



THE PEER-LED TEAM LEARNING INTERNATIONAL SOCIETY
PROCEEDINGS OF THE INAUGURAL CONFERENCE
MAY 17-19, 2012
NEW YORK CITY COLLEGE OF TECHNOLOGY OF
THE CITY UNIVERSITY OF NEW YORK
BROOKLYN, NY 11201-2983

**Developing a Community of Practice among Peer Leaders:
The Leadership Seminar**

A. E Dreyfuss, Janet Liou-Mark, Amelise Bonhomme, Travion Joseph

Abstract

The Leadership Seminar, piloted in the fall semester of 2011, is a mandatory weekly meeting for Peer Leaders at New York City College of Technology, City University of New York (CUNY). Its main purpose was to create a community of practice among first-time and experienced Peer Leaders. Continued in the spring 2012 semester, the one hour session provides a setting where Peer Leaders can share their experiences, discuss problems that arise in their workshops, and further develop their leadership and professional skills.

Introduction

At New York City College of Technology, CUNY, the Leadership Seminar is a weekly meeting that all Peer Leaders are mandated to attend. This meeting brings together peer leaders serving for the first time and those who have served one or more semesters previously. First-time Peer Leaders are enrolled in a one-credit course concurrently with their first semester of practice leading a workshop group. The Peer Leader Training course is held weekly for ten weeks and starts with a pre-semester Orientation, a day-long session that experienced Peer Leaders also attend.

Since 2007, Dreyfuss and Liou-Mark have presented the PLTL model with student Peer Leaders at various local conferences, specifically the New York State Mathematics Association for Two-Year College's annual and regional conferences, the Mathematics Association of America Metro New York Section meetings, and conferences sponsored by the City University of New York. Presentations with pedagogical themes are welcomed by these organizations. Most often first-time Peer Leaders displayed a lack of confidence, and they were concerned about their role in the presentations. For the conferences, a presentation would be provided to each student to rehearse individually and as a team. Despite the students' initial apprehensions, Peer Leaders would share their positive presentation experiences to the other students. The benefits were seen to include the opportunity to present before an audience composed primarily of faculty, to assist in the preparation of the presentation, and to having a significant item listed on their resume.

Concerned with helping the Peer Leaders feel more comfortable presenting at conferences coupled with the need for refresher techniques in peer leading, a "Leadership Seminar" was first developed in the Fall 2011 semester, and two sessions were piloted because a consensus could not be reached for a common meeting time. Because the seminar was well received, it was continued in the Spring 2012 semester.

The Seminar Topics – Fall 2011

The Leadership Seminar topics varied widely from pedagogy to professional conduct (Table 1). Guest lecturers provided insights on topics related to the workforce. Each topic was supported with readings from current events which illustrated the immediacy of the topics. For example, a discussion of gender stereotyping started with advertisements aimed at young women by major retailers, and the session led to other types of stereotyping, specifically, the “Asian-American Model Minority” myth. Peer Leaders would share their experiences regarding the issues and how their behavior might affect the students in their workshop group. One guest speakers presented opportunities available through IBM, and the other spoke on the need for women to use negotiation tactics in the workplace. A former Peer Leader from City College led a discussion on how to present the idea and benefits of peer-led workshops to faculty and to students.

Table 1. Leadership Seminar Fall 2011 Agenda (see Appendix A for full schedule)

Topics	Issues Covered
Asking questions as practice in workshop	Bloom’s Taxonomy
Persuasive speech Mr. Oleg Survillo (Former City College Peer Leader)	Importance of a peer leader in a student’s life Promoting PLTL workshops
Review of email etiquette	101 Email Etiquette Tips
The way things are...or not?	Gender (“Shirts: Allergic to math”) Cultural stereotyping (the Asian-American Model Minority myth)
May I present to you...?	Formal introductions An elevator speech
How do I cite...?	Citations: A guide
Dr. Dorothy Weaver (Barnard College)	“Rocking the Boat and Playing the Game: How professional women learn to speak up and negotiate in the workplace”
Making people smarter	Carol Dweck’s article: The secret to raising smart kids (<i>Scientific American Mind</i>) Writing in response to questions & Deconstructing reading
Ms. Jennifer Ash (IBM)	Opportunities in Enterprise Computing
“And this week’s news...graphs!”	Reading Graphs – The world’s 7 th billionth inhabitant – shifts in population (<i>Washington Post</i>) Blog set up by Beili Wang
Writing thank you notes “It’s time for thanks!”	How to write a thank-you note by Leslie Harpold Sample interview letter (http://jobserarch.about.com/od/thank_youletters/a/thanktemplated.htm) Testing of assumptions
Academic Integrity	What have you learned about being a leader by leading a workshop? City Tech’s Academic Integrity policy (pp. 4-5)
Surprise!	Video (Tony West: Four Math Peer Leaders at City Tech) Reflections on leadership seminar Critical Incident Questionnaire (CIQ)

The Seminar Topics – Spring 2012

From the leadership seminar evaluation the topics were chosen for the spring 2012 (Table 2). More group work was intentionally added to build a stronger connection between the new and experienced peer leaders. As a result there were more interactions among the peer leaders than the previous semester.

Table 2. Leadership Seminar Spring 2012 Agenda (see Appendix B for full schedule)

Topics	Issues Covered
Introductions	Script for the first workshop
Understanding Good Leadership Behaviors	
Establishing professional boundaries	Issues of authority, appropriate behavior
Upholding Academic Integrity	The important guidance in learning
Summer Research and Internship Opportunities	Writing a personal statement
Making Formal Introductions An “Elevator Speech”	Public presentation and speaking
Cultivating Fine Dining Etiquette	Sponsored by the Honors Scholars Program and Department of Hospitality Management
Polishing Email Etiquette	Writing proper emails
Expressing Gratitude	Writing notes of appreciation
Identifying Gender and Cultural Stereotyping	Being consciously aware in everyday situations
Building Your Resume	Citing presentations and publications
Empowering and Inspiring Others	Defining qualities and strengths
Evaluating the Leadership Seminar	CIQ and survey

Observations

The Leadership Seminars are designed to enhance the leadership development of a network of peer leaders. The weekly meetings address several core competencies required at all levels of leadership: communication, teamwork, interpersonal skills, self-direction, and networking. By integrating first-time and experienced Peer Leaders, informal conversation took place in groups so that practices were shared, opportunities for internships, conferences and other information were disseminated; a topic of practice was reviewed through an exercise followed by open discussion. This continual dimension of reflection occurred as peer leaders are explicitly asked to reflect in writing on aspects of their practice, and implicitly, through group discussion.

There are many benefits that stem from the seminar. Peer Leaders are able to connect to one another by sharing ideas and information. They learn how to be proactive in the learning environment, to be assertive in workshop, thus developing their interpersonal skills. The role-playing scenarios in seminar cultivate confidence needed to effectively facilitate the workshops. Through the active interactions, the first-time Peer Leaders can learn various techniques from the experienced Leaders. Therefore a viable mentorship is established.

Evaluation

At the end of the Fall 2011 and Spring 2012 semesters, surveys soliciting the Peer Leaders’ responses regarding the peer leading experience and the leadership seminar were distributed. For the Fall 2011 semester, 21 out of a total of 34 peer leaders returned the four open-ended questions posed. The top three responses were recorded.

Question 1: What makes a good peer leader? (N=17)

- Being well-knowledgeable in the subject
- Being patient, and motivated
- Being able to conduct group work

Question 2: How does a peer leader model “good student” behavior? (N=17)

- Encourages good behavior and positive actions
- Being on time
- Asking questions

Question 3: What have you learned about being a leader by leading a workshop? (N=21)

- Team work
- Building leadership skills
- Knowledge about different learning styles

Question 4: Please reflect and write your thoughts on what you think should be done to “grow” the PLTL program at City Tech (N=21)

- Having the professors communicate it to their students
- Having more subjects included in the PAL workshops
- Having more embedded (mandatory) workshops

Towards the end of the Spring 2012 semester, a formal survey solicited the feedback of students’ beliefs before and after being a Peer Leader. Twenty-five (25) out of a total of 28 peer leaders, 12 females and 13 males, filled out the survey. Fourteen (56%) of the participants were experienced peer leaders who had facilitated workshops prior to this semester. A pairs t-test showed statistical significance in all the response,s indicating that peer leaders’ cognition in mathematics and science have changed, leaderships skills enhanced, communication abilities improved, affective attributes developed, and the desire to continue towards advanced studies increased (Table 3).

Table 3: Peer Leader Experience Mean Responses

Peer Leader Experience (n=25)	Mean (Standard Deviation) (1=Not very much, 3=Somewhat, and 5=A lot)	
	Before being a peer leader	After being a peer leader
Cognition		
1. My knowledge in mathematics/science will be reinforced.*	3.8 (1.1)	4.7 (0.7)
2. I will be able to explain mathematics/science concepts clearly.*	3.4 (0.8)	4.2 (0.7)
Leadership		
3. I will use different techniques to promote group learning.*	2.7 (1.1)	4.2 (0.9)
4. I will enjoy teaching mathematics/science.*	3.6 (0.9)	4.4 (0.9)
5. I will consider teaching as a possible career option.*	2.9 (1.2)	3.4 (1.5)
Skills		
6. My communication skills will improve.*	3.4 (0.8)	4.3 (0.6)
7. My confidence in mathematics/science will increase.*	3.7 (1.0)	4.4 (0.8)
Affective Attributes		
8. I have confidence in public speaking.*	3.2 (1.1)	4.2 (0.9)
9. My understanding of mathematical/science concepts will increase.*	3.5 (0.9)	4.3 (1.0)
Future Aspirations		
10. I will consider applying to graduate school.*	3.9 (1.1)	4.4 (1.0)

* Statistically significant, $p < .001$

There were also four open-ended questions on the survey. The top responses for each question are summarized.

Question 11: What do you enjoy most about being a peer leader? (N=25)

- Helping others
- The leadership skills – learning process
- Seeing improvements in student work
- Team work

Question 12: What did you least enjoy about being a peer leader? (N=25)

- Engaging students who do not want to participate
- Time span of only one hour
- Student expectation of peer leaders
- Poster presentation
- Entering survey data at the end of the semester

Question 13: What is the most challenging aspect of being a peer leader? (N=25)

- Group work among students
- Managing personalities
- Applying peer leader experience
- Preparing for unexpected answers
- Communicating ideas and concepts effectively
- Connecting to students

Question 14: What would improve your peer leading experience? (N=25)

- Learning more about peer leading
- Peer leading has been a memorable experience
- Ability to enforce group work among students

Discussion

How might a community of Peer Leaders be defined? “From a situated view, people learn as they participate and become intimately involved with a community or culture of learning, interacting with the community and learning to understand and participate in its history, assumptions, and cultural values and rules” (Hansman, 2001, p. 46).

A “community of practice” is a group of people who possess a common passion for something that they do and hone their skills together as they interact on a regular basis (Lave and Wenger, 1991). Formally, a community can be called a community of practice if three criteria are present: The Domain, the Community, and the Practice (Lave and Wenger, 1991).

The Domain: It is commitment that brings the group together. Within this domain there is shared knowledge and this sharing makes these individuals different from people outside of the domain. The Domain of the Leadership Seminars was not only the practice of peer leading a workshop group of students, but also the content of the course material, to serve as a model for various social, professional, and leadership practices. The content of the Leadership Seminar was formed around topics that students, despite being Peer Leaders, lacked experience in. Having an explicit discussion

of a topic after a shared experience in the form of reflection through individual writing, discussion in groups, role-playing, completing surveys or other tasks helped ground the topic.

The Community: As the individuals of the potential community want to work toward their interest, they engage in joint discussions or joint activities where they share information. In the process, these individuals build relationships that enable them to learn from each other. However, the members of a community of practice do not have to work together on a daily basis to be considered a community of practice.

The Practice: One of the most important things that a community of practice encompasses is practitioners. These individuals use their shared knowledge to further their practice. The concept of “practice” occurs during the time that Peer Leaders facilitate a workshop session for a group of learners. For that hour or so, Peer Leaders interact with the students in their workshop group, as they facilitate the discussion, observe interactions, learn how to direct action, reflect on their practice, obtain feedback, change course and apply techniques and theories learned in the Peer Leader Training class. By adding the Leadership Seminar, Peer Leaders had an opportunity to interact with others undergoing the same experience who are perhaps a semester or more ahead in experience.

The Peer Leaders have the “practice.” The domain is leading a workshop group of students to learn the course material, and the community includes the students in the workshop group (who may be potential Peer Leaders), faculty using PLTL workshops, coordinators of the Peer-Led Team Learning program, and the community of Peer Leaders. The combination and development of these three elements is the essence of a community of practice.

Does the Leadership Seminar help a group of Peer Leaders develop a Community of Practice?

A community of Peer Leaders and faculty who act as coordinators has been created through the Leadership Seminar. With an average of 30 Peer Leaders each semester conducting workshops in mathematics, chemistry, and statics (civil engineering and construction management), there is a common language of mathematics. The enthusiasm and tips that experienced Peer Leaders share with novices at Orientation set the tone for the formation of a community. The “common passion” (Lave & Wenger, 1991) is leading the workshop and sharing skills through the interactions during the Leadership Seminar. The coordinators are very much a part of the community: they are guides, role models, liaisons to various opportunities; at the same time neither has served as a Peer Leader.

The domain of peer leading involves both content (mathematics, chemistry, statics, etc.) and process (how to facilitate a group). The Peer Leaders were told the Leadership Seminar was “mandatory” although those who had class, lab, or work during the hour were excused. It was clear that those who could not attend stayed in touch with at least one Peer Leader who attended. Both content and process were discussed during the Leadership Seminar, almost always as a component of the formal topic. The connections to other components of the academic world (presentations, publications, internships, research opportunities, professional development courses) were presented, and links to workplace settings were made. It also served as a way to remind peer leaders of techniques that they may not have tried or an opportunity to present either a problem or a solution to someone’s concerns. There is also an instructive relationship for the coordinators, who often learn about issues in practice from those who actually lead the workshop groups.

The community is brought together by the coordinators, and it is emphasized each semester with the new cohort applying to be Peer Leaders. Potential Peer Leaders are recruited by either student word of mouth, an invitation to the Honors Scholars, instructor's recommendation, or a former workshop participant. Applications are collected, and group interviews held (Dreyfuss, 2012); students must have a Grade Point Average (GPA) of 3.0, and passed Precalculus (MAT 1375) with a grade of "B" or higher. The members of the community become colleagues, sharing information as students (information external to the peer leading experience) and as Peer Leaders (internal to the community).

The practice of leading a workshop on a weekly basis over the course of a 15-week semester is a complex role. It is situated learning (Lave & Wenger, 1991; Hansman, 2001) in the context of the interactions between Peer Leaders and the students in their groups. Peer Leaders are practitioners of a particular role of helping their fellow students learn, and observing the issues students have in mastering the material. Peer Leaders often feel responsible if their students did not do well on course examinations. They must fight a feeling of "helping" students by "teaching them how to do" the problem; as good students they have mastered the material to their own understanding. Stopping themselves from "teaching" and turning to questioning and other techniques of guiding the students is cognitively heavy: remembering the material, directing the group's actions and responding to individuals, managing the time, are all processes that are ongoing during the workshop period. It is also affectively heavy: observing everyone's actions, turning resistance to productivity by finding ways to engage students, knowing if a problem has another method of solving and facilitating discussion are difficult tasks. Yet first-time Peer Leaders face similar situations as do experienced leaders in the arc of a semester. In this, the concept of the "legitimate peripheral participant" (Lave & Wenger, 1991) is distinctly different from the first-time Peer Leader who must perform the role as well as those with more experience. What may distinguish this type of "apprenticeship" is that the Peer Leaders are all undergraduate students who share a common goal of succeeding in the subject area with the students in their classes. The scaffolding provided by the social network of the Peer Leader Training class discussions, the sharing of weekly journals online, and the discussions in the Leadership Seminar, allow Peer Leaders to construct a conceptual understanding of their practice in a community.

Conclusions

The Leadership Seminar has opened a pathway for Peer Leaders to form a type of community with other Peer Leaders. It has helped their confidence as leaders and moreover, shaped their future aspirations. The initial goal of many of the Peer Leaders was simply getting a degree and a job; this has now been transformed to considering applying to graduate school. The Leadership Seminar provided a subtle introduction to learning about the expectations of a scholarly institution (Hansman, 2001). The "soft skills" of understanding professional boundaries, making introductions, communication etiquette, preparing resumes and personal statements, dealing with academic integrity are all topics that Peer Leaders gained in practice, "helping students understand and become [better] participants in academic culture" (Hansman, 2001, p. 47).

The language of a "community of practice" has not been integrated into peer leading practice as yet, perhaps because the practice of peer leading, while supported in various ways, is based on an instructional model that faculty decide to adopt. There is a possibility of a larger "community of

practice” encompassing not only the Peer Leaders, but the instructors who modify their course to accommodate workshop, the administrative champions who promote the use of peer-led workshops, and learning centers supporting such efforts. The image of a “legitimate peripheral participant” as apprentice, coming closer to the expert through practice and reflection in concert with others, is not as clear cut: the Peer Leader cannot become an instructor while leading a workshop. But the Peer Leader does have the experience of creating a cooperative group, if not a team of learners, and this practice often attracts Peer Leaders to become future teachers and educators. The building of vibrant community among the Peer Leaders, administrators, coordinators, and faculty can promote a learning organization that can transform undergraduates, especially those underrepresented in STEM, to become prominent citizens and leaders in the STEM workforce.

Acknowledgements

Funding for the PLTL program at the New York City College of Technology, CUNY and for conference support was provided by the Black Male Initiative, CUNY, Perkins VTEA, National Science Foundation Grant # 0622493, MAA Tensor Women and Mathematics Grant, and the City Tech Foundation.

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Cite this paper as: Dreyfuss, A.E., Liou-Mark, J., Bonhomme, A., Joseph, T. (2013). Developing a community of practice among peer leaders: The leadership seminar. *Conference Proceedings of the Peer-Led Team Learning International Society*, May 17-19, 2012, New York City College of Technology of the City University of New York, www.pltlis.org; ISSN 2329-2113.

Appendix A
Schedule for Leadership Seminar –Fall 2011

Leadership Seminar
Fall 2011

Facilitators: AE Dreyfuss and Janet Liou-Mark
 Tuesdays, 4-5pm or Thursdays, 8:30-9:30am

Standard features, each session:

- Welcome and introductions
- Review of workshop practice each week
- Announcements: upcoming events and opportunities

Session	Topic	Materials & Comments	Attendance
August 30	Asking questions as practice in workshop	Bloom's Taxonomy	9
September 6	Persuasive speech Guest: Oleg Survillo	Importance of a Peer Leader in a Student's Life (Rahman Bakare)	6
September 13	Review of email etiquette	Handout – 101 Email Etiquette tips Group Exercise	12
September 15	Review of email etiquette	Handout – tips Group Exercise	7
September 20	The way things are...or not?	Gender ("Shirts: Allergic to math") and cultural stereotyping (the model minority myth)	9
September 27	May I present to you...?	Formal introductions; elevator speech; workshop discussion	11
September 22	The way things are...or not?	Gender ("Shirts: Allergic to math") and cultural stereotyping (the model minority myth)	9
October 6	May I present to you...?	Formal introductions; elevator speech; workshop discussion	7
October 11	How do I cite...?	Citations: A guide Examples and discussion	13
October 13	How do I cite...?	Citations: A guide Examples and discussion	7
October 18 (Faculty Lounge – A632)	Talk by Dr. Dorothy Weaver (Barnard College)	"Rocking the Boat and Playing the Game: How professional women learn to speak up and negotiate in the workplace"	23
October 20	Asking questions as practice in workshop	Bloom's Taxonomy	5
October 25	Making people smarter	Carol Dweck's article: The secret to raising smart kids (Scientific American Mind) Writing in response to questions & Deconstructing reading (in groups)	12
October 27	Making people smarter	Carol Dweck's article: The secret to raising smart kids (Scientific American Mind) Writing in response to questions & Deconstructing reading (in groups)	5
November 1 (Faculty Lounge – A632)	Talk by Jennifer Ash (IBM)	Opportunities in Enterprise Computing	27

Session	Topic	Materials & Comments	Attendance
November 3	“And this week’s news...graphs!”	Reading Graphs – The world’s 7 th billionth inhabitant – shifts in population (Washington Post) -Blog set up by Beili Wang	7
November 8	“And this week’s news...graphs!”	Reading Graphs– The world’s 7 th billionth inhabitant – shifts in population (Washington Post)	11
November 10	Writing thank you notes “It’s time for thanks (notes)!”	How to write a thank-you note (10/1/2003) by Leslie Harpold & Sample interview letter (http://jobserarch.about.com/od/thankyouletters/a/thanktemplated.htm) -Testing of assumptions	7
November 15	Writing thank you notes “It’s time for thanks(notes)!”	How to write a thank-you note (10/1/2003) by Leslie Harpold & Sample interview letter (http://jobserarch.about.com/od/thankyouletters/a/thanktemplated.htm) -Testing of assumptions	6
November 17	Academic Integrity	Writing - Open Question: What have you learned about being a leader by leading a workshop? Two-page handout on City Tech’s Academic Integrity policy (pp. 4-5)	10
November 29	Academic Integrity	Writing - Open Question: What have you learned about being a leader by leading a workshop? Two-page handout on City Tech’s Academic Integrity policy (pp. 4-5)	12
December 1	Surprise!	Video; reflections on leadership seminar; Critical Incident Questionnaire	6
December 6	Surprise!	Video; reflections on leadership seminar; Critical Incident Questionnaire	10

Appendix B
Schedule for Leadership Seminar - Spring 2012

**SPRING
2012**

Peer-Led Team Learning at City Tech Leadership Seminar



Tuesdays, 1-2pm, Namm 804
Facilitators: Professors Janet Liou-Mark and AE Dreyfuss

Session	Date	Topic
1	January 31, 2012	Introduction Understanding Good Leadership Behaviors: Script for the first PAL workshop session
2	February 7, 2012	Establishing Professional Boundaries
3	February 14, 2012	Upholding Academic Integrity
–	February 21, 2012	No Session – Classes follow Monday schedule
4	February 28, 2012	Finding Summer Research and Internship Opportunities Submitting Abstracts for STEM Conferences
5	March 6, 2012	Making Formal Introductions and an “Elevator Speech”
6	March 13, 2012	Cultivating Fine Dining Etiquette Janet Lefler Dining Room, 2 nd floor Namm building 12:45-2 p.m.
7	March 20, 2012	Polishing Your Email Etiquette
8	March 27, 2012	Expressing Gratitude: Writing notes of appreciation
9	April 3, 2012	Identifying Gender and Cultural Stereotyping
–	April 10, 2012	No Session - Spring Recess
10	April 17, 2012	Building Your Resume: Citing presentations and publications
11	April 24, 2012	Empowering and Inspiring Others: Defining qualities and strengths
12	May 1, 2012	Evaluating the Leadership Seminar

Supported by
NSF STEP #0622493, MAA Tensor Foundation, and the Honors Scholars Program



Appendix C

Peer Leader Experience Survey



Peer Leader Survey

Spring 2012

List the all the workshop course(s) you have facilitated: _____

How many semesters have you been a peer leader? _____

Major: _____ Number of credits completed: _____ Gender: _____

Ethnic Background (*Response is voluntary and will be treated as confidential.*)

Black (non-Hispanic) Hispanic Asian/Pacific Islander White (non-Hispanic) Native American Other

Why did you want to be a peer leader? _____

My thoughts about being a peer leader	Degree of Impact									
	Before being a peer leader					After being a peer leader				
	Not very much		Somewhat		A lot	Not very much		Somewhat		A lot
1. My knowledge in mathematics/science will be reinforced.	1	2	3	4	5	1	2	3	4	5
2. I have confidence in public speaking.	1	2	3	4	5	1	2	3	4	5
3. My communication skills will improve.	1	2	3	4	5	1	2	3	4	5
4. I will use different techniques to promote group learning.	1	2	3	4	5	1	2	3	4	5
5. I will enjoy teaching mathematics/science.	1	2	3	4	5	1	2	3	4	5
6. I will consider teaching as a possible career option.	1	2	3	4	5	1	2	3	4	5
7. My understanding of mathematical/science concepts will increase.	1	2	3	4	5	1	2	3	4	5
8. I will be able to explain mathematics/science concepts clearly.	1	2	3	4	5	1	2	3	4	5
9. I will consider applying to graduate school.	1	2	3	4	5	1	2	3	4	5
10. My confidence in mathematics/science will increase.	1	2	3	4	5	1	2	3	4	5

11. What do you enjoy most about being a peer leader?
12. What do you enjoy least about being a peer leader?
13. What is the most challenging aspect of being a peer leader?
14. What would improve your peer leading experience?