Bridging the Supplemental Instruction Leader Experience and Post-Graduation Life

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Abstract

This qualitative case study explores the experiences of former SI leaders who worked at a four-year, private university in the Mid-Atlantic while completing their undergraduate degrees. The insights offered by participants through interviews and graphic elicitation reveal the ways in which serving as an SI leader prepares students for their post-graduation lives through the transferability of skills. This study also seeks to fill a void in research, as studies on academic assistance programs tend to explore benefits for student participants, such as increased retention and course grades, but fail to explore the development of the programs' student leaders.

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The role of higher education continues to be questioned in today's society due to the lack of engaged American citizenry and the rising cost of a college degree (AASCU, 2017).

According to former college president Brian C. Mitchell, the case for American higher education "shouldn't abandon the idea that colleges exist to educate broadly and to prepare people to be productive citizens—but it also must recognize that students and families do want postsecondary education and training to prepare them for career success" (Lederman, 2017, para. 5). Therefore, in addition to educating, institutions of higher education must provide students the opportunity to develop skillsets that are most desirable by future employers. The National Association of College and University Business Officers has coined this concept "a new way of articulating the value of higher education" (para. 15).

Results from the National Association of Colleges and Employers' (NACE) (2017) *Job Outlook 2016* survey found that more than 80 percent of employers intentionally seek to hire "leaders who can work as part of a team" (n. p.). In addition to academic major and GPA, employers cite graduates' participation in leadership roles as having a significant influence on hiring decisions (NACE, 2017). Studies that focus on the intersection of civic engagement and student leadership in higher education found that students who are engaged in leadership opportunities during their undergraduate years demonstrate improved academic performance, critical thinking skills, communication, and leadership qualities that are transferable to real-world settings, such as post-graduate school and future employment (Cress et al., 2010).

Broadly, student leadership is defined as "students who have been selected and trained to offer educational services to their peers [that] are intentionally designed to assist in the adjustment, satisfaction, and persistence of students toward the attainment of their educational goals" (Ender & Kay, 2001, p. 1). Student leadership within the realm of peer-facilitated academic assistance programs has a long tradition in higher education and has proven successful in promoting student success. (Ning & Downing, 2010). Student leaders "effectively serve as a bridge between course 'experts' with extensive content knowledge and the lived experience of the student body," thus truly functioning as facilitators of learning rather than sources of knowledge (Sloan, Davila, & Malbon, 2013, p. 86). The role of the student leader, in this sense, supports the constructivist paradigm, which serves as the theoretical foundation for all peer-assisted learning. In this framework, student leaders as facilitators assist their peers in constructing their own knowledge rather than merely providing answers, which places the responsibility of learning back on the students themselves (Ning & Downing, 2010). One example of an academic assistance program that fosters peer-assisted learning is Supplemental Instruction.

Supplemental Instruction, or SI, is a free, peer-facilitated academic assistance program developed in 1973 by Dr. Deanna Martin at the University of Missouri-Kansas City with the overall goal of identifying and supporting the most challenging courses for

students. SI sessions are regularly-scheduled, informal review sessions that involve collaborative learning activities through which students can clarify course concepts and practice the types of study strategies that will help them truly master the information and skills required by the target course (Congos & Stout, 2003). The sessions are facilitated by SI leaders—students who have previously done well in the course and who attend all class lectures, take notes, work closely with faculty, and act as model students. Studies have shown that students who attend SI earn higher mean final course grades and graduate at a higher rate than those who do not attend (Hurley, Jacobs, & Gilbert, 2006).

While the majority of research on SI examines increases in participants' course grades and the positive effects the program has on students who attend sessions, few studies set out to examine the additional benefits of the program for the student leaders who are responsible for facilitating the sessions, which may result in increased preparation for future professional and academic aspirations (Lockie & Van Lanen, 2008; Malm, Bryngfors, & Morner, 2012; Skalicky & Caney, 2010; Stout & McDaniel, 2006). These perceived benefits of SI are not widely explored, which is why this qualitative case study seeks to uncover additional insight regarding how the SI leaders' experiences are transferable to their future career and academic goals.

Background

The determination of the college years as a critical period for students' growth has led institutions of higher education to extend learning outside of the classroom in an effort to enrich the overall college experience (Logue, Hutchens, & Hector, 2005). This type of experiential learning is referred to by the Association of American Colleges and Universities (AACU) (2011) as "integrative and applied learning" and has been named one of the four essential learning outcomes of higher education for the twenty-first century (p. 7). One specific area of renewed focus has been on increasing peer leadership opportunities for students.

Studies in the field of peer-led academic support programs explore student leadership as a component of integrative and applied learning (Shook & Keup, 2012; Logue, Hutchens, & Hector, 2005).

Peer-facilitated learning has deep roots in higher education as a means for promoting student learning; collective sense-making and problem-solving among peers foster a sense of belongingness for students and promotes the social and cultural constructivist nature of learning itself (Ning & Downing, 2010). The role of the student leader in any type of peer-led academic assistance program, including SI, is that of a facilitator, assisting learners in the processing, comprehension, and construction of their own knowledge, with the ultimate goal of mutually transforming both their students and themselves into independent learners (Ning & Downing, 2010).

Examination of the current literature on SI programs in regard to student leader development yielded limited results. Most widely cited is a literature review conducted by Stout and McDaniel (2006), which reveals that benefits for SI leaders, in particular, include the following: increased understanding of the course material; improved communication skills; enhanced interactions with faculty, students, and other SI leaders; enhanced personal development; and professional development. Additionally, Malm, Bryngfors, and Morner (2012) explored if serving as an SI leader has had any merit in terms of applying for future employment and if any skills learned as a result of the SI program are transferable to a professional setting post-graduation. Such research has found that students develop the following skills as a result of their SI experience: improved communication skills, the ability to organize collaborative learning groups, a deeper understanding of course content, improved self-confidence, and increased security in a leadership role, all of which are desirable by future employers.

Practical skills notwithstanding, these "'soft' social skills and cultural lessons have plenty of value. . . . Employers want people who can write, who can intuit what others are thinking, who can learn from others," all skills that have become critical "in an economy that is based more and more on social relationships" (Carlson, 2013, n. p.). Therefore, it is necessary to identify ways in which students are gaining practical and social skills during their undergraduate experience, both inside and outside of the classroom, that make them desirable to future employers and prepared for post-graduate academic programs (Peck, et al., 2015). For this reason, the purpose

of the current study is to explore how former SI leaders describe the impact of serving in leadership roles during their undergraduate study and the ways in which they have applied their experiences to their post-graduation lives.

Method

A particularistic case study methodology was chosen for this study to explore how serving as an SI leader prepares students for their post-graduation lives through the transferability of skills. The unit of analysis was a group of former SI leaders who worked in an SI program at a four-year, private university in the Mid-Atlantic.

Context

The university that serves as the context for this study is a private comprehensive, coeducational institution that offers nearly 60 undergraduate and graduate degree programs to approximately 6,000 students, located in the Mid-Atlantic region of the United States. The SI program began as a pilot in fall 2010 to fill a void in academic support services provided by the university to better support historically difficult introductory courses with a DFW rate of at least 20 percent. At the time of data collection, the SI program supported over 60 course sections across multiple disciplines, including biology, chemistry, physics, and accounting, with a staff of 30 SI leaders.

Participants

An SI leader is defined as an undergraduate student (sophomore level or higher) who has successfully completed the SI-participating course with a B grade or better, has a 3.2 or higher cumulative grade point average, has been recommended by a faculty member, sits in course lectures with current students, and facilitates collaborative review sessions outside of the classroom three times per week for all students enrolled in the targeted course. This study concentrated on the experiences of former SI leaders who previously served in the role for at least one year while completing their undergraduate study.

Since SI leaders facilitate sessions across a variety of disciplines, participants were selected through purposeful maximum variation sampling in an effort to capture the heterogeneity of the SI leader population and to ensure that participant responses satisfactorily

represented the range of SI leaders employed by the program (Patton, 2002). Twenty-two of the 31 former SI leaders who met the criteria for the study volunteered to participate. Six of the 22 participants were male, and 16 were female. The participants ranged in age from 21 to 32 at the time of the study. Four participants worked as an SI leader for one year; seven participants served in the role for two years; two participants worked two-and-a-half years; and nine participants maintained the position for three years. Participants ranged from two months to six years post-graduation (see Appendix A). To ensure the confidentiality of respondents, each participant was assigned a pseudonym of which only the researchers were privy.

Procedure

Interviews. Data collection methods chosen for the current study included both individual interviewing and graphic elicitation. A semi-structured, open-ended interview design was employed to allow the former SI leader participants to share as much information as they liked and to fully express their experiences given the nature of the open-ended questions. In addition, this design allowed for follow-up, probing questions when additional information was desired (Turner, 2010; Creswell, 2007). Participants were provided a document of informed consent prior to the start of each interview that stated the nature and purpose of the study, the confidentiality of their responses, the duration of the interview, and how their participation would benefit future student leaders. Participants were also informed that they could decline to answer any of the questions posed by the interviewer and choose to provide as little or as much detailed information as they would like in response to each question. The full protocol can be found in the appendices.

Each interview lasted approximately 30-60 minutes in duration and was audio-recorded (Creswell, 2014). The interviews began with neutral, descriptive information regarding the participant's history with the SI program and continued toward a more conversational format that allowed the former SI leader to describe and interpret his or her own experiences while serving in a student leadership role (Merriam, 2007; Rubin & Rubin, 2012). Through open-ended questioning, respondents had the opportunity to elaborate on their own unique experiences and anecdotes while working as an SI leader, which provided deeper description for data analysis.

Graphic elicitation. At the conclusion of each interview, participants were provided with a graphic elicitation instrument in the form of a participatory diagram and were asked to depict, whether through words or a visual representation, how they conceptualized their leadership role. The inclusion of graphic elicitation in the form of participatory diagramming allowed the respondents an additional opportunity to interpret their own experiences while serving as SI leaders during their undergraduate study. Graphic elicitations are particularly useful when implemented as complementary to another data collection approach, such as interviewing (Copeland & Agosto, 2012). Given the abstract nature of the experience of the SI leader, graphic elicitations assisted in further defining the participants' perceptions of their role after the conclusion of their interviews. The full protocol may be found in the appendices.

Data Analysis

This study employed single-case data analysis that was both inductive and deductive. The analysis of collected data was continuous as data collection and analysis occur simultaneously in qualitative research. During the first cycle of data analysis, the researchers used a combination of process coding and in vivo coding to summarize basic topics of passages as well as to reference particular phrases that came up repeatedly throughout the participants' responses in an effort to create a preliminary categorized inventory of the data's contents (Saldaña, 2016). Through a second cycle of data analysis, the researchers implemented pattern coding, which is "explanatory or inferential" and seeks to "identify an emergent theme" among data (Saldaña, 2016, p. 236). Each preliminary code was clustered together with similar codes in an outline form, which resulted in a list of tentative category names.

In addition, during this second phase, the researchers analyzed the participants' graphic elicitation diagrams for triangulation purposes to determine if any consistent themes were present across the multiple forms of data retrieved for the study. The researchers also extracted passages within both participants' interview responses and graphic elicitation diagrams that exemplified a particular code and recoded the data based on any new emergent themes that arose. After the data analysis concluded, four final themes remained as presented below.

Results

When asked to reflect on how their SI leader experience has impacted their lives beyond graduation, participants discussed how the skills they developed during their time as an SI leader have transferred to their current, real-world careers and post-graduate work. The skills with the highest level of transferability that emerged from the research were broken down by participants into the following categories: knowledge skills, interpersonal skills, communication skills, and collaboration skills.

Knowledge Skills

In terms of knowledge, participants expressed that sitting in lectures as an SI leader offered a great review of the material needed for medical school as well as provided a solid foundation of key content in their chosen disciplines. One participant, Felix, expressed, "It increases your knowledge of the subject that you're teaching, and for a lot of people, that's gonna help them later on in their future professions and if they choose to do post-graduate work as well." Participant Vinnie reaffirmed, "When I finished as an SI leader and I went off to graduate school, it was so much easier for me to apply that information for myself in my program just because I knew it so well from re-learning it to teach it to other people as an SI leader." Former SI leaders commonly noted that having to teach the material to other people further increased their content knowledge, which made it easier to retain and apply these concepts to their graduate coursework and future professional roles.

Additionally, participants currently enrolled in medical school commented that serving as an SI leader prepared them for the MCAT exam because it kept key content that they would need to know for their future careers, such as anatomy, fresh in their minds, as exemplified by Emily's response: "It helped me with my MCAT. It helped me even with my interviews for med school, so it definitely took the pressure off and kept the content fresh in my brain, and it's stuff that I'm gonna need to know forever." Former SI leaders who pursued teaching assistant positions (TA) in graduate school added that the different techniques they found helpful for their undergraduate students are the same techniques they are using again in their TA sessions. One participant, Victor, specifically credited his

SI leader experience as the criterion that set him apart from his peers when applying for a TA position: "I think it definitely helped me get that TA position during PT school. . . . I think it helped for them to see that I had been in a situation where I was teaching and helping other students, so that definitely played a role for that." Former SI leaders collectively expressed that their participation in the SI program fostered their passion to become lifelong learners.

Interpersonal Skills

Throughout the interview responses, participants commonly highlighted how the interpersonal skills they gained as a result of their SI leader experience transferred into increased involvement and socialization in their current academic or professional roles. Former SI leaders commented that they were more eager to meet new people and take advantage of on-campus opportunities as soon as they arrived at their current graduate or medical school due to their previous engagement in the SI program during their undergraduate years. As Kandice notes, "Through SI, becoming involved, being able to become more social, meet new people, actually helped me become more social, meet new people, and transfer everything that I learned into my medical school career, so I was able to talk one-on-one with professors and students." Participants highlighted their increased comfort in their ability to talk one-on-one with faculty, which they attributed to the close faculty relationships they developed through the SI partnership, as well as in their ability to work with individuals different from themselves, which they noted was important when planning to enter a career involved with patient care, as "it makes you comfortable working with other people."

Communication Skills

Participants pursuing medical degrees further elaborated that aspects of communication that they learned and developed as SI leaders have proven helpful in fostering patience when talking with patients and their families and also when handling difficult situations. For example, participant Simon noted, "I feel like when I talk to patients, families, and things like that, definite aspects of what I've learned as an SI leader, they're very helpful when I interview certain patients." Participant Sandy expressed, "I think that being an SI leader will definitely help me as a doctor, not only in being patient,

but also with learning how to explain things." Former SI leaders frequently paralleled their ability to break down complex concepts in easy-to-understand ways for their previous students with their ability to break down similarly complex concepts for their current and future patients, which is helpful when "you're trying to explain to them in simpler terms what's wrong with them."

Collaboration Skills

Former SI leaders also stressed the importance of learning to work as a team in the SI program. Participant Sarah noted that she "gained administrative qualities working with the supervisor, working with faculty, working with students," which has been transferable to her current position working with peers and supervisors. For medical school students, like Siena, "SI developed critical life skills and how to handle difficult situations and how to work with different people." She further commented that "going into a workforce is not just about being the best worker; you have to work as a team. In medical school, you have to work with nurses and social workers," and serving as an SI leader prepared her for that challenge.

In addition to honing valuable skill sets, former SI leaders illustrated in their graphic elicitation diagrams how their experience serving in a peer leadership role during their undergraduate years helped shape their future goals and ambitions, which they are currently pursuing in their post-graduation lives. While some participants already planned on applying to medical school prior to taking on their SI leader role, other participants chose their career path directly as a result of their experience in the SI program. For example, participant Lily never considered a career in education until she became an SI leader: "It shaped my career as a teacher, and it kind of helped me determine that I did want to go into education. I don't think I would have done that if I didn't have the opportunity to be an SI leader." Participants collectively remarked that they were grateful for the professional networking opportunities and transferability of skills that were inherent to their SI leader experiences.

Discussion

This study suggests that serving in a student leadership position fosters the development and transferability of soft skills, particularly those related to interpersonal interactions, communication skills, and collaboration, all of which are cited by U.S. News & World Report as the top soft skills every college student needs (Holmes, 2014). Further, results of this study confirm Hall's (2011) findings that students "see their work experiences as 'a viable way to learn skills that are transferable to other settings,'" such as by enhancing their "ability to work with diverse people, solve problems, communicate effectively, and develop confidence in their leadership skills" (Peck, et al., 2015, p. 3). Since an increasing number of employers seek prospective employees with soft skills that are transferable across multiple disciplines and careers, institutions of higher education should provide additional opportunities for students to develop soft skills during their college experience in preparation for graduation and their subsequent entry into the workforce.

While the traditional "hard" skills taught inside the classroom, such as the application of discipline-specific knowledge, will always be desired in both academic and career domains, soft skills developed outside of the classroom, many of which are exemplified by the student leader experience, are equally prioritized by employers and contribute to the overall mission of higher education. In the current study, former SI leaders noted the ways in which these specific skills have benefited their post-graduate academic experiences as well as their current professional roles and future career aspirations. Through their SI leader experience, participants had the unique opportunity to experience a slice of the real world while still undergraduate students themselves through facilitating review sessions, teaching complex content material, managing others, public speaking, and handling difficult situations, as well as in the involvement, socialization, and networking opportunities inherent to the student leadership role. Such leadership opportunities also provided students the ability to develop, apply, and transfer skills related to self-direction, communication, teamwork, and critical thinking (AACU, 2011). As evidenced by the results of the current study, participants' development of these skills during their undergraduate years has

already proven beneficial to their academic and professional pursuits in their post-graduation lives.

Results of this study also speak to the "return-on-investment" conversation that has infiltrated the space of higher education in recent years in that it connects the skills most desirable by employers to those gained in the outside-of-the-classroom experience of serving as an SI leader (Carlson, 2013). In doing so, however, it also accounts for other benefits associated with higher education, "like college graduates' tendencies to get more involved in civic and intellectual life" (n. p.). As a result, in addition to bridging the SI leader experience with post-graduation life, this study also bridges both the traditional and "new way of articulating the value of higher education" (Lederman, 2017, para. 15). Therefore, "it is critical, in the current climate, that institutions provide opportunities for student leaders . . . to gain experiences and competencies that will not only make them more well-rounded citizens, but better prepared to enter the workforce and be successful" (Peck, et al., 2015, p. 1).

Consequently, it is encouraged that faculty and administrators who have a vested interest in developing student leaders, as well as a heightened understanding of both the traditional mission and the "new way of articulating the value of higher education," become advocates both within their own institutions and across colleges and universities in prioritizing the importance of soft skill development through outside-of-the-classroom experiences, such as SI, during their students' undergraduate years (Lederman, 2017, para. 15). By providing opportunities, like SI positions, for students to work together on problem-solving tasks with practical significance, institutions of higher education will better prepare students "to engage with those who are different from themselves, and to apply what they learn in the classroom to real world settings" (Moore McBride & Mlyn, 2013, p. 3). Peer leadership experiences extend beyond the surface of merely developing desirable skills; these experiences can also provide students an opportunity to integrate these skills in a way that can transform college learners into real-world problem solvers (Rhodes, 2010). This study provides one example of an out-of-the-classroom peer leadership opportunity through which undergraduate students can develop the competencies and skills that will impact their future post-graduate success.

Conclusion

Results from this study attempt to fill the void in research on how SI leaders develop skills that are transferable to their future academic or career aspirations as a result of serving in a peer leadership role in higher education during their undergraduate years. By further exploring this area, program administrators will gain a better sense of how peer leadership positions may serve as a bridge to students' post-graduation lives. In addition, this study provides an alternative for program assessment; rather than just determining that a peer assistance program is, in fact, effective solely based on benefits for program participants, program effectiveness can be further assessed in regard to student success from both angles by uncovering additional program benefits for student leaders.

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Appendices
Appendix A: Participant Demographic Matrix

Participant (by pseudonym)	Age	Gender	Graduation Year	Length of SI Employment	SI Course(s) Facilitated
Gina	28	Female	2011	1 year	Western Civilization
Michael	27	Male	2012	2 years	General Chemistry 1 & 2
Lily	26	Female	2012	2 years	General Chemistry 1 & 2
Siena	25	Female	2014	3 years	General Chemistry 1 & 2
Theresa	25	Female	2014	2 years	Intro to Cell/ Molecular Bio
Kelly	25	Female	2014	3 years	Intro to Cell/ Molecular Bio
Simon	25	Male	2014	2 years	General Chemistry 1 & 2
Caroline	24	Female	2015	3 years	Discovery of Natural Sciences
William	24	Male	2015	3 years	General Chemistry 1 & 2
Kandice	25	Female	2014	2 years	Anatomy & Physiology 1 & 2
Shawn	25	Male	2014	3 years	Anatomy & Physiology 1 & 2, Physics for Life Sciences 1 & 2
Krista	24	Female	2015	2.5 years	Discovery of Natural Sciences,

Participant (by pseudonym)	Age	Gender	Graduation Year	Length of SI	SI Course(s) Facilitated
Allison	23	Female	2015	1 year	Physiology with Anatomy 1 & 2
Emily	22	Female	2017	3 years	Physiology with Anatomy 1 & 2
Felix	22	Male	2017	3 years	Intro to Cell/ Molecular Bio
Sarah	21	Female	January 2017	3 years	Organic Chemistry 1 & 2, General Chemistry 1 & 2, Physiology with Anatomy 1 & 2
Kristin	22	Female	January 2017	2.5 years	Intro to Biodiversity/ Evolution, General Chemistry 1 & 2
Sandy	23	Female	January 2017	1 year	Intro to Cell/ Molecular Bio
Victor	32	Male	2013	1 year	Physiology with Anatomy 1 & 2
Francesca	25	Female	2013	2 years	Financial Accounting
Shae	24	Female	2015	3 years	Discovery of Natural Sciences, Physics for Life Sciences 1 & 2

Appendix B: Interview Protocol

1. When did you graduate from this institution with your undergraduate degree?
2. How would you describe your undergraduate student experience before becoming an SI leader?
3. How would you describe your relationships with faculty and peers before becoming an SI leader?
4. How would you describe your involvement on campus before becoming an SI leader?
5. How long did you serve as an SI leader and for which course(s) did you facilitate SI sessions at this institution?
6. Why did you apply to be an SI leader at this institution?
7. In your opinion, what is the role of an SI leader within the context of this particular institution's SI program?
8. How did serving as an SI leader within this institution's SI program affect your own personal academic achievements (if at all)? Please provide specific examples.
9. How did serving as an SI leader within this institution's SI program influence your involvement on campus while completing your undergraduate study (if at all)? Please provide specific examples.
10. In what ways did serving as an SI leader within this institution's SI program develop your leadership skills (if at all)? Please provide specific examples.
11. How did serving as an SI leader within this institution's SI program foster your relationships with faculty and peers (if at all)? Please provide specific examples.
12. How (if at all) have you changed since your undergraduate years as a result of serving as an SI leader within this institution's SI program? Please provide specific examples.
13. What specific experiences in your role as SI leader within this institution's SI program may have contributed to this change?
14. Would you encourage other students to apply to be an SI leader at this institution? Why? Or why not?

Appendix C: Graphic Elicitation Protocol

Below is a figure of an SI leader. Please represent, whether through visual drawings or written expressions, the responsibilities and relationships of the SI leader and how they are connected to the SI leader's experience, as well as any other aspects of the position that you find relevant.