

A Qualitative Study of the Role of Engineering Peer Advising Leaders (EPALS) Program on Undergraduate Engineering Students' Learning Experience

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Abstract

This is a Complete Evaluation Paper for the First-Year Programs Division. The influence of peer programs on student development has been studied. Although several studies have investigated the impact of peer programs on international students and undergraduate programs in general, more work is needed in evaluating the impact on students who offer the support and on groups of students in a particular discipline.

In this study, we present the evaluation of the impact of the Engineering Peer Advising Leaders (EPAL) program in the College of Engineering at the Pennsylvania State University, a large research-one (R1) land grant university, using a qualitative methodological approach. In this study, we explored the experiences of the EPAL peers and students who utilized the EPAL program. Primarily, data collection was conducted using a focus group discussion. In total, seven EPAL students participated in the focus group discussion. In addition, reports of students who took advantage of the EPAL program were analyzed. Thematic analysis of the data collected was conducted.

The study's outcome showed that first-year engineering students perceive that the EPAL program provided them access to academic guidance on courseload, expectation, and scheduling; peer advising for academic success; acquiring time management and study strategies skills; and increased awareness of campus resources. Furthermore, EPALs who provided the advising service reported that the EPAL program provided them with opportunities for professional skill development and improved their awareness of campus resources. Overall, EPALs and first-year engineering students have a positive outlook on the peer advising service. These findings underscore the need for more peer-led programs in the College of Engineering, which can play a crucial role in supporting students' journey as they navigate their engineering pathway. We recommend the implementation of these programs to further enhance the learning experience of students.

Keywords: Peer advising, Undergraduate Engineering Students, Learning and Development

Introduction

Peer advising programs are intended to simultaneously benefit the student advisees, the students serving as peer advisers, the units of professional advisers, and the institution at large. Institutions across the United States have seen valuable outcomes as a result of implementing peer advising programs. Peer advising programs are much less common than peer mentoring programs and differ in both purpose and structure. The purpose of peer advising programs is twofold: to provide first- and second-year students with reliable information from a relatable source and to provide upper-class students with an opportunity for professional development and leadership.

In 2012, The National Academic Advising Association defined peer advisers as “students who have been selected and trained to offer academic advising services to their peers” [1]. Some students struggle transitioning to college and report difficulty with balancing time between different courses and commitments, adapting to college-level academics, study habits, and even social challenges [2], [3]. In these situations, students seek out informal peer advising from friends and upper-class students at their institution. [2]. Informal peer-to-peer advising occurs across campus: in the residence and dining halls, in classrooms, or even at the gym. Sometimes, this informal advising provides students with incorrect information or a false sense of security, which eventually adds stress and struggle to their academic career [4].

Official peer advising programs are comprised of students who have received formal training, ensuring that information is accurate and resource referrals are appropriate. These programs are also supervised by professional academic advisers, adding an extra layer of assurance to both the student advisee and peer adviser. First-year students who utilize peer advising programs report feeling supported in the transition to the university environment [2], [4]. Peer advisers offer an additional benefit to first-year students: relatability. Professional or faculty advisers often present both an age and experience gap, while meeting with a fellow student allows for reliable information transmission from first-hand knowledge of the coursework [2], [5].

Peer advisers provide insight and connect students to academic support and resources like campus tutoring and office hours. They also often help connect students to other institutional opportunities and involvement, like research, study abroad opportunities, clubs, and professional organizations. Peer advisers can also be a source of encouragement and motivation to struggling students. Students that utilized peer advising programs reported an increased ability to be their own advocate and confidence to complete tasks independently [2]. While peer advising programs have not replaced, and were never intended to replace, professional and faculty advising, the success of the programs suggests that they are meeting an entirely different demand altogether.

In addition to meeting tangible needs for students, peer advising programs also help tremendously with practical needs, such as cutting down or eliminating long wait times. During busy times of the semester, students often face waiting times of days or even weeks to meet with a professional adviser. With the addition of peer advising programs, students can get immediate assistance for quick questions in multiple formats (in-person, virtual, e-mail, etc.) [2].

Background

Description of Peer Advising at the Pennsylvania State University

The peer advising program at the Pennsylvania State University's College of Engineering, Engineering Peer Advising Leaders (EPALs) has been successful since its launch in 2019. Through it, students have received helpful information, support, and connections to resources. Additionally, the students volunteering to serve as EPALs have gained valuable experience as peer leaders. The EPAL program has supported both the professional advising office and the students seeking help from a relatable peer.

Recruitment and Training

The EPAL recruitment process begins early in the spring semester with a call for nominations and targeted advertising about the program to Engineering students. The selection committee reviews applications, conducts in-person interviews, and applies a common rubric to evaluate each candidate on their 1-on-1 communication skills, helping skills, detail-oriented mindset, academic achievement, and dependability. Near the end of the spring semester, selected students are invited to meet and connect with current and incoming EPAL members. Over the summer, EPALs complete a 3-6 hour online asynchronous module that outlines the position and expectations. Some topics include campus resources, active listening skills, role boundaries and expectations, and college and university policies and procedures. EPALs continue their training with 6 hours of online synchronous training in August that focuses on team building, advising tools, communication skills, university policies, and curriculum details [6].

During the fall, EPALs take a 1-credit course called ENGR 291, designed to supplement EPAL growth and development while creating a space to ask questions while serving as an EPAL. Returning EPALs offer advice and assist newer EPALs in how to answer questions, which helps build a cohesive team. Self-discovery and growth in leadership skills are the cornerstones of the class. Peer advisers benefit from the program as much as the students they serve; They develop leadership skills, learn about counseling and educational theories, and reflect on their valuable experiences [3], [7].

Learning objectives for the course include:

- Articulate different definitions and related sub-themes that could comprise peer advising, peer mentoring, interpersonal communication, and leadership soft skills.
- Evaluate the current level of development in soft skills and develop a plan for future reflection, evaluation, and adjustment to said skills.
- Demonstrate effectiveness in your role and build confidence in providing advising assistance.
- Demonstrate familiarity with resources and opportunities in the College of Engineering and the greater campus and execute the effective sharing of timely and relevant information.

EPALs are evaluated on their ability to meet these objectives and are expected to produce a skills portfolio in which they explore their leadership journey and reflect on their academic experiences [8]. This culminates in a presentation of this personal project.

Literature Review

Professional skills development

Students who serve in peer advising roles greatly benefit from the experience by gaining valuable skills that support their personal growth and development [9]. Through the application, interview, training, and advising processes, students practice and develop professional skills, similar to skills gained during internships, that carry forward and serve as useful tools post-graduation [6], [8].

Peer advisers have reported growth in the development of skills, including leadership, communication, organization, teamwork, time management, and presentation skills [10]. They also noted an increase in confidence in active listening, mediation, and trust-building [8]. Peer advisers develop the ability to stay composed and professional in varied situations. They learn to approach others with compassion and kindness and build meaningful relationships with supervisors [3].

Peer Advising and Academic Guidance

Unfortunately, not all peer-to-peer advising is positive. Sometimes, students pass along misinformation to their younger counterparts [4]. Trained peer advisers serve as an avenue to accomplish this transmission of knowledge, such as assistance with course scheduling, in an effective and accurate way [8]. Advising on course selection, understanding degree requirements, and major exploration are some of the most common reasons students seek out a peer adviser [10], [11], [12]. This peer-to-peer connection gives students a relatable connection with a peer who has recently taken the same classes and progressed successfully through their major [13].

Students involved in various peer advising programs reported that peer advisers helped them acclimate to college life, provided resources, gave them valuable advice regarding minors, helped them to evaluate their progress with classes, provided study tips, helped with registration procedures, improved time management skills, career exploration, and understanding campus resources and institutional policies [8], [14], [15], [16].

Information on the utilization of campus resources

Peer advising programs have many benefits to both the students who utilize the service and those who serve in the role [4]. Significant transition happens during the first year of college, and there are many challenges for students to learn about a new culture of an institution [13]. Although there are situational differences among students, all will enter college and confront challenges [9], [17]. Peer advising can be powerful during this transition because they can offer recent, first-hand experience [13], [18], [19].

Many times, first-year students are hesitant to seek out resources on campus, especially when it comes to emotional and mental health [9]. Peer advisors are often the missing link to connect

students to campus resources, including career and personal counselors [9], [19]. This informal trust created between students and peer advisors is something faculty and staff cannot replicate and promotes student success [9], [19]. Purdy writes, “The connections forged between the peer advisors and our advisees are something professional advisors could not achieve. It builds trust with the advising center that carries throughout the advisee’s academic career and fosters an environment where they are willing to keep an open mind to believe that the advisors care about them and truly have their best interest at heart” [20].

The peer advisers are also impacted by these relationships; They are more likely to seek out resources and meet with a professional adviser [12]. They also develop more of an ability to resolve complex problems, show greater empathy and compassion, show an increased emotional well-being, have better interpersonal communication skills, and have a higher self-esteem [9], [12]. Peer advisers provide valuable feedback about student perceptions of campus resources offered that can improve the quality of an institution’s services [9].

Academic success

As student needs change, student services need to change alongside them. One way some institutions have met these changing needs is to implement peer advising models that provide students with mentors who have “successfully demonstrated that they can succeed in college” [19]. These successful connections between peers contribute to student persistence [19].

While such programs are often initiated to meet immediate student needs, such as questions about the curriculum, understanding of course material, etc., there are long-term effects on both the students being served and the students doing the serving [7]. These effects include increased cognitive development, communication skills, internal motivation, intrinsic fulfillment, stronger relationships with faculty and staff, increased understanding of institutional policies and structures, increased “awareness of professional and ethical issues,” and an “enhanced sense of belonging” [7]. Perhaps most significantly, these types of peer-to-peer relationships have been found to impact student persistence and retention in higher institutions positively [21].

To evaluate the peer advising program at The Pennsylvania State University, the following evaluation question (EQ) was asked:

EQ: What is the impact of peer advising on undergraduate engineering students’ experience?

Methodology

Evaluation Design

A qualitative methodological strategy was used as an exploratory approach in investigating the impact of peer advising on the students [22]. This methodology is suitable as the evaluators seek to understand what is occurring when students utilize peer advising opportunities and how these experiences influence their learning as undergraduate students in the college of engineering [23]. Two cohorts of students were involved in the study including those who benefited from peer

advising by reaching out to an EPAL, and the EPALs who advised students in the College of Engineering.

Participant Recruitment and Description

All outgoing 2022-2023 students on the EPAL team were recruited to participate in a focus group to share their experience as an EPAL (a total of nine students) in this evaluation study. The participants were not offered any type of incentive to participate. Of the nine recruited students for the focus group, seven EPALs participated in the focus group discussion. For the EPAL team participants in the qualitative study, five were female, and two were male. They were in their third or fourth year of studies in the College of Engineering at Pennsylvania State University. Two members of the EPAL team serve as lead to the EPAL team. The two leaders were paid. However, other EPAL team members are not paid.

For students who used the EPAL service, eleven of them were female, and nineteen of them were male. They were all in their first year in the College of Engineering at Pennsylvania State University. These students were not paid. They were enrolled in a first-year seminar course that all College of Engineering students must take. The goals of the course include an introduction to college life, review of different department and college resources and major and minor exploration, all while interacting with university faculty, advisers, staff, and other students. This particular study focuses on one specific section of the course whose students were assigned to meet with an EPAL as part of a required class assignment. The total enrollment for the course was twenty-three students, and all twenty-three students met with an EPAL and wrote a 1–2-page essay reflecting on their experiences during the advising appointment.

Table 1.

Demographic information of EPALS and Students Who Benefited From EPAL

Baseline Characteristic	EPAL		Students Who Used EPAL		Total	
	N	%	N	%	N	%
Gender						
Female	5	71%	6	26%	11	37%
Male	2	29%	17	74%	19	63%
Not listed						
Race						
URM	0	0%	10	44%	10	33%
NON-URM	6	86%	12	52%	18	60%
Not Listed	1	14%	1	4%	2	7%
Year						
First-year	0	0%	23	100%	23	77%
Second-year	0	0%	0	0%	0	0%
Third-year	4	57%	0	0%	4	13%
Fourth-year	3	43%	0	0%	3	10%

Data Collection and Analysis

For the qualitative assessment of the program, two forms of data were collected and analyzed to understand the impact of the peer advising program on the 1) first-year undergraduate engineering students who utilized the program and 2) EPALs who provided the advising to these first-year students. Data was collected from the EPAL cohort via the focus group discussion, which lasted for about an hour. For the first-year students who benefited from peer advising, their reflective written document of their experience with EPALs served as our collected data. In total, seven EPAL students participated in the focus group discussion, and twenty-three students' reflective experiences were analyzed. The details of the demography of both cohorts can be seen in Table 1. The focus group discussion took place in person and was audio-recorded. The audio recorded conversation was transcribed verbatim by one of the evaluation team members. For the written reflection by the students, questions like What is the context of your visit? What kinds of questions did you ask? What kind of things did you talk about? Did you find the EPAL helpful? Why or why not?

For data analysis, thematic analysis of the focus group discussion and student reflection was conducted by the evaluation team [24], [25], [26]. The coders developed familiarity with the data by reading through the manuscript repeatedly, and the data was iteratively coded. No software was used for data analysis. Coders were faculty members with expertise in engineering education and graduate research assistants trained in qualitative analysis.

Results

Our analysis results are presented in two sections: the impact of peer advising on students and b) challenges with peer advice.

Impact of Peer Advising on Student Experiences

Academic guidance on course load, expectation, scheduling

The most repeated theme during the thematic analysis of this work was the academic guidance students received from EPALs on course expectations, course scheduling, course selection, and course load. Students recurrently sought advice and information on general education and discipline related courses to take. An EPAL noted, "*My students ask about specific courses; which classes does he take now, and how does it differ from other disciplines?*" Some of these experiences of having academic guidance from the EPALs in the students' words are narrated below.

Most of the questions that I asked EPAL. were about my classes and my schedule for next semester as I am not sure if I will be able to keep up with the course load that I am expecting to have. I asked her questions about the difficulty and level of work needed for some of the classes I will be taking such as Physics 211 and Math 230.

*Her advice was very helpful as it made me understand that it will not be easy for me to do well next semester, but it is possible, and it will just take a lot of work. EPAL also recommended to me that in order to make classes such as Physics 211 and Math 230 easier, **I should review some of their fundamental topics over the summer**, so that I have a leg up going into the semester. Another helpful piece of advice that the EPAL gave to me is that I should gauge the actual level of difficulty of my schedule within the first few weeks of the semester. This way, I can at least attempt this schedule but then if it ends up being too difficult within the first few weeks then I can drop one or more of the classes and replace it with another one (Student 6).*

*...for my visit, I wanted to talk about general information regarding biomedical engineering and the course load. I was able to ask various questions and gain insight into an older student's perspective on biomedical engineering. I believe **it was very beneficial for me to hear all of the advice and wisdom from an older student (Student 1).***

Other students narrated how visiting the EPAL provided them with valuable information they needed in making decisions as to what minors they should take. One student noted: *I found my EPAL visit to be helpful.... The information about the minor was useful and persuaded me to pursue the minor (Student 12).* Some specific guidance on choosing a minor includes EPAL providing resources and a handbook on minors that exist, advice on an alternative minor to consider, and the best approach to have a conversation with an adviser regarding declaring a minor. Below are quotes from students about their experiences with utilizing the EPAL services and how that was helpful in choosing their minor.

*She saw that my course load was heavy but reassured me because of how well I did my first year with the same course load. We also discussed the possibility of taking a minor. This was on my radar at one point, but I let the idea go once I found out that XXX business school will not let me do a finance minor because I'm not in their college. But **EPAL showed me the bulletin and the unbelievable number of minors. She showed me some of the ones I am already really close to getting. These include a Math minor and an Economics minor.** I am interested in the math minor because I have considered teaching math later in life at the high school where I grew up. I have also considered an economics minor because it is closely related to the business world, and I have thought about working in Manhattan for a brief period in the financial world. I am thankful for EPAL's help on my schedule (Student 18).*

I asked her about what minor I should take as a chemical engineering student. She showed me the chemical engineering handbook which I never knew existed and there are a few choices of minor that I can take without having to take additional classes and few minor with few additional credit classes to take (Student 23).

Peer advising and academic success.

Students who used the EPAL program repeatedly mentioned the impact of peer advising on academic success. Several of the participants related how advising from an EPAL better

positioned them for academic success. They noted that EPAL advice on reviewing fundamentals, considering prerequisite sequences, and developing software skills that will be used in a course, was invaluable. Furthermore, they related that meeting with the EPAL fostered their confidence in succeeding and made them less stressed about their academic work. Some of the following quotes attest to this.

“EPAL convinced me that I have what it takes to tackle physics in person as long as I stay focused and use my resources. EPAL’s advice has made me less stressed about next year and hopeful that I will succeed in my endeavors (Student 11).”

I would say that she was a huge help to me. Even though she is a comp sci major, I still found her extremely friendly and helpful.....The second thing I asked about was how to tackle computer science. Computer science was a new subject to me so the upcoming CMPSC132 really made me worried. She said that I should just focus on the basics and try to join some courses online. All it takes is practice and I will definitely apply this advice throughout the summer so that I am ready for whatever is to come (Student 9).

Since the EPAL is also an Engineering student, I asked for his suggestion on how to improve my academic performance in that class. He suggested that whenever I have something I don’t understand in class, go ask the professor immediately or I can go to the office hours, or I can also meet one of the Teaching Assistants to ask question (Student 10).

Furthermore, some participants described how advising from an EPAL was beneficial when they were struggling with retaining interest in the engineering program because they struggled with chemistry and physics. Student 3 related:

“Finally, I asked the how she stays motivated in her major when she must take classes that she is not interested in. I asked this because although I am passionate about math, I struggle to stay interested in my science classes, like chemistry and physics. She recommended to go to office hours and talk to your professor a bunch to make sure you don’t fall behind. I found this experience very helpful (Student 3).”

EPALs narrated how they have advised students on how they can best succeed as students. An EPAL said *“I talked to them about grade forgiveness, what best path forward is.”* An EPAL noted *“I think being an EPAL would help especially when you have not gotten mentorship experience before.”* Other students related how seeking an EPAL eliminated stress and anxiety about their classes and career. Student 6 noted *“Overall, visiting with EPAL was very helpful to me and I think will help me to be more prepared for my next semester, or at least less stressed about it over the summer.”*

Acquiring time management and study strategy skills.

Students who participated in the peer advising program attested to acquiring time management skills and study strategies skills as they had conversations with EPALs. Some of the narrative on

time management shows how first year students learn to maintain a work-life balance and being prompt in delivering assignments. One of the students related *“The EPAL also taught me strategies to balance work and life, he said I can pick a day in a week to be my off day, I don’t do anything in that day, but work on every other day. This seems to be a reasonable strategy, and I will definitely try it.”* Student 3 gave a comprehensive reflection of time management skills they gained from visiting the EPAL:

I asked an EPAL how to work on bettering time management, specifically with exams and when to begin studying. I asked this because I am very bad at time management and never know when to start studying. She recommended that you keep an agenda in a journal, or calendar. She noted that it works better for her on paper, because if it’s on your phone, then other things on your phone might distract you. The EPAL said that for homework assignments, you should do a little bit each day, so you never have to do a bunch of work all at once. Also, if you find yourself very busy one day, it’s ok not to do work on that day since you already got some of it done..... I found this experience very helpful. I got a lot of good tips on time management that I will definitely employ, starting with buying a journal next year to map out my assignments (Student 3).

One of the students narrated how an EPAL advised that the best way to prepare for a test is starting preparation very early on. In the student’s words: *“For exam studying, she recommended beginning to study one week before your exam and to start by taking a practice exam to see what area you need to study the most. Similarly, to homework, if you start a week before, it’s ok if you skip a day or two, because you already got some groundwork covered (Student 3).*

Increased awareness about campus resources.

Both the EPAL and students who used the EPAL service testified that their awareness of campus resources increased. An EPAL related *“The EPAL center provides an excellent resource for students seeking guidance and support in their academic pursuits. I recommend it to anyone looking for personalized attention and advice.”* Another EPAL noted how being an EPAL with the College of Engineering provided him with the opportunity to learn about resources that people in other majors do not know. In EPAL’s words, *“I have been able to help my friends and families in other majors and apply what I’ve learned through EPALS to help them. They don’t know the resources that we know about.”* Some specific campus resources that students who used the EPAL service became aware of include course scheduling and selection tools, grade forgiveness tools, and departmental handbooks on minor selection. Some of the students' experience of increased awareness of campus resources by visiting EPAL can be seen below:

Overall, I learnt about new tools (Gen-ED tool “Move-3 substitution” with this tool where I could transfer some of my credits to other areas to fill in the requirements and; Grade Forgiveness Tool which I intend to use for one of my Gen-EDs) and resources that I could use that were very useful and his positive experience as a Comp Sci. major in his Junior year reassured my choice as an intended Computer Science major(Student 7).

The first question I asked is where I can find what classes count towards what credit areas. He showed me on XXX scheduling system on how to access it. He told me on the home page that if I clicked on degree planning and tools, then click My Academic Requirements, it will show me all of the credit categories that I need to fulfill. If I click the arrow associated with the credit category, it will drop down a list that contains how many credits of that subject I have taken, how many more credits I need to take, and what classes that I have taken/are taking apply to the particular category (Student 17).

These are all examples of the unique insight peer advisers can provide to their peers because of their recent experience and expanded bandwidth to search through the thousands of available general education courses; this exchange could not have been replicated by a professional adviser.

Professional Skill Development

One benefit of participating in peer advising that was unique to the EPAL program is the professional development they experienced by participating in the peer advising program as a peer advisor. An EPAL related, “Yes, I was able to gather abstract problem solving from helping a student.” The EPAL cohort during the focus group agreed that the canvas training modules helped equip them with the needed skills to communicate and interact with the students. Another student related:

“I went for an interview at XXX company; the interviewer was impressed because I referred to Clifton strength inventory which I did as part of the training I received as a LEAD EPAL.”

Overall Positive Outlook.

Overall, students who use the peer advising service reported a positive experience. One student said “the EPAL was able to give me answers to multiple questions.” Below are other students' narration of their experience with EPAL.

In the future I will make sure to take advantage of what EPALs (Engineering Peer Advising Leaders) has to offer to underclassmen students like me (Student 2).

During my visit I came in with three questions in mind to ask the EPAL advisor..... All in all, I found my visit with the EPAL to be very thought provoking and useful as I was able to get multiple questions concerning answered about my major answer from the EPAL (Student 2).

Challenges with Peer Advising

Difficulty with advising students from different majors.

One primary difficulty EPALs encountered was advising students who were in a different major from their own. An EPAL noted “*I couldn’t talk about my experiences the same with different majors.*” Another EPAL said, “*I agree with [Participant X], the students were asking about classes I have not taken because I’m in comp sci, so I referred them to another EPAL, but couldn’t help them. It fulfilled more when they had a similar major.*” However, one EPAL noted they could help despite differences in major “*I have helped with course selection multiple times with majors I’m not familiar with.*”

Conflicting the role of peer advising with professional/faculty advising

Our result shows that sometimes students conflict the role of professional or faculty advising with student advising. That sometimes may limit student use of the EPAL resource. One EPAL said, “*Sometimes people don’t come in because they can meet with an actual advisor who does this for their career.*” The following are some of the students’ experiences of comparing and conflicting the role of EPAL to professional advising and why they would prefer to meet with a faculty or an EPAL.

Overall, I found the EPAL meeting very helpful. Although I love talking to advisors and getting professional advice, it was interesting to be able to talk to a student who is going through the exact same things as me (Student 1).

I do think that EPAL’s could be very helpful if you need some personal academic advice from someone who went through exactly what you’re going through. As far as classes and similar things, I would probably go to academic advisors first (Student 8).

I found out that they are supposed to be more relatable academic advisors to first year students.... Some academic advisors can be a little confusing or give you not so straight forward answers. I think EPALS are great idea (Student 21)

Limited knowledge of EPALs

Also, our results show that EPALs have some knowledge limitations. One student said, “*as for the Women Studies class, he could not give much information as he does not have much knowledge about how the class works during class hours.*” Another student noted:

I moved on to ask him about some general education interdomain courses that he could recommend, but unfortunately, he said that he couldn’t remember any of them off the top of his head.... even though I was not able to get any information about my future for general education courses (Student 12).

However, the EPAL role as peer adviser is different from the professional or faculty adviser. EPALs have been trained to know their limitations regarding advice that EPALs are authorized

and prepared to provide. They know when to refer students to a professional or faculty advisor when questions they were asked are beyond their scope of responsibility.

Discussion

The result from our assessment reinforces the notion that the overall peer advising experience is beneficial to both the peer adviser and the students utilizing the service. Students utilizing the peer advising service reported gaining valuable direction in relation to academic success. Also, they reported the benefit of receiving advising guidance and support from a peer who better understands the student experience. Some of the academic guidance received was on course scheduling, learning more about the courses required for specific degree plan, choosing general education requirements, and making informed decisions on minors. This outcome aligns with Kitutu et al., work which indicated that students who met with their peer advisers reported receiving valuable advice regarding minors, help with study tips and evaluating class progress [14]. Furthermore, this corroborates Diambra's 2003 study which suggests that peer advisers are readily available to give guidance and advising to students in the form of curriculum planning, class scheduling and delivering information [16]. In addition to this, our work shows that students who met with an EPAL received information about campus and tutoring resources, time management, and study skills. This outcome is like peer advisers reporting in Kitutu et al., that they helped acclimate students into college and provided resources and knowledge to the student to excel in and out of their classes [14].

The EPALs reported to have gained a myriad of valuable skills. These include improvement in their problem-solving skills and having a better connection to campus resources and professional advising staff members. This aligns with Latino and Unite, who found that students serving as peer advisers reported increased cognitive development, communication skills, internal motivation, intrinsic fulfillment, stronger relationships with faculty and staff, and increased understanding of institutional policies and structures [7].

There were some challenges voiced by peer advisers and students using the service. Several peer advisers shared they had trouble assisting students who weren't from their own major and had to refer students to other peer advisers or professional advisers. We also found that, at times, students did not have a clear understanding of the role of the peer adviser and what they could expect during a meeting versus a professional adviser. More research is needed to help decrease these challenges peer advising programs may face.

Implication

There are many clear benefits to peer advising structures within a professional academic advising center: improved sense of belonging for peer advisers and other students, increased availability for students to receive quick answers, advice and perspectives from a peer that is in the same stage, etc. The long-term effects of such programs, for the peer advisers, the students meeting with peer advisers, and the professional academic advising units, have not yet been tracked or studied. It would be beneficial to track outcomes for students that sought assistance from peer advisers through the remainder of their time as college students, outcomes for peer advisers and

the effect the role and experience had on their future professional endeavors, as well as to track the long-term effect the addition of a peer advising model has on the academic advising unit itself. The available literature and this study agree that peer advising structures are beneficial and valuable in an immediate and short-term sense. We recommend that more peer-led programs be provided in the College of Engineering to aid students' journey as they navigate their engineering pathway.

Conclusion

In this study, we represent the evaluation and impact of a peer advising program in the College of Engineering on the peer advisers and the students who use the service. The findings offer a unique insight into the benefits of peer advising in a higher education setting. Outcomes showed that engineering students gained valuable skills regarding their academics, time management, professional and career development, and knowledge of campus resources. It aided students in their course planning, meeting degree requirements, and their ability to navigate the support services available to them. Peer advisers gained leadership, mentoring, and communication skills from the experience and they were better prepared for their professional life post-graduation. We recommend that more peer-led programs be provided in the College of Engineering to aid students' journey as they navigate their engineering pathway.

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