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**BRIDGING THE GAP: THE ROLE OF A PEER-LED WORKSHOP IN STATICS  
IN THE DEVELOPMENT OF FIRST-GENERATION COLLEGE STUDENTS**

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The U.S. Department of Education reported in 2010 that “50 percent of the college population is made up of first-generation students, or those whose parents did not receive education beyond a high school diploma” (Lynch, 2013). Due to the steadily increasing number of first-generation college students enrolling, higher education institutions across the United States are searching for ways to bridge some of the lack of connection between these students and their unfamiliar learning environment. Studies like *How American Universities’ Focus on Independence Undermines the Academic Performance of First-Generation College Students* (Stephens, Fryberg, Markus, and Johnson, 2012), and *Stereotypes and Their Effects on First-Generation College Students* (Ward, 2013) demonstrate some of the concerns about this large group. Many first-generation students attend community college rather than a four-year college. “In the NELS: 88 cohort of 1992 high school graduates, 56 percent of first-generation students who did enroll in postsecondary education within two years attended a two-year institution or less compared to 23 percent of students whose parents had college degrees” (Berkner & Chavez, 1997, p. 26, as cited by Engle, 2007). Peer-Led Team Learning can be used as a bridge program between first-generation students and their college institutions, mainly because it puts them in an environment where group learning is encouraged, but without isolating them from the general college population. We as Peer Leaders are on the front lines of helping these students on their path to higher education.

When I was considering returning to school full-time I created a list of pros and cons to guide me in my decision. The first thing I jotted down in the pros column was “create a better future for my family.” Growing up in a low-income Caribbean family the idea of college was seen more as a privilege than a necessity. My parents did understand the importance of pursuing higher education, but after high school the obstacles that presented themselves on the path to a college degree seemed too daunting for them and me to navigate. These are issues that first-generation college students face upon leaving high school.

Financial, academic, and emotional ups and downs are just some of the hurdles that both a continuing-generation college student and a first-generation college student face on a daily basis. Having a solid support system is paramount for the everyday success of a college student. Having family members who can relate to the situation, to let one know what to expect, along with showing how to avoid the pitfalls of the college experience, can go a long way in the development of a student. But what if one does not have that support system, not because parents or family members don’t want to help but because they do not have the tools to do so?

At the beginning of the Spring 2014 semester at New York City College of Technology (“City Tech”), City University of New York (CUNY), my knowledge of first-generation students was fairly general. But my experience this semester in leading a workshop group has given me a better idea of how large the first generation student demographics, and has shown me how we Peer Leaders are on the front lines of helping these students on their path to higher education. One incident that brought my attention to this issue happened in Week Four of my workshop, when one of the students in the group, who did not understand the topic we were working on, in frustration yelled out how he hated college and how the only reason he was here in the first place is because his father forced him to be. The next week I pulled him aside to get a better idea of the source of his frustration. He explained how his father was currently working for a construction company as a foreman and is doing well financially and had not graduated from college. He then said he doesn't see the reason why he couldn't follow in his father's footsteps and pursue a lucrative career in the construction field and avoid college altogether. I then asked him if he was the only one in his family who is going to college, and he quickly answered, “Yes, I'm the oldest of my brothers and my mother didn't graduate college either, so I'm pretty much doing this on my own.”

After the conversation I became curious about how many students share the same background as me and this student. At the start of each workshop I like to spend at least five minutes with the group chatting about random issues, just to get their minds off work for a moment between the lecture and the workshop. That week I went around the group asking if any of them were first-generation college students. Out of the eight students in my group seven of them raised their hand. Shocked by the overwhelming response, I started to find out more about first-generation college students, and what programs colleges have in place to help and guide these students on the path to higher education.

Lynch (2013) posits that the current spike in first-generation students going to college does not necessarily translate into academic success or financial and social success after they receive their diploma: “First-generation students often come from low-income, minority or immigrant families and do not have the same set of life skills and personal capital of middle-to-high income bracket students.” He calls for more mandatory programs that give first-generation students increased access to other students and faculty members to alleviate some of the problems they will come across in their college careers, such as an entry-level course, “Workforce 101,” taught at California State University Dominguez Hills. “A better approach is proactive mentorship and advising that mandates interaction between students and professors or other staff members that can provide real-world guidance” (Lynch, 2013).

“First-generation students who attended any postsecondary institution (two- or four-year) were twice as likely to leave without earning a degree compared to students whose parents had college degrees, 43 to 20 percent respectively. Even among students who expected to earn bachelor's degrees and attended four-year institutions, first-generation students were much more likely to leave (29 versus 13 percent) and much less likely to earn a degree (47 versus 78 percent) than students whose parents had a college degree. Overall, only 24 percent of first-generation students who graduated from high school in 1992 and enrolled in college earned a bachelor's degree by the year 2000 compared to 68 percent of students whose parents went to college” (Chen, 2005, pp. 26-27 as cited by Engle, 2007).

I began to notice a theme calling for more programs that allow first-generation students to work together, and suggesting how such programs will play a major role in their success in college. This idea

was cemented for me in the work of Stephens et al., (2012). Using cultural mismatch theory, the study noted that the current structure of universities, both private and public, are set up with the cultural norm of independence, (e.g., self-reliance, self-determination), a system that best fits the norms of a continuing-generation college student who is most likely raised in an environment where independent thought is encouraged, as opposed to first-generation college students where interdependent norms are considered a necessity for their cultural survival.

“Moreover, during times of adversity (e.g., losing a job), working-class individuals rarely have an economic ‘safety net’ to protect them. Consequently, they must learn to adjust themselves to the social context and to rely on close others (e.g., family, friends) for support. These working-class realities often promote socialization practices that encourage children to recognize their place in the social hierarchy, to follow the rules and social norms, and to be responsive to others’ needs”(Stephens et al., 2012,p. 1181).

As a result of economic stress, first-generation students tend to struggle academically in their college careers, compared with continuing-generation students. The study provided suggestions to alleviate this problem, especially the use of interdependent workgroups similar to the peer-led workshop program, and concluded that these programs would not only help first-generation students, but also continuing generation students in their future roles as employees.

Even though the cultural mismatch theory provided a good argument in regards to first-generation students not assimilating to the cultural norms of college life, I was curious to see if there were any other theories on why this demographic has such a low success rate. I came across a 2013 study by Kimberlee Ward, who claims that the stereotypes and the positive and negative stigmas that come along with being a first-generation student play a major role in how well students do in their college careers. Using the social identity theory, Ward (2013) categorizes how different groups of people identify themselves. Ward interviewed five first-generation students (one sophomore, four juniors) and found that they encountered many instances of stereotypes in the academic setting, from continuing-generation college students and professors, which influenced how well these students performed in college.

Ward defines social identity theory as “[H]ow people define themselves in terms of their in-group with the assumption that part of a person’s identity comes from their group memberships” (2013, quoting Brown 2000, p. 99). An in-group is a group that one identifies with (e.g., being a first-generation college student and identifying with that group makes it an in-group one belongs to). An out-group is the opposite, meaning it is a group that one does not belong to. Naturally each group will create different ideas and stereotypes for themselves and the other; and according to Ward (2013), this is where the problem lies. She claims that because of different influences in society the average college campus generally has a negative stereotype of first-generation college students. For example, in a focus group she asked the students how they believe faculty and staff view them and their responses were nearly identical.

“I hate to put it this way, but I feel like I’m still focusing on race because that is what is frustrating on this campus. It is going off the stereotypes that we get with race and whatever race those students are associated with, then those are what the faculty goes off

of...’oh this student is not going to work as hard, this student isn’t going to want to participate in class discussions, or this student is not smart’” (Ward, 2013, p.103).

Whether these meta-stereotypes are correct or not, Ward (2013) notes that they still may weigh heavily on a first-generation student’s psyche and may have a significant effect on their performance in the classroom. While the issue of social identity deals with belonging or not belonging to a group, Ward came to a similar conclusion as the cultural mismatch study noted by Stephens et al., 2012. She concludes that because of first-generation students’ often more communal cultural experiences, it would be best if colleges and universities create more mandatory group study and workshops, to solidify their confidence in their in-group, and to ensure their success in their college careers.

“Really taking a look at the programs, resources that are already on campus, looking at how to improve the campus and the programs can be constructive. This benefits first-generation college students in increasing the likelihood that they will be successful on campus, but also benefits the university in lowering its attrition rate and boosting its graduation rate” (Ward, 2013, p. 108).

If, as both Ward and Stevens et al. note, first-generation students are encouraged to strive in situations where the cultural norm of interdependence along with having a positive group meta-stereotype is encouraged, are there empirical studies that examine these concepts of group learning work in the science, technology, engineering and mathematics (STEM) fields? Finding studies dealing with first-generation students in group learning in the math and science fields was difficult. After searching further, I came across a meta-analysis by Jeffrey E. Froyd (2008) who found support regarding the benefits of active or collaborative methods in STEM courses:

“This study examined the extent to which undergraduate engineering courses taught using active and collaborative learning methods differ from traditional lecture and discussion courses in their ability to promote the development of students’ engineering design, problem-solving, communication, and group participation skills...Results indicate that active or collaborative methods produce both statistically significant and substantially greater gains in student learning than those associated with more traditional instructional methods. These learning advantages remained even when differences in a variety of student pre-course characteristics were controlled” (Froyd, 2008, p. 20).

### Method

To explore how group learning affects students in Statics and Strength of Materials class at City Tech, a first-level core course for Civil Engineering & Construction Management, a survey instrument was created to determine how many students in one class were “first-generation,” and what they felt about the workshop component of the class. With the support of the course professor, the survey was administered on April 24, 2014 to all students in attendance that day in the Statics class (of which my workshop group was a part) at the end of the lecture portion, and responses were anonymous. There were 26 students in the class and they all completed the survey.

## Results

The survey included several demographic questions. Of the 26 respondents, 17 (65%) reported this was their first semester in college, and 9 (35%) were in their second or later semester. As shown in Table 1, eight students reported they were first-generation, implying they were the first in their family to attend college. However, of the 18 who answered “No” (that they were not the first in their family to attend college), ten reported that they had a sibling who has attended college before they did. This would be the same generation, so the total of first-generation students was 18, or 69% of the class.

Are you the first in your family to attend college?	Yes	No	No (with Brothers and sister going to College.)	No (parent(s) (or guardian(s) going to College.	N/A
<b>Total respondents: 26</b>	8	18	10	7	1

Of the 26 students in the Statics I class, 24 students attend workshop (two students do not attend) and were categorized either as First-generation or Continuing-generation students, as shown in Table 2 below. Of the 18 first-generation students, 11 consider the Statics workshop a benefit, two did not consider it a benefit, and five students did not answer.

Are you the first in your family to attend college?	Benefit	Not a Benefit	No Answer
<b>Yes (First-generation)</b>	11	2	5
<b>No (Continuing-Generation)</b>	5	0	1
<b>Total Respondents: 26</b>	16	2	6

Of the six continuing-generation students who responded, five considered the Statics workshop a benefit, and one student did not answer.

The question was posed as open-ended (“How has the Statics I workshop benefitted you?”), and the responses from first-generation students included the following:

“The workshop helps me to understand the work better, since there is no time to meet up with classmates. This gives me the chance to meet up with them, sometimes I do not understand the class work but the workshop helps me get a little more understanding.”

“Statics has helped me to understand how to apply knowledge of physics and trigonometry to solve complex construction problems.”

“Best idea ever.”

### Discussion and conclusions

Over the course of the semester it became clear that the workshop sessions gave the students the opportunity to work together in a comfortable learning environment. This also provided them with the opportunity to connect and relate with one another and to realize that they have similar fears and apprehensions about their college careers, voicing issues that might be part of the mismatch of cultures where first-generation students do not have guidance as to what to expect (Stephens et al., 2013). The workshop may be the only opportunity to express some of these concerns. In fact, Stephens et al. (2013) call for more group learning opportunities for first-generation students, even going so far as to suggest these should be mandatory.

Since in this case, the Peer Leader is also a first-generation student, the workshop setting provided a positive environment for the students where they both interacted with the Peer Leader and both first-generation and continuing generation students, allowing for means to enter and feel comfortable in this social setting, and helping them fit into a new social identity (Ward, 2013).

These survey results suggest that there may be many first-generation students in the Civil Engineering and Construction Management program, and the Peer Leading program is not only a benefit to first-generation but also to continuing-generation college students. Peer-Led workshops can not only be a valuable asset for student learning, but can also act as a bridge program to help first-generation students to become more acclimated with the college environment.

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