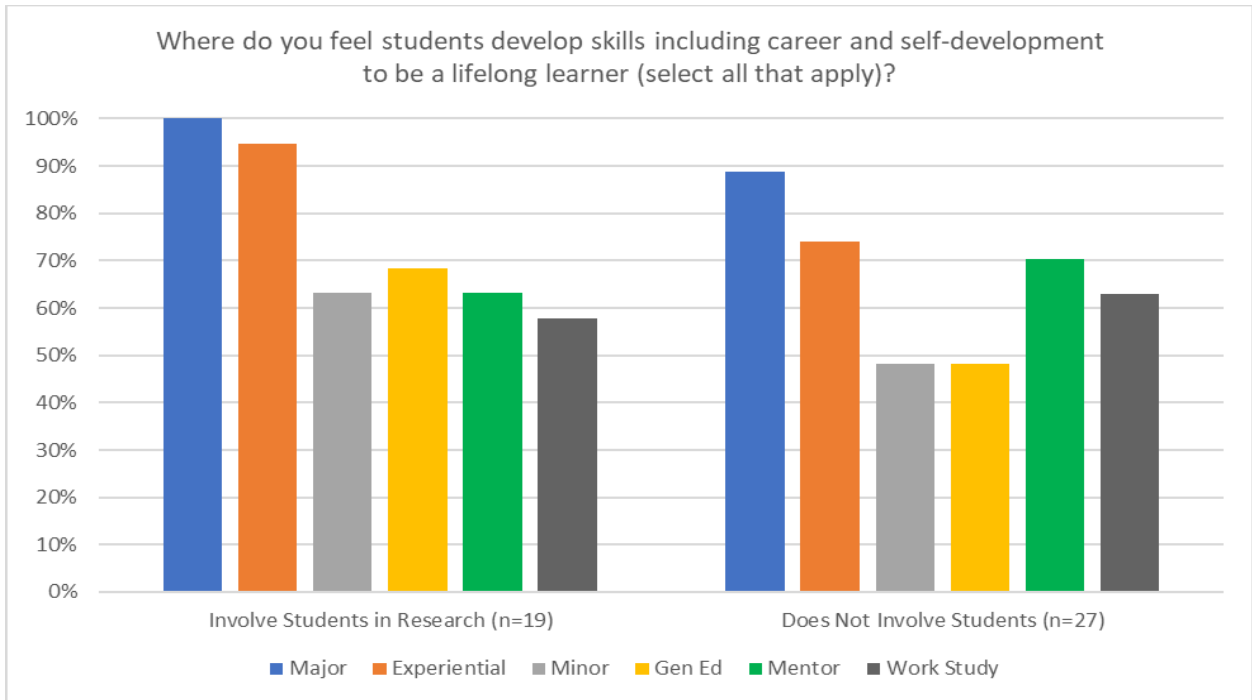
**FIGURE 18A**  
**FACULTY BY YEARS OF TEACHING EXPERIENCE AND PERCEPTION OF CAREER- AND SELF-DEVELOPMENT SKILLS (FULL-TIME FACULTY)**



**FIGURE 18B**  
**FACULTY BY YEARS OF TEACHING EXPERIENCE AND PERCEPTION OF CAREER- AND SELF-DEVELOPMENT SKILLS (ADJUNCT FACULTY)**



**FIGURE 19**  
**FACULTY WHO INVOLVE STUDENTS IN RESEARCH/SCHOLARSHIP AND PERCEPTION**  
**OF CAREER- AND SELF-DEVELOPMENT IN STUDENTS**



**FIGURE 20**  
**R.I.S.E. ENGAGEMENT AND TEAMWORK SKILLS DEVELOPMENT**

