



Peer Leader Essays from the Desert Southwest: The Practice of Leading Learning

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Peer Leader Essays from the Desert Southwest: The Practice of Leading Learning

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Abstract

At semester's end at the University of Texas at El Paso and at the University of Texas of the Permian Basin, faculty members directing the PLTL Programs invite Peer Leaders to reflect on their experience, to describe their challenges, and to offer their personal advice. For the benefit of future Peer Leaders, here are their stories, reflections, observations, and advice about leadership and the practice of leading.

Keywords: Peer-Led Team Learning, Peer Leaders, Lessons Learned, Student Learning, Overcoming Challenges, Leadership Growth, Facilitation of Learning

Introduction

As Agents of Change (Aragonez, et al, 2021), Peer Leaders at the University of Texas at El Paso (UTEP) and at the University of Texas of the Permian Basin (UTPB) offer these reflections on their experience, their challenges, their personal reactions to fears, delights, and plans for the future. Inspired by Marymoore Patterson (2021), these are the stories that have blossomed from the “[Seed Corns](#)” described by Wayne C. Johnson with David W. Davis and Leslie Luna de Lara in the offices of U.S. Senator Kay Bailey Hutchison: “We are always looking for people who can apply what they learn.... ‘They know the theory, but how do you turn on a light bulb?’ These are the ‘Seed Corns’. We get a ‘two-fer’ out of it. You get the students coming through and you get the real leaders in STEM education... They’ll have amazing careers” (Johnson, 2012).

These essays express perceptions about the experience of leading in the words of the Peer Leaders themselves. They express the sense of growth experienced, and explain the sense of belonging (Strayhorn, 2019) many Leaders gain. One reader of these essays commented that they offer insight for new instructors who intend to implement Peer-Led Team Learning, as well as allow experienced instructors to recognize opportunities for improvements. Nataly Amaya observed that readers may be prompted, “to look for the same obstacles mentioned in their own program, and see if it exists in theirs, and if so, how to mitigate them to make their program as productive and useful as possible.” She added, “I can personally attest to some of the issues Peer Leaders encountered in this piece ... learning that there are some common issues across PLTL programs is very interesting to know. Sometimes, professors lack the mindset that the Peer Leaders (the near peer) can recognize more readily, and here is where the value of these essays is strongest.”

UTEP general chemistry offers weekly, required Peer-Led Workshops of two hours’ duration for first and second semester courses. Besides a pre-semester Training Institute, Peer Leaders and lecturers meet twice weekly – in one-hour sessions called ‘Preview’ to discuss issues, content, strategies, exam reviews, and other administrative details. Peer Leaders are challenged to create materials and to contribute to the literature on learning.

A. Reflections on Leading Learning

Contrasting Peer Leading with Research

Anthony Ramirez

An unforgettable opportunity, an irreplaceable experience, and a commitment - where passion and professionalism collide - provide the fuel for an explosive reaction that yields the Chemistry Peer-Led Team Learning (PLTL) Program at the University of Texas at El Paso (UTEP). I was a member of the program for six semesters, and I cannot stress enough the extraordinary value and insight that I gained during my time as a General Chemistry Peer Leader. The program presented me with the opportunity to facilitate student learning via activities, games, and practice problems. My time as a Peer Leader put me in a leadership position that I otherwise would not have achieved without becoming a teacher in a school district or a Teaching Assistant in graduate school.

Peer Leading allowed me to actively help students learn general chemistry. It was clearly stated by the General Chemistry professors that it was not my job or responsibility to *teach* my students. Instead, it was my job to *facilitate* their learning— a process that I built upon for the entirety of my Peer Leading tenure. I collaborated with other Peer Leaders twice a week during our PLTL meetings to discuss the concepts that we should be covering and how we could engage our students with activities that tied in with those concepts. Bi-weekly meetings provided an opportunity for one to share weaknesses and insecurities in a constructive environment where other Peer Leaders (and professors) would discuss potential solutions. Actively discussing my problems about content or students ultimately contributed to improving my interpersonal communication skills; this transferred to improving my relationships with my students and improving my self-confidence and public speaking skills. This growth was further amplified by the amount of time that I committed to my students: averaging around 20 hours per week during my first four semesters and around 15 hours per week for my final two semesters (this decline in time resulted from my competing interest in participating in a research laboratory).

Peer Leading was extremely enjoyable and valuable for my own personal growth, but I at first doubted that it could nurture my skills as a researcher. The differences between research and Peer Leading were immediately evident, but I quickly realized how much Peer Leading contributed to my laboratory skills. Peer Leading required me to perform weekly chemical demonstrations that explored real-world applications of course concepts. Therefore,

I was required to receive chemical safety training at the start of every semester. These safety trainings were the same as those required of all active researchers working in laboratories. The methods that I employed for every exploration often had very real connection to the methods that I used for various experiments in the research lab. My enhanced communications skills were arguably the most important asset gained because Peer Leading gave me valuable experience effectively expressing my thoughts and relating abstract concepts

Does peer leading trump research? No, but peer leading is still not inferior to research in a chemical laboratory under the supervision of a professor. Peer leading cultivated my passion for chemistry, putting me in front of several generations of students with all types of personalities and learning styles. Peer leading is the reason why I want to become a chemist and professor so that I can continue this program that utilizes undergraduates to help their peers learn via creative, team-based activities.

Peer Leader Challenges

Marianne Marin

My first semester as a Peer Leader was a bittersweet yet tumultuous experience full of valuable lessons and unique challenges. One day was particularly insightful. I had trouble with this workshop all semester, but most of the challenges, such as a lack of student participation, seemed universal to Peer-led Team Learning. However, something felt wrong, as if each interaction cemented more animosity between the students and me. At first, I was introspective and blamed myself for this development, but the more I thought of it, the more I realized the complexity of the issue. I had another workshop, and I knew those other students trusted me and understood the value of the program. This understanding was not reflected in my first workshop group and I tried to find ways to better our interactions. On one day, I was feeling optimistic and had walked into my workshop a few minutes early to seek advice from the previous workshop's Peer Leader.

After a short talk, the Peer Leader gave me a snippet of advice and left, yelling over her shoulder, "Have a good workshop!" Before I could respond, one of my workshop students turned to me and said flatly, "That's impossible."

I was taken aback, shocked that a student would feel so emboldened as to say something like that. However, I took a second and decided to figure out the root of his feelings. "Why do you feel that way?" I asked. "Because it's workshop," he responded. I was disappointed with his answer and decided not to pursue the matter further. However, it felt wrong to end

the conversation on a negative note, so, in an attempt at cheer, I smiled. "I'm sorry you feel that way," I said. "Chemistry can be fun."

At that point, I was only slightly discouraged as I began my workshop but matters soon took a turn for the worse when I prompted a student to answer a question. I simply asked him to give the formula for barium hydroxide. I had seen the student correctly answer the question on a previous quiz, so I thought he would be a reliable pick. However, he simply shrugged and claimed he didn't know. I was unwilling to pick another student without first having him try, because it felt like a dangerous precedent other students would want to follow. Instead, I prompted him to give it his best shot. In response, the student rolled his eyes, shook his head, and snapped, "Uhh I don't know, X?" "X?" I asked. "The formula for Barium Hydroxide is X?"

The student didn't miss a beat. He snickered and looked around, as if checking to see if his peers found it as amusing as he did. "Or is it Y?" He laughed. I was incredulous. I stammered for a moment, unable to come up with an answer, but decided to ask, "Is that your final answer?"

Maybe I should have left the matter alone and simply ignored him, but I was inexperienced and unfamiliar with conflict. Looking back, I believe that by responding to his aggression as I had, I empowered him. He seemed to savor making me uncomfortable and then answered, "Z." His response was extremely frustrating, demeaning, and embarrassing. I felt my authority was being undermined and feared losing the respect of the other students. Wary of continuing the interaction, I moved past the problem and continued my workshop, making a mental note of speaking to the student once the workshop ended.

Things continued as usual. The students worked on titration problems at the boards when I noticed that most groups had failed to balance the chemical reaction correctly. I walked around to make sure this issue was common enough to make a workshop-wide comment then said, "Hey guys, I see that most of you aren't getting to the right answer. Try to trace your steps back, and make sure your ratios are right."

At that very moment, the same student who had said workshop could not be good said, "Why can't you just give us the answer? That would make it a good workshop."

Other students murmured their agreement. I laughed impulsively in an attempt to diffuse the tension and my mounting discomfort, then said, "That wouldn't be helping you guys. You don't need answers, you need to know how to solve the problems."

"Just give us the answers," another student quipped and soon there was a chorus of voices demanding I give away solutions.

At that point, I realized something crucial. I had adopted the same approach in both of my workshops despite having two completely different sets of students. In my other workshop, the students were eager to participate, because they understood that it helped them in the end, learning strategies rather than answers. They responded well to a positive and nurturing atmosphere and appreciated my attempts to help them. The difficult group did not value their time in the workshop and found any effort on my part ridiculous and worthless. Yet, I continued to approach the problem as I would with my other workshop. I finally realized that they would not respond to any positive reinforcement and knew I had to meet their hostility with sternness of my own.

“You want the answers?” I asked, and they groaned yes in return. “Okay,” I said, pushing off the table to make my way to the board. “It’s time for our weekly quiz. Everyone, erase your boards.”

I waited for the students to clear their work and take their seats. Then, I projected the quiz. However, I wrote the correct answers below each question. “Okay, here are the answers to each quiz question. I’ll only be grading work, so show me you can get to those correct answers. Partial credit for partially correct work.”

Even in that moment, I believe the students understood their mistake. Chemistry, and many other things in life, are rarely about having simply “the answer.” Rather, understanding, and especially learning is about having knowledge and knowing how to wield it to solve an array of problems. Afterwards, a student commented that taking that quiz was not the same experience as taking any other quiz, since they all realized the importance of knowing how to reach an answer.

From that day on, the students seemed to participate a bit more, albeit begrudgingly. That day could have destroyed their view of me as a Peer Leader and empowered them to perceive me as someone that could be manipulated and demeaned. However, in the end, it helped solidify my role as a Peer Leader, and through some tough-love, they came to understand the value of PLTL techniques. In the future, I hope to continue to identify the difference between my two groups and develop unique approaches as necessary.

Lessons Learned as a First Semester Peer Leader

Sofia Delgado

This fall semester was a unique experience for everyone. I had the good fortune of balancing my first job and a semester's worth of studies completely online. It was a very rewarding experience, and I believe it allowed me to continue to grow as a professional and as a person.

The biggest lesson I learned this semester was time management. Although I have always received compliments for my ability to handle many things well, this semester demonstrated that there is always room for improvement. I had the responsibility of updating grades weekly so that students knew their standing in the workshop. This proved challenging but as I improved my time management skills, I found my efforts tremendously eased. Along with the grading task, I had thirty students who were counting on me to help them strengthen their chemistry knowledge. I assumed responsibility to make it as interesting as possible through activities and practice problems, but that required scheduling more time to ensure that there were available workshop activities.

At the beginning of the semester, I lacked engaging activities for the students. To review the first few learning modules in a Workbook written by prior Leaders in this Program, I relied mostly on practice problems, and it was sometimes difficult to keep my students involved. I learned where to look for ready-made activities that I could then edit to better match the material covered in the Workbook.

I have really enjoyed my time as a chemistry Peer Leader this semester and the one thing I would like to contribute to the program is the set of Spanish review sessions. This semester, a few students attended the Spanish review sessions and found them helpful. I think these sessions are essential on our campus because many of us come from Spanish-speaking homes (El Paso is 80% Hispanic) where learning struggles often accompany the language barrier. It is a good start, and at some point we will be able to incorporate other languages so that we can assist even more students. I hope to better organize reviews in Spanish with other interested Peer Leaders and turn these reviews into recurring sessions. I look forward to returning as a Peer Leader this spring to continue to develop my professional skills and strengthen the chemistry knowledge of my students.

Perspective on PLTL from a European Scholar

Fernando Montalvillo Ortega

Background. My passion for science, especially chemistry, began when I was 14 and I took my first classes in Physics and Chemistry. I found something that I was really good at and that I enjoyed doing, so I felt really motivated. As a result, I was encouraged to become a doctor but that thought never crossed my mind as having the life of a person in my hands seemed too much of a responsibility. But I wanted to help people, and I realized that medical research could provide me with the solution. Moreover, I have been intrigued by the never-ending pursuit of truth by scientists. I consider myself to be a loyal and honest person, thus, truth is an obsession to me.

My home country of Spain is not well known for its Chemistry industry or research. That is why I decided to study abroad. I took this opportunity to advance my persona and career. I contacted an enterprise called *Decoasports* that helps students look for scholarships in the United States and I was accepted at the University of Texas of the Permian Basin. In these four years, I have tried to develop my skills, immerse myself in the culture, and be part of the community. I have participated in many activities on campus so that I could experience college life in its totality, allowing me to meet new people. During my freshman year, I was an athlete with the soccer team. This improved my discipline and teamwork but I quit soccer as I wanted to focus on my work and grades. I have maintained a 4.0 GPA while having a part-time job, and served as a UTPB student Senator for a year and the Treasurer of the International Club and the Sociology Club for two years.

Since my sophomore year, I have worked as a tutor at the UTPB Success Center, helping students with Biology and Chemistry courses. When I was a junior, I became a Peer Leader for general chemistry. The Peer-Led Team Learning program at UTPB is very young and I was part of a small group of students that helped Dr. Milka Montes and Director Fierro to establish the program.

Reflection. Since I come from Europe, I have experienced another type of educational system and way of thinking. For instance, tutoring and Supplemental Instruction seem weird to me. I come from a more individualistic culture in which you are on your own and have to find the answers by yourself, especially at the college level. We were always told in high school that in college, professors would not care about the students and that we needed to be prepared. Nevertheless, it is undeniable that the goal of a college education is to raise mature and capable individuals. So, the idea of tutors or study groups seemed impractical or inefficient to me because I thought it did not seem to reinforce individual critical thinking. However, as

I have gotten better at tutoring and peer leading, I have realized that the end goal of these activities is to develop the critical thinking of the students. In peer leading we say that we do not lecture, we ask the right questions. In the end, we try to get the students to think critically and independently.

I want to share something that happened when we went online last semester. It surprised me that my top students in face-to-face workshops became quiet online and that my shy students in person became more proactive online. For instance, my General Chemistry 2 workshop was very ambitious and active before the pandemic and when we went virtual, the students did not want to participate in the workshop. Yet in my General Chemistry 1 workshop where I had had more problems with my students participating in person, online they participated more to the point that I had volunteers for each exercise.

I would define this semester as one of constant change and accountability. Constant change because every week was different. For instance, I did not know how many students I was going to have in my workshop at any point due to self-quarantine rules. Several new Peer Leaders joined us, and together we had to adapt to this situation. In our department, we offered both face-to-face and online workshops. This hybrid system compensated for many problems, but it was also new for all of the Leaders as we tried new things with the Canvas learning system that made the experience more difficult. Added to all of this, a new component was implemented this semester: weekly discussions with Dr. A.E. Dreyfuss and Dr. Ana Fraiman in which facilitation techniques and chemistry content were discussed. Add higher accountability, because I had to take care of the students more than previously. Luckily, both of my workshops were in person. I really appreciated the fact that I could interact with my students face-to-face. But due to Covid restrictions, with one student per table, I was the only one allowed to write on the board, and group activities were troublesome to do. I also had to meticulously follow all the rules so as not to hold the department or the University responsible in case someone became ill.

Despite the adversities, everything worked out. I am proud of having been part of this group. With the skills I learned through PLTL, I hope to keep helping people.

Insights From A Peer Leader

Kaleigh Love

I have learned so much this semester, about myself, the Peer Leading program, and facilitating learning. As a student who already has a Bachelor's degree, in preparation for taking the MCAT (Medical College Admission Test) I took my first full semester of science and math

classes, which was exhausting and challenging. The most important thing that I learned, apart from the incredibly fascinating material, was that I could do it, and I did well! The success from this first full-time semester has boosted my confidence in regard to science and math content.

Being part of the PLTL program this semester made me even more appreciative of my accomplishment. I built upon my rocky knowledge of General Chemistry I and began to feel more and more comfortable with the material as the semester progressed. I can now definitely improve a lot about myself and the way that I guide workshops. I would like to dedicate more time in workshops to interactive problems that will help solidify concepts, and even promote more student-led discussion. During the workshops, I often found myself talking more than the students.

One method to improve communication during workshops is to conduct them like Socratic seminars. This would require students to read the workbook modules prior to the workshop time, and to participate in student-led discussion at the beginning of the session. The Peer Leader would be able to contribute clarifications and possibly highlight key points for each module, but the majority of the “presenting” would be done by the students in the workshop. This would put more responsibility on the students to come to workshop prepared, it will force students to participate, it will increase their understanding of the material because they will be explaining it to others, and it will encourage active learning which would solidify more of the topics. These Socratic seminars/discussions could last the first 20-30 minutes of each workshop, to give students sufficient time to prepare the points and understand the concept. Once the discussion is complete, the rest of the workshop could be spent doing practice problems. Beginning with the discussion will force students to speak and participate almost immediately.

I am incredibly grateful that I was part of the PLTL program this semester. I would not be continuing my path toward medical school had it not been for my own General Chemistry I Peer Leader. I needed the workshop and the Peer Leader’s availability during office hours to help me through my first science class in ten years! I’m glad that I was able to provide that same support and confidence to other students who didn’t think they would be able to make it through the course. I look forward to continuing to grow as a Peer Leader with this program and team.

Growing through Peer Leading

Ariana Ramirez

In my second semester as a Peer Leader, I felt that I underwent a lot of personal growth. Becoming more confident about how I was conducting my workshops and becoming more comfortable within the program contributed to this feeling. Last semester as a new Peer Leader, I found the environment to be somewhat hostile, and although I never spoke up about it, I was glad to see a positive change in the community for the Fall 2020 semester. From my perspective, the difference was the communication between the Peer Leaders within the program, which contributed to a more inclusive feeling than before. The program's positive environment supports the Peer Leaders and their willingness to contribute to its success.

Because of the pandemic, all of the workshops were online. Facilitating an online workshop came with many challenges; the largest one was being able to get the students to participate. I had a PowerPoint prepared for each workshop that I began with a short review. I asked questions about a problem in the module such as: What is the formula needed? What are the variables and units being used? What does this value represent? What is the value of the constants you need to solve problems in this module? This activity provided each student an opportunity to reflect and communicate understanding. I liked this approach as it forced the students to tell me about the module instead of waiting for me to tell them the answers. One issue that arose from this approach was that the same people were participating every time and were the only ones answering the questions. In order to remedy the problem, I would call on different students to ensure that they would participate and pay attention. After the review I would go through practice problems following the same approach; calling students by name to tell me what step was next and what values we were calculating. After together going through the practice problems, I created four questions and divided the students into breakout rooms.

In the breakout rooms another challenge was getting the students to work together and communicate. In order to have the students participate, I offered extra credit if each group put up a whiteboard in the breakout room and worked together on the board to find the answer. I had each student choose a color to identify their contributions then submit an image of the group's work. This method did work for the most part, but I still had groups who did not accept the offer for extra credit and did not participate.

I noticed that the workshops where students participated the most without needing much of an incentive were the workshops where we played a game or engaged in an activity.

The most successful game I implemented was Jeopardy. I had the students split up into groups to strategize, then brought them back to the main room to share solutions. A different group member had to respond to the question for every turn; this forced all members to complete the work and avoided the issue of having the same individuals participating. For example, if Group I had three attempts within the game to earn points, a different person from the team had to provide the final answer for each question; the group's answer would not be accepted if only one student gave the final answer for all three questions. Before giving me their final answer, they discussed the problem together, identified a strategy and worked towards a solution. The other groups were able to steal the point if the first group answered incorrectly, forcing all students to participate. Discussions about the answer to the problem did happen frequently, which was wonderful to witness. After receiving the answer and distributing points, I would then go through the problem where the students would ask further questions. I think the game was successful because the students were competitively challenged to strategize as individuals and as teams.

I struggled with forming a social bond with my workshop students. For example, I had a Monday and Wednesday workshop at the same time of day. I developed a stronger relationship with the students from the Wednesday workshop which I think contributed to the increased participation from that group of students. The Monday workshop lacked this social bonding and the engagement was lower for the workshop activities. I have concluded that making the students feel more comfortable during the workshop directly impacts their willingness to participate. I need to work on developing a stronger relationship by having more conversations with my students in order to be more relatable while still developing clear boundaries.

Comfort Zones

Paulina R. Torres

Comfort Zones. We all love them; they are safe and reliable. Routine. It's something we all count on, something that keeps our lives in steady rhythm. They make us feel safe. What happens when these are taken from us? We can either decide that all hope has been lost or we can adapt and rise to the occasion. I like to believe that this PLTL program chose the latter: The harder option. That the program was and is able to use this time to grow and flourish.

The spring 2020 semester was most definitely not conventional. The global pandemic seemed to have appeared out of nowhere like a sudden hurricane leaving us with practically

no time to prepare for the storm. Had we seen it coming, perhaps in the weeks leading up to the beginning of the semester as we went through training, we might have been able to sail more smoothly into this new normal. However, this was not the case. Virtual workshops were completely uncharted territory for the Peer Leading program on campus and they were something that each of us would have to learn to navigate, for the most part, on our own. I relied heavily on the personal interactions and relationships that I developed with my students during in-person workshops throughout the semester. I enjoyed watching them laugh - pitifully most times - at my terrible jokes. I admired watching their interest and curiosity in the subject grow, but most of all I relished those brief flickers of understanding. After struggling and grasping a concept, my on-screen students had visibly lit-up eyes.

These special, defining moments were harder to capture through a computer screen, and at times it was disheartening. Each week I prepared by searching through YouTube videos just to find one that the students might find intriguing about that week's topic. I tried to create a sense of camaraderie and healthy competition with Kahoot games and virtual activities, but I still could not shake the feeling that I was letting these students down. I would compare the workshop experience that I received to what they were now receiving and felt that it was my job to compensate for these unforeseen circumstances that had so evidently made it impossible to create anything with even a slight resemblance of an in-person setting. Nonetheless, I continued each week trying to uplift both their spirits and mine. Although I would always be anxious as I saw the review of my workshop arrive in my inbox, I was always pleasantly surprised at the comments that were so encouraging and reassuring. These reviews were a nice reminder that I was making a positive impact on these students, even if at times I felt that I was not.

The very core of the PLTL program is team-based learning, peers working together to solve problems. One adjustment I would like to encourage is a stronger sense of community among everyone in the program. It should be the responsibility not only of the individual person, but of the group as a whole, to ensure that everyone is comfortable with the topics to be facilitated. While activities are very useful for in-person workshops, they can be much more difficult, almost seemingly impossible, to conduct virtually. This being the case, I believe it would be quite beneficial to dedicate more time during training to going through practice problems for each topic, especially for the newer Peer Leaders who might be particularly hesitant to admit their need of assistance or review of concepts. Experienced Peer Leaders can agree that it can be difficult to organize the first semester of workshops: how to ensure you are covering the most important points, how to manage your time, how to gauge your quiz difficulty, etc. Therefore, I would like to propose that a few experienced Peer

Leaders conduct a mock workshop during training week to allow new members of PLTL to ease the jitters of their first workshop with peers.

Even Peer Leaders who have been in the program for several semesters learn something new each semester that pushes them to improve. For me, that was the importance of making very clear rules that I plan on implementing from the very first workshop. Every semester, I create a syllabus and read it to my students to guarantee a clear understanding of what is expected of them and what they should expect from me. This current semester, however, required the implementation of new rules in regard to online quizzes and homework submissions. It is extremely difficult for me to say “no” to a student asking to submit an assignment late, and this happened very often once online workshops began. To avoid this situation, I would like to include the guidelines for an online workshop in case the need for them should arise in future semesters. In the event that this upcoming semester should be online, I plan on investing some time researching more ways to keep virtual workshops engaging. It is my understanding that these virtual workshops are not so out of the ordinary for other universities with larger populations, so I would like to discuss them with those Peer Leaders who are more accustomed to the virtual platform. Since most of us are confined to the perimeters of our homes, I think it would be a great opportunity for our program to have virtual discussions and sessions with Peer Leaders from these universities before the beginning of the fall semester.

I am forever indebted to this program - the students, the Peer Leaders, and the professors. They have taught me and provided many opportunities for my growth and success. I cannot wait to see what is in store for the future of this program but remain really happy to be part of the Peer-Led Team.

B. Peer Leading Online

PLTL Reflection: Online Workshop for General Chemistry I

Mikayla Rodriguez

I completed my undergraduate academic career at UT Permian Basin in Odessa, Texas, as a double major in Chemistry and Biology with aspirations of continuing on to graduate school to pursue a career in biomedical scientific research. Interestingly, I transferred to UTPB from The University of Texas at El Paso (UTEP) where I took my first ever chemistry course

(General Chemistry I) in which the curriculum included the traditional lecture and laboratory components, but also included a third element- a workshop where lecture concepts were applied via activities and explorations. Consequently, I consider myself to be familiar with both sides of the General Chemistry PLTL programs being offered to students in West Texas, understanding the perspectives of both a student and a Peer Leader. Currently I serve as the PLTL Intern at UTPB where I oversee program tasks, including my own weekly workshop and Peer Leader responsibilities.

My first semester as a General Chemistry Peer Leader was Fall 2020, where I conducted a weekly online-only workshop. Because of this, I do not have previous experience with the face-to-face format of PLTL workshops. However, I believe that in my first semester as an online Leader I was able to make many noteworthy observations, which I believe will benefit me in the semesters to come. At the beginning of the semester, I had some anxieties regarding my first semester as a Peer Leader. From my own experiences with online education, I understand that remaining disciplined and engaged with remote learning does not come easily. Therefore, I feared that I would neither keep my students interested and intrigued with the material, nor meet the needs of my students, so unique in their own ways of thinking and learning. Despite these fears, I needed to help my students bridge appropriate learning connections.

As expected, I faced multiple obstacles throughout the semester but was able to learn from these moments. My first significant incident involved a young student who was seen multiple times on screen falling asleep during a workshop. This was highly distracting to other students and me. In response, I offered tips of my own to the students on how to better simulate a learning environment at home. Some of these included sitting at a proper table with a chair, wearing shoes and getting dressed, and having a glass of water and snack handy. These tips I picked up in my personal encounters with virtual learning. After exhausting other avenues, I had to ask the professor to intervene. Another persistent obstacle revolved around technical difficulties during a workshop. To reduce their occurrences, hours of planning and troubleshooting were necessary. In comparison to strictly face-to-face workshops, facilitating an online workshop required additional time from the Leader to convert all the module information and activities into an online-friendly, and engaging version.

In contrast to these hurdles, I find it important to note some of the benefits in running an online workshop and facilitating the online learning experience. It was highly advantageous to note the facial expression of my students on the screen of our group session. Because each camera focused on the students, which were all displayed on the same screen, I could note the facial expressions of my students when they were confused, frustrated, excited, bored, etc. If

I noticed boredom, I could direct the workshop to a different activity, or if I noticed confused expressions, I could revisit a topic or approach it another way until the students understood. I don't believe I could do this as effectively in a face-to-face workshop. Another advantage of the online workshop is that I had fewer absences from students who were required to quarantine for 14 days upon exposure to the COVID-19 virus. I noticed a trend among the face-to-face Peer-Leaders who expressed many concerns over the absences of students who were in quarantine. Mandatory quarantine did not impede the online students' ability to attend a workshop and had no impact on the style of their workshop. Face-to-face students under quarantine were expected to attend an online workshop, but some students lacked the discipline to find another workshop to attend.

One semester of peer leading has benefitted me as an individual in multiple ways. In working closely with faculty and planning workshop material/activities, I became more appreciative of the many hours of planning and organizing behind conducting even the most basic lessons and activities. Another positive experience I encountered as a Peer Leader is what I consider to be "break-through" moments, in which I was able to witness a student's confidence increase by overcoming a difficult problem. Lastly, I noticed an increase in my own confidence as a student and also as a public speaker - something I once struggled with like most other students.

The positive and negative experiences provided multiple lessons which I can take with me as a General Chemistry Peer Leader at UTPB. I acknowledge the many responsibilities of peer leading, but I also acknowledge the positive experiences and growth that come as a result. In the upcoming semester I plan on continuing an online format workshop for the General Chemistry I & II students at UTPB. I hope to help my students be successful, become more confident, and enjoy their academics as passionately as I do my own. I also hope to help more students find fascination in scientific concepts, and to encourage others to tackle the difficult concepts - as successful learning comes with the reward of self-gratification, excitement, and pride.

Learning as a First Semester Peer Leader

Lilian Quinones

Despite the ongoing pandemic and the previous semester being completely online, I am happy to say I learned a lot and have improved when it comes to interacting with students and overall workshop performance. Last semester I struggled with feeling comfortable during a workshop and tried to plan ahead as much as I could; this ended up being stressful and simply not as

efficient as spontaneous creativity. During the last half of the previous semester, I realized that I felt more comfortable when I did not plan as much and left room for improvisation. This semester I confirmed that, personally, not having an exact plan for my workshop gave me overall a lot more enjoyment when doing my work leading and guiding students. Now, rather than trying to script every activity in advance, I prepare a PowerPoint and a few activities for me to choose from, depending on my assessment of my students' understanding of the weekly material. For example, if they are comprehending the concept and are energetic, I incorporate a game such as Kahoot. On the other hand, if they are confused and not as engaged, I separate them into groups and switch between breakout rooms to help them better grasp the information.

The main thing I feel I am lacking, and this ties back to what I have learned from the peer leading experience, is that I need more variation when it comes to games and activities within my workshops. Over the last two semesters I have stuck with the activities I think work the best with my students, as well as the activities I am most comfortable coordinating. As a result, I struggle with incorporating new games that could work even better than the ones I typically use. I could improve my workshop environment by teaming up with other Peer Leaders to make new games and activities, as well as exchanging ideas to make our workshops more efficient. That way, we could potentially create new games for both online and in-person workshops for every module.

The main contribution I seek to make to the program is creating a safe space for students and Peer Leaders. Although the semester was online, I managed to connect with my students. In my opinion, I created a safer space where they were comfortable with reaching out regarding personal struggles that affected their performance. I believe many of us are coping with the ongoing pandemic issues, which is why I think it is essential for us to keep enforcing a safe space during our previews and workshops. That way, we can share ideas for improvement, solutions, and advice that will help us grow as a society of learners.

Learning Together in Isolation

Paulina Torres

Although I have been a General Chemistry Peer Leader for several semesters, I still am not immune to the jitters that come along with the start of each semester. After transitioning to an online learning setting in the spring of 2020, the fall 2020 semester felt particularly daunting as we were entirely online for the first time. I felt that I would not connect with my

students in the same way that I usually would in person. Ever since my first semester in this program, I feel compelled to spark real interest in chemistry topics and to support learning in my students. Nothing can compare to seeing my students' live reactions to my bad jokes or how their eyes light up when all the dots are finally connecting for them. However, this feeling is more difficult to achieve with a virtual platform. No matter how engaging and entertaining I tried to make workshop, some students remained stubbornly unenthusiastic. I was forced to face the fact that some things in life are unavoidable. For the most part, the majority of the students in my previous workshops had seemed quite engaged, or they at least pretended to be for my sake. Although difficult to accept, I had to realize that I can only do so much for my students and the rest they must do for themselves. It was challenging to encourage students to attend my office hours; however, I can completely understand how students would be less than excited to spend more time than necessary staring at their laptop screens. Nonetheless, I'm pleased to say that I seem to have connected with my students throughout the semester more than I had anticipated I would, as they all showed their appreciation during our last workshop. Moments like these always remind me why I joined the PLTL program and make me extremely grateful to have the opportunity to help students.

Last semester, I was self-conscious about whether my workshops were as effective as they would be in person. The workshop evaluations were immensely helpful in combating the imposter syndrome that I believe not only myself, but many fellow Peer Leaders faced. Imposter syndrome is a feeling of doubting your abilities and your achievements. I think many Peer Leaders come into the program feeling that it was a fluke that they were selected and that their knowledge is inadequate. This semester I was able to participate in Leader evaluations from the "other side." It was nice to be able to keep encouraging my peers in the way that I was encouraged last semester, and I hope to continue these evaluations this upcoming semester. The importance of these evaluations goes far beyond maintaining quality workshops. They also support and maintain the morale of the Peer Leaders especially in this somewhat disheartening virtual era. As I attended other Peer Leaders' workshops each week, I had opportunities to evaluate and to reflect on my own workshops. I feel that one fault many experienced Peer Leaders tend to develop is a repetitive workshop routine. This is not always a bad thing, but it is great to constantly introduce different activities into workshops to keep everyone routinely attentive. My workshops often largely consist of practice problems and occasionally a good exploration demonstration. This coming semester I would like to challenge myself to stray a little from the workshop routine I have developed over the years and allow myself to try different approaches that might prove beneficial to students.

As I enter the upcoming semester as Assistant Head Peer Leader, I reflect on my time in the program and think about everything I have learned and how much I have grown. It is difficult to grasp that I am now one of the more experienced Peer Leaders in the program, because it feels like only yesterday I was the new girl wondering how I even managed to become a member of this amazing program. This semester, I hope to be a mentor to both the experienced and new Peer Leaders. I hope to inspire my fellow Peer Leaders to challenge themselves constantly and to realize their potential in the same way that my Peer Leaders inspired me as a student in general chemistry and as a first-semester Peer Leader.

Online is Not the Same: Facilitating Online Workshop

Sophia Adame

This semester was definitely something out of the ordinary, yet I am very grateful for this experience and look forward to continuing to make the best of this odd situation. I consider myself an outgoing conversationalist, therefore I thought leading a group of students would be easy. I realized that yes, my social skills were a big plus; however, there is so much more to leading a workshop. It's not only about being a good presenter but being a good listener and finding a balance between a structured, yet fun and interactive learning space. I learned that not all workshops function the same and you need to approach them differently to provide the best experience for the students. For example, my Monday students were significantly more active workshop participants than my Friday students. I could let my guard down and only call on those few (about two students) who didn't talk as much to make sure they were paying attention. On the other hand, for the Friday group I had to be more alert and make sure to call on everyone to check that they were understanding the material. I observed that previously used activities for on-campus workshops were not effective online. I realized that the students preferred to work out problems instead of participating in learning games. I attempted several games and the only ones I received positive feedback on were using Kahoots and Quizizzs.

I also learned how important it is to conduct surveys of students to see how they are responding to the workshop and understand what they like/dislike. I conducted two surveys during the Fall 2020 semester and will definitely be doing more next semester, maybe one after each Hour Examination. This semester I lacked enough activities that the students actually enjoyed. This winter break I will brainstorm some new ones to implement next semester.

Although I felt very connected with my students this semester, I had very few of the “reflection sessions” we had in Preview (the twice-weekly meetings with the professors) that were supposed to be later implemented in the workshop. I planned on having one at the end of a workshop every other week, but my workshops usually ran longer, and I didn’t feel that it was fair to keep my students past two hours. For next semester I will definitely have a designated time for this; most likely at the beginning of the workshop, because yes, understanding chemistry is important but so is each student’s mental health. I also want to give more advice to my students on how to make the best of this unusual situation we’re living in and share tips that have helped me, such as separating my “me time” space and my “work time” space.

I am also currently helping translate the Workbook into Spanish. I am very passionate about this project because this could be so beneficial for many of our UTEP students. I hope that by the time I graduate there is an official Workbook in Spanish. Because of the pandemic all the material is online, and I think a social media platform (maybe an Instagram) could have a positive impact on the program. On such a platform, students can see important announcements from the professors and Peer Leaders about upcoming exams, assignments, review sessions, and other opportunities. I had a blast this semester and look forward to continuing to grow alongside the program.

Reflections on Peer Leading During the Pandemic

Vanessa Rodriguez

As a student, the shift to virtual learning was extensive and caused great distress for me. It was difficult to adjust to being on the computer for long periods of time and many of my professors were unwilling to work with students, despite knowing that the current state of the world took a toll on all of us. I often found myself engulfed in material and assignments and it was often stressful to balance work and homelife. Peer leading, however, became an outlet for me as I found that teaching and guiding students with chemistry put me at ease. Even when I was stressed about all of my studying or about homework after a long shift, I was always thrilled to surrender my stress and engage with my students. I was blessed with students that were mostly kind, participated in the workshop, and were very attentive to what I had to say. They often internalized the advice I would give them about tackling certain problems, studying, or passing their exams, which I greatly appreciated. Every time I saw

students understand a concept they had previously struggled with I was filled with joy as I knew that I was indeed guiding them into success.

While this year I did not peer lead by myself, I was able to shadow an experienced Peer Leader. I helped facilitate workshops and felt very much like the rest of the Peer Leaders. I talked to my students and went over modules, helped them with problems, planned activities and graded their assignments. I did not feel like I missed out and have instead learned immensely about workshop strategies, as well as what I will incorporate and what I will change.

While conducting a workshop, I learned that activities and explanations will not always go as planned. There will be times when I may have the perfect scenario in my head, but it may not play out as I imagined, and I will have to improvise or even disregard it all together. When conducting activities, there were times when I would encounter internet problems or there would be times when we would finish earlier or later than expected. There would be times when my explanation would make complete sense to me, but not all students would get what I was trying to say. These experiences helped me learn that there are many types of learners and ways to approach concepts. Just because I understand or do something a specific way, does not mean everyone will get it or that it is the only correct way. I have learned different approaches and perspectives from my students which I have taken note of so that I can offer future students different ways to tackle a problem and/or concept. They can use the one that is best for them.

I learned I will not always have the correct answer. I will sometimes start working on the wrong problem, fail to understand what the problem is asking, or doubt whether my explanations are correct. Prior to Peer Leading, I hated being wrong or admitting that I was wrong. I was the type of person to argue that my answer or reasoning was correct, even when I knew there was a possibility that I might be mistaken. This position has taught me to be open minded, to accept when I am wrong, and to learn from my mistakes. I have also learned that there are times when there is more than one correct solution. Therefore, I must be open to letting others speak so that *I* can learn. I joined this program to teach and influence others, but the exact opposite has happened, and I am extremely thankful.

The Role of the Peer Leader in Times of COVID-19

Azul Silveyra

Life is full of challenges, but it is up to us how we cope with them. These past few months have undoubtedly been hard for everyone. Student attendance at every workshop was

something to celebrate, especially towards the end of the semester. I always tried to cheer them up, but maybe a little too much. Positive reinforcement is key to success in any learning environment: A clap! Or a yay! can change the mood. This encouragement leaves space for students to share more, participate more, and feel this is a non-judgmental zone where one can make mistakes and still learn.

Before the semester started, I sent a survey to ask questions such as the workshop student's major, classification, nickname, professional goals, workshop expectations, and technology accessibility. I found this survey quite informative as I realized I had a transgender student who liked to be addressed a certain way. I was glad I knew this ahead of time and would highly suggest for all Peer Leaders to use this survey to get to know their students. During the first week of school, I opened a discussion board on Blackboard for students to introduce themselves and get to know each other. Students were motivated to participate in this as it was part of their participation grade. There was a kind and respectful flow of comments; students followed the netiquette guidelines provided.

During the Fall 2020 semester I felt I grew the most, despite the ups and downs I experienced. Typically, the first workshop held is often the least successful, but this was not the case for me. It was not a lack of preparation, the issue was my internet connection, drawing tablet, and computer. Technology backfired on me. If we had been person to person, this would have never happened. Adding to my stress, an experienced Peer Leader came into my workshop to do an observation. Things got out of hand. However, the workshop students were understanding and took the lead. They participated more by using chat and the drawing tools. The workshop certainly did not turn out as I planned; it was even better. I thought it was a complete mess because I lost some control, but I realized students attend a workshop to learn – and they did. Although I saw a loss, I saw a win as well.

Reviewing the semester and the discussions with other Peer Leaders, I think I was overly lenient with my students. My syllabus was strict and straightforward, but I made some changes that affected the course of the workshop, for instance, the use of cameras. I clearly stated in the syllabus that the use of a camera was mandatory, but as the semester went by, students stopped turning on the cameras. The use of cameras helped me to observe who was lost, distracted, or when there were no questions. I discussed this issue, yet students responded with many excuses. I was too tolerant, but next semester I will not repeat this mistake. To ensure students' engagement, I would always call on people - using an online random name picker - for them to read, work a problem out, or answer questions related to the material. There were things I still insisted upon solely in the best interest of the students. Students did not like having a quiz about the weekly module, but I thought it was the only

way for students to become familiar with the material. This semester I also continued with the group presentations.

The idea of group presentations arose when I was a student. My Peer Leader had us present a topic in a workshop. Based on this idea, I organized the groups according to their interests mentioned during icebreakers in the first workshop, and the discussion blog and their chemistry skills. I came up with three groups, and each group was responsible for a module. They had to make a presentation, design an activity/game, answer my questions and their classmates' questions. One student did not like the idea because he wanted someone experienced to go through the material rather than a student whose only goal was to pass the class. I understood his stance, yet I wanted them to challenge themselves and make them realize what they were capable of accomplishing. This student made a remarkable presentation. I could tell he understood the material quite well; he even explained a problem related to his area of study, engineering. I was proud of the outcome as I felt students were confident about the topic they presented. A Peer Leader came to observe the first group presentation and I received positive feedback. The comments from my peer motivated me to continue with this activity.

For Peer Leaders, one of the most important things is to listen; listen to your students and be there for them when they have questions. One student approached me and told me about his issues. I had never had a student who trusted me this much. I listened to what the student had to say and offered a little advice. The student was thankful for the time I took to listen. Listening to your students is a great way to get to know them and to help them.

During workshop time, we can help our students by frequently reminding them we are here for them to improve their experience in the course. These are the little and simple things they appreciate. Every once in a while, especially before exams, I share inspiring quotes to encourage them to continue to work hard. I believe in the value of small things and actions.

I always like for the last quiz to be a feedback survey concerning the workshop. I asked if there was any advice for future students taking this course, to which students answered the following:

- Show up to every class and try your best. You don't need to be perfect, but you do need to give it your best.
- Go to lecture and workshop! They complement each other.
- My advice to future students is to try to get their work done the day that it is assigned. I procrastinated way too much, and even now I type this last minute. I can tell anyone that I am a bit worried that I may not finish this on time.

- Be physically and mentally prepared for this class. It is long, you'll be sitting down for a while, and it is a lot of information.
- The only advice that I would give is to study hard and be committed to the class.
- Do the work and pay attention. This class helps with the exams so much!
- To all the future students taking part in virtual classes, I would highly recommend purchasing a planner or notebook so you can write down all of your assignments and due dates for homework, projects, or exams. It's very easy to forget what is due, so a planner can help you out significantly.
- Study on your own. Do not rely solely on workshops.
- Make sure to study the formulas given, make flashcards to memorize them for the day of the exam. Also, attend the workshop because that is where you get to ask questions and practice problems.
- I would tell them to stay on track, study, and don't get behind because the semester goes by pretty fast, and you don't want to get lost, especially in a course like this.

I wanted to share these tips with the upcoming students for them to succeed in this course and let them know we are going to get through this together.

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