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The Impact of a Supplemental Instruction Program on Diverse Peer Leaders at a Two-Year Institution

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Abstract

Supplemental Instruction (SI) is a peer-led academic support program in which SI Leaders help students develop study habits and note-taking strategies as well as facilitate test preparation. While the effects of SI on students receiving the instruction have been thoroughly investigated, there have been far fewer studies that have assessed the impact of SI on its Leaders. Furthermore, research on Leaders has yet to adequately consider community colleges or Hispanic-Serving Institutions (HSIs), or to employ qualitative methodologies. Thus, this paper details an SI program developed at a two-year HSI and the impact of the SI Leaders' experience via qualitative data analysis of structured, open-ended interviews. The majority of Leaders described shifts in long-term goals or changes in learning styles from individual learning and a desire to "look smart" to one that embraced asking for help, peer learning, and belonging. The data indicate a shift in academic mindset among Leaders, particularly among minority male and female adult learners and Latino males.

Introduction

Supplemental Instruction (SI) is a peer-led academic support program available, on a voluntary basis, to students enrolled in a designated SI course. SI sessions are facilitated by SI Leaders ("Leaders") who have previously demonstrated an understanding of the material in the course that they are now leading. Leaders are not responsible for tutoring or re-teaching the material covered in class; instead, Leaders help students develop study habits and note-taking strategies as well as facilitate test preparation (Hurley, Jacobs, & Gilbert, 2006).

Since the creation of the first SI program at the University of Missouri–Kansas City in 1973, SI has been implemented and its impact evaluated in hundreds of institutions worldwide (Martin, 2008). Target courses for SI have traditionally been "difficult" classes (Hurley, et al., 2006) such as gateway courses, which are defined as courses with D/F/W/I rates of 30% or higher. Furthermore, there has been extensive examination of the effects of SI on the students receiving the instruction at four-year and graduate institutions in courses from accounting to zoology. Far fewer studies, however, have examined the impact of SI at community colleges (e.g., Maxwell, 1998; Phelps & Evans, 2006; Tinto, 2003), designated Hispanic-Serving Institutions (e.g., Liou-Mark, Ghosh-Dastidar, Samaroo, & Villatoro, 2018; Meling, Kupczynski, Mundy, & Green, 2012; Meling, Mundy, Kupczynski, & Green, 2013; Rabitoy, Hoffman, & Person, 2015; Zaritsky & Toce, 2006), or among specific minority groups, such as African-Americans, in majority-white institutions (Rafi & Karagiannis, 2013).

Similarly, relative to the plethora of studies on the effects of SI on student participants, only a modest number of studies has assessed the impact of SI

on SI Leaders. Ashwin (2003) reported that serving as an SI Leader shifted perceptions of what was required for effective teaching and learning from expectations of the self to interactions with others. In a study by Congos and Stout (2003), a survey of former SI Leaders from three US institutions indicated that the benefits included developing skills related to interpersonal relations, learning, and leadership skills. A study by Stout and McDaniel (2006) demonstrated benefits to Leaders that included mastery of course content, improved communication skills, interpersonal relationship-building skills, and mentorship skills. Similarly, Zaritsky and Toce's (2006) survey of Leaders at an urban community college demonstrated benefits that included better understanding of course material, improved self-confidence, and enhanced communication skills. Malm, Bryngfors, and Mörner (2012) found that the benefits to Leaders in engineering at a Swedish university included improved understanding of course subject matter, enhanced interpersonal and leadership skills, and increased self-confidence.

Although these studies provide a baseline for examining the effects of SI on SI Leaders, all but one focused on students enrolled at four-year and graduate institutions whose needs and academic preparedness are often different than those enrolled at community colleges. Stout and McDaniel (2006) noted that there is still a "dearth of research on the skills Leaders feel they gain" and Malm, Bryngfors, and Fredriksson (2018) highlighted the need for "more studies from different settings and environments…to be able to generalise the findings from previous studies."

It is noteworthy that studies employing qualitative research methodologies to study minority students, particularly within a two-year setting, are rare. Furthermore, the use of qualitative studies to examine the SI Leader experience represents a much smaller share of the literature. Lockie and Van Lanen (2008) coded the written responses to two open-ended questions of SI Leaders from nursing and science courses and found that serving as an SI Leader resulted in an improved understanding of learning styles and course material as well as increased self-confidence and belief in the value of collaborative learning. Couchman (2009) analyzed autobiographical narratives of 11 SI Leaders from a variety of business-related classes and highlighted themes related to subject-matter knowledge, confidence, communication, friendships, and general satisfaction and well-being.

Building upon the existing body of scholarship on SI and its effects on SI Leaders, this study will draw upon academic mindset with Steele and Aronson's seminal work on stereotype threat and Dweck's research on fixed and growth mindsets. Steele and Aronson (1995) coined the term "stereotype threat" to describe "being at risk of confirming, as a self-characteristic, a negative stereotype about one's group," which can include race, ethnicity, gender, age, or other minority status factors, which can lead to "academic underperformance" (Steele, Spencer, & Aronson, 2002). The extent to which one's intelligence is malleable is debated, but "what a student thinks about intelligence can have a powerful effect on his or her achievement" (Aronson, Fried, & Good, 2001). The effects of this perception can include:

1. choice of college, with qualified low-income minority youth selecting two-year institutions instead of four-year institutions, known as

    "college undermatch" (Smith, Pender, & Howell, 2013; Bowen, Chingos, & McPherson, 2009);
2. selecting one's major (Davies, Spencer, Quinn, & Gerhardstein, 2002; LeFevre, Kulak, & Heymans, 1992);
3. selecting one's career path (Lubinski & Benbow, 2006), particularly among females (Steele, et al., 2002; Davies, et al., 2002; Davies, Spencer, & Steele, 2005; Gupta & Bhawe 2007; Gaucher, Friesen, & Kay, 2011) but also for minority men (Koenig & Eagly 2005; Allen & Smith 2011); and
4. disengagement within one's chosen field (Holleran, Whitehead, Schmader, & Mehl, 2011).

Thoman, Smith, Brown, Chase, and Lee (2013) proposed the Motivational Experience Model of Stereotype Threat (ST) as a motivational construct to understand "whether and how the stigmatized student regulates his or her feelings of interest and belongingness in the face of ST."

The effects of stereotype threat were mitigated among women who worked collaboratively to solve mathematics problems (Aramovich, 2014). Same-sex classrooms, however, had a paradoxical effect; while females performed better in a same-sex classroom, the messaging might have contributed to a fixed mindset that success in mathematics is limited by gendered membership (Dweck, 2006, 2008; Good, Aronson, & Harder, 2008). Pennington, Kaye, Qureshi, and Heim (2018) found that when prior attainment is a control, same-sex classrooms do not benefit in the K-12 world.

Dweck's research on fixed and growth mindsets showed students with growth mindset tended to focus on learning goals and embrace challenging problems to learn from them rather than easy problems to "look smart." Dweck and colleagues focused on tenacity through academic mindsets and goals, self-regulation, and self-control (Dweck, Walton, & Cohen, 2014). Pennington and Heim (2016) found that females in same-sex testing environments reported a weaker growth mindset although their performance increased. The authors suggested the alternative of teaching students in co-educational classrooms about the pervasive effects of stereotype threat and the direct influence it can exert on performance (Johns, Schmader, & Martens, 2005) to counteract the fixed mindset of stereotypes (Blackwell, Trzesniewski, & Dweck, 2007; Dweck, 2006, 2008) and to allow students to adopt a growth mindset and increase women's participation and performance in mathematics domains.

The primary goal of this paper is to expand the findings about the SI Leaders' experience to include Leaders at a two-year HSI. In sum, the present study details Hostos Community College's (HCC's) SI Training Program and SI Team support structure, examines the change in academic mindsets of SI Leaders using qualitative methods, and considers what best practices within the HCC SI Program are contributing to the development observed in our Leaders.

Context for Study

To be classified as an HSI by the United States Department of Education, the institution 1) must be eligible, which is determined through an application process, and 2) 25% or more of the undergraduate full-time-equivalent students must be Hispanic (US Dept. of Ed., 2018). The Latino population at HCC was 58.9% in Spring 2016 (Hostos Office of Institutional Research, 2018). Notably, HCC was founded as an institution to serve a predominantly Puerto Rican

community in the South Bronx in 1978, long before the term HSI was coined in 1986 and before the designation became law under the Higher Education Act in 1992 (*Excelencia* in Education, 2018). In the US, HSIs constitute 15% of all colleges and universities, but they educate 65% of enrolled Latino students in higher education (*Excelencia* in Education, 2018).

One challenge for community college students is entering college underprepared and often without the basic academic skills needed to succeed (Hoachlander, Sikora, & Horn, 2003). Nationwide, 70% of students at two-year HSIs are referred to at least one developmental or remedial course (Bailey, Jeong, & Cho, 2010). At HCC, 83% of entering students require one or more developmental courses, and of those, 35% need two or three areas of remediation (Office of the President, Hostos Community College, 2017). In addition to being an HSI whose students require high levels of remediation, 59% of HCC students live in households with income under $20,000 per year, 26% financially support children, 47% have a paying job, 38% are 25 and older, 66% are women, and 58% are first-generation students (2016 Student Experience Survey).

To address the large number of students in remediation, SI was implemented at HCC in 2012 in both credit-bearing and developmental math courses. In a comparison study between SI and non-SI courses in mathematics at HCC, it was found that while there was no difference in course retention, final exam performance increased from 52% to 59% and from 44% to 50%, respectively, for all students enrolled (Dias, Cunningham, & Porte, 2015). Prompted by these gains, and supported by federal and other grants, SI expanded to 28 gateway courses in Fall 2015, including those in the Behavioral and Social Sciences and the Natural Sciences departments. Since then, with the continued support of federal and institutional funding as well as other grants, SI at HCC has grown to include over 100 sections annually with approximately 2,500 students; of these, 71% of students enrolled in SI sections have attended SI Sessions.

SI at Hostos Community College

The rapid growth of SI across departments at HCC necessitated leveraging and coordinating resources through an organizational structure, illustrated in Figure 1, which recognized the interdependence of the stakeholders and accounted for the various roles needed to ensure meaningful collaboration. The solid lines in the figure indicate paths of communication between the members of the SI team, while the dashed lines highlight communication with the SI Leaders. The SI Director, SI Coordinator, and SI Program Mentors provided oversight for program administration, training, supervision, and mentoring of Leaders while also communicating with all stakeholders. Departmental Faculty Liaisons, selected because of their leadership roles in their respective departments, were provided a stipend to assist with course selection, updates for SI Faculty, and SI Leader recruitment. SI Faculty recommended students to serve as SI Leaders if they earned a "B" or higher and demonstrated good attendance and other qualities necessary for a leadership role. They also mentored and helped with SI Leader integration in the classroom. SI Leader Mentors were SI Leaders with more than one semester of experience who also helped train, observe, and support novice SI Leaders.
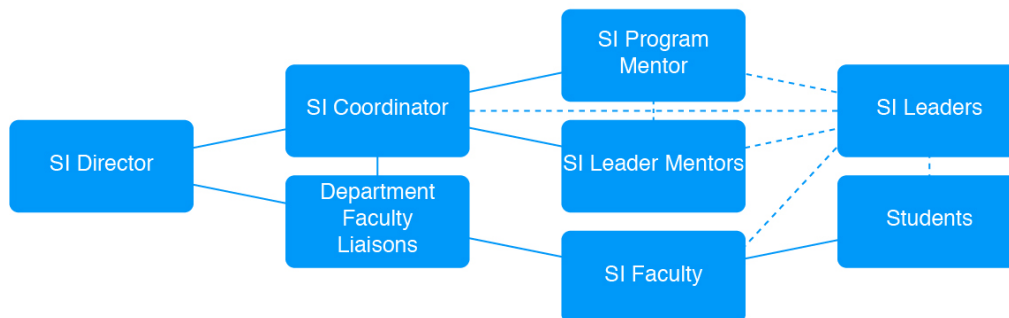
Figure 1. HCC SI Program Organizational Structure.

Upon faculty recommendation, potential Leaders completed an application. SI Staff reviewed the applications and set up interviews for those who met the qualifications. During the interviews, applicants were provided with a comprehensive overview of the SI Leader position, program guidelines, the hourly rate of $13.50, and the number of hours Leaders needed to commit to the program, which ranged from five to 10 hours per week. Students who were offered a position as an SI Leader were then processed as employees and given information about the mandatory two-day training for all SI Leaders.

Students were recruited because they earned a "B" or higher in a particular course; however, they were not expected to have the required facilitation and leadership skills. To develop these skills as SI Leaders, they participated in a mandatory two-day training before the start of each semester. The training sessions incorporated an "integrative and applied learning" approach, which is one of the four essential outcomes for colleges in the 21st century (Association of American Colleges and Universities, 2011).

Since August 2015, HCC has held biannual two-day SI Leader Trainings (SILT) wherein new and returning SI Leaders learned about SI, the expectations of SI Leaders, and practical elements (e.g., first day introductions, how to schedule SI Sessions, and how to plan and conduct SI Sessions, including strategies such as redirecting questions), which became part of their repertoire. Leaders participate in role playing, a crucial part of the training, with scenarios SI Leaders might encounter during SI Sessions. Returning SI Leaders assist during SILT by guiding and answering questions and sharing their experiences as SI Leaders.

Upon completion of SILT, SI Leaders are assigned an SI Mentor. Initially, SI Mentors were SI Staff (including the SI Director, SI Coordinator, SI Program Mentor, and one SI Faculty Member). However, by the second semester of SI at HCC, several SI Leaders became SI Leader Mentors, expanding the mentoring support for novice SI Leaders to offer a student-centered leadership model supported by SI Staff. Mentorship of SI Leaders has been shown to improve SI Leaders' confidence and increase student participation during SI Sessions (Deaton & Deaton, 2012). The SI Mentors 1) observed SI Sessions, 2) provided constructive written and verbal feedback in a structured post-observation conference, and 3) responded to questions that arose. Thus, SI Leaders are trained to recognize strengths and areas for improvement and to reflect on their own learning experiences with the guidance of SI Mentors.

In addition to the SI Mentor observations and support, peer-to-peer observations were scheduled twice per semester. SI Leaders were instructed in how to provide positive feedback by highlighting SI techniques and strategies employed in the SI Session, and they contributed constructive criticism and suggestions for improvement. This process also served as a mechanism to identify future SI Mentors.

Weekly SI Group Meetings provided another way to continuously support SI Leaders and SI Leader Mentors. Using team-building exercises, Leaders shared, modeled, and demonstrated practices used during their SI Sessions. Their participation and contributions promoted a collaborative learning process that allowed SI Leaders to listen and learn from each other. These activities also encouraged Leaders to ask questions and to raise issues related to SI Sessions, and they strengthened Leaders' ability to become more reflective of their own learning process and of the challenges and issues that impact student success.

The Study

This study examined the impact of SI on the academic mindset of a cohort of SI Leaders at HCC. A series of structured, open-ended interviews were conducted with the SI Leaders, and their responses were coded to understand the SI Leaders' perceptions of the effects of the SI experience in their own words.

This qualitative research study applied thematic analysis to the SI Leaders' narratives. Open-ended questions were selected without any pre-existing hypotheses. ATLAS/Ti 7.0, a qualitative data analysis research program, was then used to organize and summarize the responses into category themes. A line-by-line approach was taken to examine the narratives within the preliminary codes. Portions of the stories that emerged are included in the Results and Discussion sections to illuminate the dominant themes and to suggest areas for further research.

Thirteen SI Leaders were interviewed for this study. Of the 13 interviewees,

- six were male (two in sociology, one in psychology, and three in chemistry) and seven were female (three in sociology, two in psychology, one in anatomy and physiology, and one in English as a second language),
- nine identified at Latino, two as Asian, one as Black, and one as Caucasian,
- 11 were enrolled as full-time students,
- four were non-traditional adult learners over the age of 25,
- nine spoke a language other than English at home,
- two of the SI-designated sections were taught in Spanish,
- 11 were part of the expansion cohort, and
- two were SI Leader Mentors.

Participation in the interviews was optional; however, those who participated were compensated by including the interview time as part of their work week as an SI Leader. These interviews were conducted at a time when 11 of the SI Leaders had served nearly two full semesters in that role. Interviews occurred during a single session and lasted from 15 to 60 minutes, depending on the

length of the Leader's responses. The interviewer, an ethnographer, established rapport with SI Leaders while working with them weekly for months as a member of the SI Team. Student responses were transcribed during the interviews by the interviewer as per the proposed and approved Internal Review Board protocol approved by the City University of New York.

Interview questions included items related to the number of semesters the SI Leader had been at HCC, their major, and their expected graduation date. Additionally, the following open-ended questions were asked:

1. How did you feel when you were asked to be an SI Leader?
2. What have you found most rewarding about being an SI Leader?
3. What have you found to be most challenging about being an SI Leader?
4. Do you plan to continue as an SI Leader? Why or why not?

Results

An analysis of the open-ended interviews revealed how serving as an SI Leader had a positive impact on the Leaders' development. While some students shared substantial personal information in the style of a life history interview and others responded to the questions asked without further elaboration, it was observed that the SI Leadership experience led to a positive academic mindset.

Four of the 13 SI Leaders described a shift in long-term goals, and each of the four also described how being an SI Leader influenced the shift. Three of the four who reported transformative shifts in academic goals and/or career trajectories were non-traditional students ranging in age from mid-30s to early 70s. In all cases, the shift included additional schooling to achieve more advanced degrees and/or a widening of their major. Additionally, three of the 13 discussed a shift from the desire to "look smart" to one that embraced community, asking for help, and working with others. Thus, seven out of 13 Leaders' open-ended responses indicated a shift in mindset.

One sociology SI Leader, an immigrant from South America, said, "I changed my major [from business] because I wanted to do some special program they [a 4-year CUNY College] have there that is a combination of different subjects including business, sociology, and psychology." This SI Leader began taking classes at HCC in his late 60s after extensive real-world experience in business. He decided that he wanted to integrate behavioral sciences into his business major after serving as an SI Leader for Introduction to Sociology. "How can managers get in contact with different types of people based on religion and race?" he queried. To date, this SI Leader has continued to serve as an SI Leader for an additional six semesters after graduating from HCC while pursuing a bachelor's degree at a four-year institution. This SI Leader developed a close relationship with the sociology professor whose course he took and became a Leader in; this faculty member also served on the SI Team as the faculty liaison.

Another SI Leader, a 40-something Latina from the Bronx, described her experience as an SI Leader in the following way:

> It was just another job, but when I actually started getting students in the sessions and seeing their reactions afterwards, that was when it hit home. That was when all those little girl dreams of being a teacher came

> rushing in and reminded me what I wanted from the very beginning….It's funny how it just kind of sneaks up on you. You go after one thing [accounting major] and it turns out that's not what you really wanted….Being a Peer Leader changed everything. I was considering majoring in accounting.

She began the interview by saying she was a teen mom and found it very challenging to attend college after high school and that she only completed one semester. Coming back to college as a mother and grandmother a quarter of a century later, she described her shift in major and said,

> I am majoring in sociology for my bachelor's. I made a swift turnaround. Well, at first it was all about my company and trying to work my way up to a place where I can run it successfully, but then it became more. I can do more. Now it's not about money. It's about leaving something behind. Everything [big sigh and pause]. Something for my kids to be proud of, something for my parents to brag about, and something for my grandchildren to aspire to.

This student's notion of success and legacy transformed as a result of her experience as an SI Leader. She began the interview by discussing her childhood growing up in a Bronx housing project and later said, "I was raised in a village." She also discussed having her first child at 17 and that she "came out of high school as a kid [with a kid]" saying, "It wasn't easy back then to go to college. Financial aid was something you had to figure out on your own; you didn't have someone to explain it to you." After high school, she said that she "did like half a semester."

She came to HCC more than two decades later to obtain a two-year degree in business to help her with a small business that she owned, which she later said was "about money." This represents a fixed mindset common in many first-generation students, particularly those coming from minority backgrounds with the goal of earning the quickest college degree that will ensure the most financial stability. This may be linked to stereotype threat, especially considering the student's gender, ethnicity, age, socioeconomic status, and status as an adolescent mother and as a 40-something grandmother, with major and career choice affected by stereotype threat and a fixed mindset. This student bonded early with her SI Mentor, initially a member of the SI Team, as well as with other members of the SI Team. Additionally, serving as an SI Leader brought this adult learner back to a "dream deferred"—her childhood dream of becoming a teacher. Her reflection on what she seeks at this stage in life and on what she can accomplish is a dream deferred that Langston Hughes in his 1951 poem "Harlem" posits can "crust and sugar over like a syrupy sweet." Her life experience of growing up in the Bronx housing projects (not too far from Hughes' Harlem), being a teen mom, and later losing one of her children to cancer shaped her experience as an SI Leader and brought her back to a dream that sweetened over time—one that she associated with a legacy and with making her family, both living and deceased, proud.

A 30-something Filipina immigrant who obtained an undergraduate degree in zoology and a graduate degree in dentistry was a dentist in the Philippines before she became an SI Leader at HCC. An allied health major in the dental hygiene program, she intended to go directly into the workforce. Similar to the

previous interviewee, the goal was to ensure quick and gainful employment, which is indicative of a fixed mindset. This student participated in several special programs including being an undergraduate student research assistant before becoming an SI Leader. During the interview, she described a shift in her long-term goals and a desire to continue schooling in public health. Of the shift, she said, "This is actually something I figured out because of this [SI]. I am here. I got this experience. I have the training. I don't want it to end when I graduate; I want to continue on." This second transformation of major and career in a female minority student suggests that SI facilitated the change from a fixed mindset to a growth mindset and mitigated stereotype effects related to gender, racial and ethnic minority, age, and immigrant status. She served as an SI Leader for four semesters and directly attributes the change in her long-term goals to her experiences as an SI Leader and as an undergraduate research assistant.

This student graduated with honors, worked as a dental hygienist following graduation, and is enrolled at a four-year CUNY college to obtain her bachelor's degree in human biology to combine her love of both natural and behavioral sciences. Informal follow-up conversations confirmed the change in long-term goals; she is back in school and continues to work part-time as a dental hygienist. Her husband, who is a chef at a Manhattan restaurant, is considering going to college because she has inspired him, according to the former Leader; perhaps there is a ripple effect of growth mindset on family members of SI Leaders. She was referred to SI by a member of the SI Team, and although she did not serve as a Leader for that faculty member's sociology classes, they maintained frequent and regular contact, and she worked with the professor as an undergraduate research assistant.

A fourth SI Leader, a 30-something Black female, came to HCC after a decade-long successful career in the business world to pursue her dream "to work with people and help people heal." She described being deterred at a previous institution when she struggled with biology. She reported majoring in anthropology and economics instead of natural sciences and then worked in sales management after graduation. She returned to school after a decade or so in business to take her prerequisites for a degree in physical therapy. When her HCC anatomy and physiology professor asked her to be an SI Leader for the course, she said she knew how difficult the course could be for students and explained, "I wanted to help students do well and also cement the knowledge for myself, but I didn't anticipate the rush of energy when I see something click for students."

In her case, the decision to switch from business to physical therapy occurred before she came to HCC; however, in spite of any struggles she encountered while taking anatomy and physiology, a notoriously difficult natural sciences course, she persevered and went on to help others get through the class and deepen their knowledge of the course material. She achieved her goal of completing her prerequisites and entering a four-year college's physical therapy program after serving as an SI Leader for five semesters. For this student who served as an SI Leader—and for a class that had kept her out of her chosen field for a decade, a class required for a field in which Black women are underrepresented—this experience potentially counteracted the experience of failure (a "C" in biology at a different institution) that led her to switch majors and to "think the medical field wasn't for me." This student maintained

close relationships with members of the SI Team throughout her tenure as a Leader.

A Latino psychology Leader said, "It's okay to get help from other people. You don't have to do everything yourself, and SI shows that you will do better with other people in your classes and in life." Similarly, a white, male chemistry Leader said, "Prior to SI, I worked alone. I was always solitary when I did my work…so this has really helped me connect to other people." A third Latino sociology Leader said, "Usually people think of a community college as a transition. Coming back here and becoming a Peer Leader has helped me develop a sense of community." He went on to say that "it's a matter of luck" to make an impression at his large four-year college, which could be his way of describing his experience transferring to an institution in which Hispanic males make up only 14% of the study body (compared to 59% at HCC) and a sense of not being seen or heard. For these three traditionally-aged male Leaders in social and natural sciences, the shift from fixed to growth mindset is related to a willingness to work with others, be part of a community, and to ask for help. Part of Dweck's conceptualization of a fixed mindset is to "look smart," and males, particularly Latino males who experience significantly more barriers to success in college, might be less likely to look to others (such as peers, faculty, and staff) for support.

Discussion

SI Leader responses shed light on the impact of the SI experience. Moreover, these statements demonstrate how the SI experience has a positive effect on mindset as evidenced by broad changes in their long-term academic and/or professional goals. The respondents directly attributed the change to serving as an SI Leader. Of the four Leaders who reported a transformative shift in terms of career and/or education, all four were adult learners, and three of the four were male. All four are racial or ethnic minorities. Of the three Leaders who reported shifts in mindset related to working with others and asking for help, all three were male, two of the three were Latino, and one was an adult learner. These intersectional identities make these narratives evidencing growth mindset all the more fascinating. Each career shift resulted in additional education for each student. For each Leader that indicated a shift away from "looking smart" and toward working with others and asking for help, the SI Leader experience potentially transformed the way they approach education. With all three in STEM fields, adopting a growth mindset could have substantial implications for their success in advanced courses and in the field.

These stories offer a glimpse into stereotype threat and the experiences of minority students, and they provide preliminary evidence to establish SI Leadership as a mechanism to increase growth mindset, particularly among the diverse student body at HCC. Advanced schooling generally leads to greater income, so SI could be linked to increased earning power. Furthermore, since these results are found to be more common in adult learners, this research provides fodder for additional studies on the effects of SI Leadership in this population.

Peer Leaders were trained and regularly reminded of thinking processes that taught them to be self-aware. As non-native English speakers, females, immigrants, and/or adult learners, our findings suggest that the way these

students thought about intelligence changed, thereby reducing the effects of stereotype threat and also moving them away from fixed mindsets.

What also came through our analysis was the importance of trust between SI Leaders and the SI Team as well as the centrality of the relationships within the SI Program. More than the direct experiences with students, SI Leaders gravitated toward the unchanging SI Team and continued to serve as SI Leaders for multiple semesters, even after Leaders graduated and transferred to four-year institutions. The role of the mentors, specifically—both SI Team members and SI Leaders-turned-SI Mentors—is an indispensable component of the SI Program at HCC. While not the initial focus of this study, the candor in the interviews, the three-year relationship between many of the SI Leaders and the SI Team, and the close ties to HCC call for further inquiry. The members of the SI Team are members of minority groups (both gender and ethnic), which might advance the previous analysis of stereotype threat, mentoring, and academic mindset. These findings are highly transferable to other institutions irrespective of institution type, student demographics, and geographic location, but might be particularly pertinent for minority-serving institutions.

The experiences SI Leaders shared during the interviews suggest that the type of purposeful work that they devote to SI combined with consistent formal feedback from the SI Mentors, informal weekly feedback from students in SI Sessions, and institutional support provided by the SI Team through ongoing training may create the foundation for the stated developmental shift. Students who work with purpose "feel that they are learning so that they can become the kind of person they would like to be and contribute something of value to the world. They are not simply memorizing material (that they will soon forget) to pass a test" (Dweck et al., 2014). Furthermore, a takeaway from the narratives could be to provide explicit attention to growth mindsets and fixed mindsets in SI Training as research has shown that teaching students about academic mindsets can increase performance (Blackwell, et al., 2007; Dweck, 2007; Good, Aronson, & Inzlicht, 2003).

Conclusion

The use of open-ended interviews is an underutilized approach to assessing the SI experience on Leaders. Through narratives, SI Leaders revealed how serving in this role positively impacted their academic mindset. The collected stories confirmed other research that demonstrated that peer leaders see their role as SI Leader as significant in their own development (Cuseo, 2010; Frade & Tiroyabone, 2017; Newton & Ender, 2010; Shook & Keup, 2012). This research adds a layer to these studies by exploring how predominantly minority students at an HSI see this growth within the community college context. It also demonstrates the extent to which establishing an SI Program with explicit attention to supportive and ongoing relationships between SI Leaders and the SI Team as well as creating space for growth from SI Leader to SI Peer Mentor is seminal.

This study lends itself to future research on the impact of SI leadership on 1) reducing or even negating stereotype threat, especially in HSIs, 2) engaging adult learners in leadership roles, 3) explicit training on growth mindsets to SI Leaders, 4) evaluating the effectiveness of the SI training program at HCC, and 5) empirically evaluating growth among returning SI Leaders over time. The intensive training and continuous professional development for SI Leaders

contributes not only to the improvement in academic and growth mindset documented herein but also to the long-term retention of our SI Leaders. (Eleven of the 13 SI Leaders continued to serve for at least two semesters; three served up to six semesters, including after graduation; and seven continued to be part of the SI Program.) Our research also highlighted the importance of belonging, an additional non-cognitive factor that contributes to academic mindset. Several students discussed "coming back" to HCC for the community. Additional research on belonging will provide further insight into non-cognitive factors that impact academic mindset with particular attention to trust and relationships among SI Leaders and the SI Team.

In referring to the American Association of Colleges and Universities' High Impact Practices, Keup (2012) argues, "The defining characteristics of high-impact practices are also hallmarks of peer leadership: creating an investment of time and energy, including interaction with peers about substantive matters; reflection; high expectations; and integrative, applied, and experiential learning." The SI Leaders' long-term involvement with SI may also provide insight into the positive developmental influences of being an SI Leader or an SI Peer Mentor. Both roles develop the skills and competencies that contribute to their future professional and personal goals. These perceived benefits are confirmed by Astin (1999), who claims, "The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in that program." Student involvement, modeled by the SI Team, is central to SI at HCC, and we believe that it serves as a model for other SI Programs.

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