

Implementation and evaluation of a learner-driven leadership initiative for pharmacy students and pharmacy residents

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Abstract

Introduction: Leadership training is a crucial component of the pharmacy education curriculum. The Accreditation Council for Pharmacy Education (ACPE) emphasizes and encourages the use of different leadership initiatives, and universities employ tactics with varying levels of success to implement these initiatives. "Leadership theory" debates if leadership can be learned or if it is a natural-born skill. This article explores learned leadership and describes a small study deployed to different levels of pharmacy learners to foster leadership confidence and self-awareness. **Educational Context and Methods:** Second- and third-year didactic students in a leadership elective, voluntary fourth-year Advanced Pharmacy Practice Experience (APPE) students on an ambulatory care rotation, and first postgraduate year (PGY1) pharmacy residents were included in this initiative. Each cohort facilitated a leadership book club discussion and completed professional development activities over the course of their experience. Learners' perspectives on leadership were surveyed utilizing a pre-post survey study, administered prior to beginning the initiative and after completing the initiative. **Findings and Discussion:** Results demonstrated learners' perceived confidence and self-awareness in their leadership skills increased from pre-survey to post-survey. Evaluation of qualitative responses exhibited that participants found value in adding more leadership development to their pharmacy training. Most participants noted leadership book discussion facilitation as the most valuable part of the initiative and posited they would utilize skills gained through these discussions nearly every day in their careers. Results suggest PGY1 pharmacy residents showed the most significant increase in their scores from pre- to post-study, while didactic students showed the least significant increase. **Implications:** Our findings suggest learner-driven leadership initiatives, specifically learner-facilitated book club discussions, are beneficial to incorporate into both didactic and experiential coursework. Implementation of these discussions could be applied in many aspects of the curriculum with minimal resources and a reasonable expectation of perceived benefit to student leadership development.

Keywords: leadership; ambulatory care; didactics; experiential education; survey; professional development; behavioral theory

Introduction

Leadership training is an important part of the pharmacy education curriculum and essential for the upward mobility of pharmacists over the course of their careers. The Accreditation Council for Pharmacy Education (ACPE) sets standards (Standards 2016) for colleges and schools of pharmacy to develop and maintain a Doctor of Pharmacy (PharmD) curriculum.¹ The Standards 2016 emphasize the need for student leadership development initiatives. Standard 4 (Personal and Professional Development) encourages equipping pharmacy graduates with self-awareness, leadership, innovation, and professionalism skills. In Standard 9 (Organizational Culture), colleges are encouraged to promote self-directed behaviors that foster lifelong learning, professionalism, and leadership. There have been initiatives to increase leadership training in pharmacy education, but those initiatives may not have been consistently applied throughout PharmD curricula.

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Reviews have demonstrated varied approaches to pharmacy leadership education, but little evidence of longitudinal, application-based leadership development exists.² This study aimed to incorporate leadership training across a PharmD curriculum and during post-graduate training to study its impact on learners. Universities employ many different tactics to target these initiatives and report varying levels of success. In her 2005 report published in the American Journal of Health System Pharmacy, Sara White suggested a need for more leadership development in the pharmacy curriculum as she predicted a significant gap in pharmacy leadership due to shifts in the work force composition.³

A survey conducted in 2004 suggested pharmacy students were less interested in pursuing leadership positions and more focused on promoting work-life balance. It also suggested many pharmacy leaders were interested in leaving their positions, predicting a resulting shortage in pharmacy leadership. These findings corresponded with an increased focus on incorporating leadership education within pharmacy curricula over the following decade.⁴ Employers noted increased difficulty filling leadership positions in that time; however, a follow-up study conducted by White and colleagues seven years after the 2005 study noted increased student enthusiasm for pursuing leadership roles and more students interested in leadership

positions.⁵ This suggests the initiatives pursued in pharmacy academia effectively drove student interest and the development of leadership traits as colleges took different approaches to find best practices.

The methods by which leadership education is undertaken and the leadership topics covered are varied. Chesnut R, et al noted positive student feedback in terms of satisfaction, perceived benefit, and improvement in student leadership ability following a co-curricular leadership initiative implemented with first-, second-, and third-year pharmacy students.⁶ Guest speakers, small group discussions, and student mentorship were key focuses of this initiative.⁶ Wilson JE et al. further demonstrated the value of implementing a leadership-focused Advanced Pharmacy Practice Experience (APPE), with a greater focus on applying skills learned within the didactic curriculum and development of experiential activities as opposed to lectures.⁷ While both strategies noted success, additional methods exist to engage students with readily available leadership material.

Developmental book clubs have been successfully implemented into pharmacy education, in residency training, and into faculty professional development.^{8,9,10} Thus, this study's authors saw a need to increase knowledge of leadership theories and increase consistent opportunities to practice leadership throughout the PharmD curriculum and postgraduate training. The purpose of this study was to develop more leadership opportunities and to assess their perceived benefit for pharmacy learners through didactic and experiential training. This study serves to create the framework for implementing leadership and professional development initiatives within didactic coursework, during APPE rotations, and during first postgraduate year (PGY1) residency training.

Educational Contact and Methods

The instructional team for implementing trial methods was comprised of two faculty members and one second postgraduate year (PGY2) resident. A leadership initiative series was completed with second and third-year didactic students during a leadership elective, fourth-year students on APPE rotations, and PGY1 pharmacy residents (Table 1).

Each cohort participated in a leadership book club series and was required to present and/or facilitate discussion over the book they read (Figure 1). The "see one, do one, teach one" method was utilized for second- and third-year learners, with participants first watching investigators lead a leadership book club discussion in a hybrid in-person/virtual synchronous session, then leading their own presentation or discussion, as well as participating in a discussion led by their peers and providing formative feedback.¹¹ Learners at all levels had a choice of three leadership books to pick from: *Crucial Conversations: Tools for talking when stakes are high* (2nd ed.), *Who moved my cheese? An amazing way to deal with change*

in your work and in your life, and *The 5 Dysfunctions of a Team: A Leadership Fable*.^{12,13,14} Second- and third-year students completing an elective leadership course were placed in two groups, each of whom led an interactive learning session after reading an assigned book.

Fourth-year pharmacy students scheduled to complete a traditional ambulatory care APPE were provided the opportunity to opt for an ambulatory care experience with a focus on leadership. Students who opted into the leadership initiative series were required to complete a leadership book club discussion with preceptors, residents, or learners on-site, and to conduct one additional professional development opportunity (Figure 2). Professional development opportunities included opportunities to complete a postgraduate preparatory Question and Answer Session (Q & A), a Curriculum Vitae (CV) workshop, or a professional organization & advocacy discussion. PGY1 learners were required to facilitate a leadership book club discussion with pharmacy residents, preceptors, and medical residents on-site, and complete practice management sessions and leadership development implemented into required didactic sessions as part of their residency curriculum.

The instructors measured levels of engagement and confidence by learner groups via questionnaire responses recorded prior to the initiative and after the initiative's completion. Pre-surveys were completed by APPE students on the first day of their rotation, and the other arms completed their pre-surveys in January at the start of the academic semester. Each arm completed their post survey in May, near the end of their academic year. The questions were created by the investigators after reading each of the three leadership books for content appropriateness and question development (). Questions were reviewed by members of the experiential site leadership team for relevance, with recommendations for the consolidation of duplicative questions incorporated into the final questionnaire.

The questionnaire utilized a mixed-method quantitative / qualitative approach, with quantitative questions employing a five-point Likert scale administered pre- and post-survey and qualitative questions using open-ended responses administered post-survey. Questionnaires were intentionally brief (estimated time to completion 5-10 minutes) to reduce question fatigue and drive increased thoughtfulness of open-ended responses.

Hard copy questionnaires were completed by all participants pre- and post-intervention, which were then collected, de-identified and aggregated. Quantitative data was analyzed using descriptive analysis to compare mean response rates in each cohort for pre- and post-survey questionnaire results, first for all responses combined, and then of each of the three cohorts (Didactic, APPE, PGY1) separately. Qualitative data underwent narrative analysis by the study authors to identify

learner themes and to drive the development of future leadership series activities.

Findings and Discussion

Seventeen students completed the pre- and post-survey questionnaire. When considering quantitative responses, the instructors expected that after learners gained exposure to leadership topics, learners' level of agreement with statements related to leadership abilities, application, and importance would increase from pre-survey to post-survey. Results demonstrated increases in learners' perceived confidence in leadership abilities, as well as application and importance (Figure 3). Negligible change was seen between pre- and post-survey on questions addressing opportunities to utilize leadership skills during the course of pharmacy training, importance of being a leader to be a pharmacist, and a commitment to practice leadership as a pharmacist.

Instructors observed differences in the benefits perceived by individual cohorts. Results demonstrate PGY1 pharmacy residents showed the greatest increase in their scores from pre- to post-survey on questions addressing confidence in leadership skills, identification of personal strengths and weaknesses, ability to lead a difficult conversation, and ability to collaborate with a team to achieve a shared goal (Figure 4). Didactic students demonstrated the smallest increase in their scores from pre- to post-survey as a cohort. It would be beneficial for future studies to further investigate the differing degrees of benefit to each cohort.

Open-ended responses were not completed by all respondents and were reviewed by authors prior to addition in this study. Any responses that did not add to the discussion were omitted from the data set. Responses were analyzed, and identified themes around the value of leadership education, book club discussion success, and usefulness of the material to everyday situations (Table 3). Participants found value in adding more leadership focused activities into their professional education. Many participants noted the leadership book discussions as the most valuable part of the initiative. Open-ended responses also identified trends toward learner appreciation that they would utilize leadership skills gained through this initiative nearly every day in their career.

Instructors identified that many students lacked confidence in contributing to or facilitating leadership discussions at the start of the initiative. Implementation of the "see one, do one, teach one" model of instruction demonstrated growth in learner confidence throughout the duration of the study.¹¹ The impact of this study extended beyond pharmacy learners, as the graduate medical education residency program conducted at the experiential site implemented a similar leadership initiative in medical resident education after the demonstration of the initiative by the instructors and learners on site.

This initiative was in agreement with Chesnut R, et al's article showing students' feedback was positive in terms of satisfaction, perceived benefit, and direct advancement in their ability to be leaders.⁶ Wilson JE, et al's article showcased the value of implementing a strong leadership APPE, and this study complements this value by incorporating a leadership initiative into a solely clinical rotation.⁷ The results of this study support those authors' findings that there is learner perceived value in leadership development activities. This study also suggests the same leadership initiative can be effective at different levels of the pharmacy learner continuum, regardless of previous experience.

There were several limitations to this survey. While varying levels of learners provided heterogeneity to the project, the sample size was small (n=17). This study was also conducted at one experiential site, and one didactic site in accordance with two organizations, and program participants had varied amounts of time to reflect on the impact of the leadership initiative secondary to the time of the year the participant started. The arms of the study varied in sample size, with each learner group incorporating slightly different initiatives in addition to the leadership book discussion, in order to fit within their curriculum or level of training. Lastly, while second- and third-year students and PGY1 residents were required to participate in this study when enrolled in the leadership elective course and residency program, APPE students had the opportunity to opt into the initiative or focus solely on the clinical provision of ambulatory care. This may have affected results as those higher performing students may have self-enrolled, resulting in a selection bias. Observations also suggested APPE learners nearing the end of their academic year were less likely to participate in the initiative. This initiative was simple to facilitate but required coordination of schedules to allow for both instructors and discussion participants to be present and foster rich discussion.

Implications

Though this initiative had a small sample size, it was straightforward for instructors to implement and had a benefit on students' perceived leadership ability. Participants shared perceived value from the different opportunities for book facilitation and professional development activities, including opportunities to practice and strengthen skills, become more self-aware of strengths and weaknesses relating to leadership, and discuss different topics one should focus on to be an effective leader. Our findings suggest it may be beneficial to incorporate sections of leadership training, specifically book club discussions with leadership materials, into didactic work, APPE experiences, and residency training. This could be applied nearly anywhere in the pharmacy education curriculum, or any healthcare provider curriculum, with minimal resources and a reasonable expectation of perceived benefit to student leadership development.

Conflict of Interest: We declare no conflicts of interest or financial interests that the authors or members of their immediate families have in any product or service discussed in the manuscript, including grants (pending or received), employment, gifts, stock holdings or options, honoraria, consultancies, expert testimony, patents, and royalties.

Disclosure(s): No Financial Disclosures

Disclaimer: The statements, opinions, and data contained in all publications are those of the authors.

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Table 1: Participant Demographics

Demographic	N=17
Didactic student	(7) 41.2%
APPE student	(7) 41.2%
PGY1 resident	(3) 17.6%
Male	(5) 29.4%
Female	(12) 70.6%
Traditional Student	(12) 70.6%
Non - traditional student*	(5) 29.4%

Figure 1: Cohorts



Figure 2: Initiative Flow Diagram

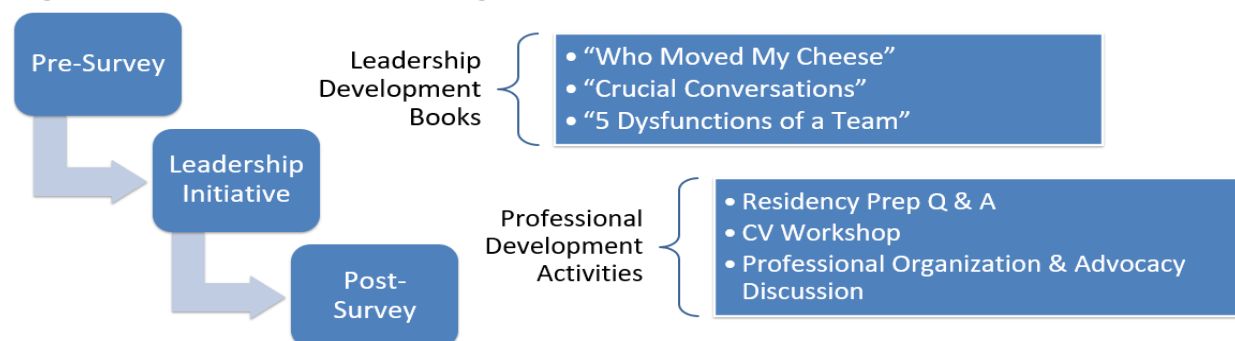


Table 2: Survey Questions

<u>Please rate your level of agreeance with the below statements. (Conducted pre- and post-survey)</u>
1. I am confident in my leadership skills.
2. I have had the opportunity to utilize my leadership skills during the course of my pharmacy training.
3. It is important to be a leader to be a pharmacist.
4. As a pharmacist I will practice leadership.
5. I am able to identify strengths and weakness in my leadership.
6. I feel confident in my ability to communicate with a team.
7. I feel confident in my ability to enact change in a team.
8. I feel confident in my ability to lead a difficult conversation.
9. I am confident in my ability to gain a team member's, colleague's, or patient's trust.
10. I am confident in my ability to collaborate with a team to achieve a shared goal.
<u>Open Ended Response (Conducted post-survey only)</u>
11. Do you think there is value in adding leadership training more often in pharmacy education?
12. Reflect on your semester/APPE year/PGY1 year. When were you able to utilize your leadership skills?
13. What activity in this course/initiative was most valuable to you?

Figure 3: Aggregate Survey Results

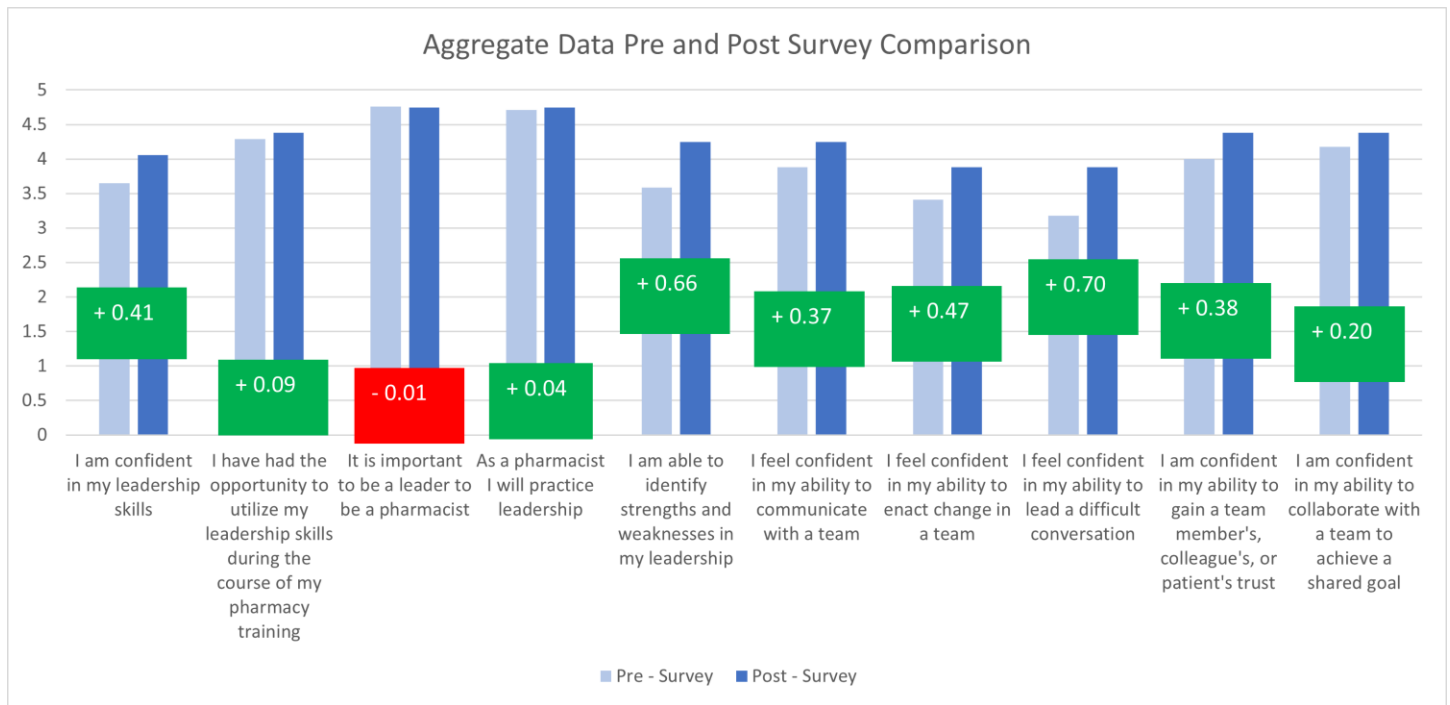


Figure 4: Survey Results per Cohort

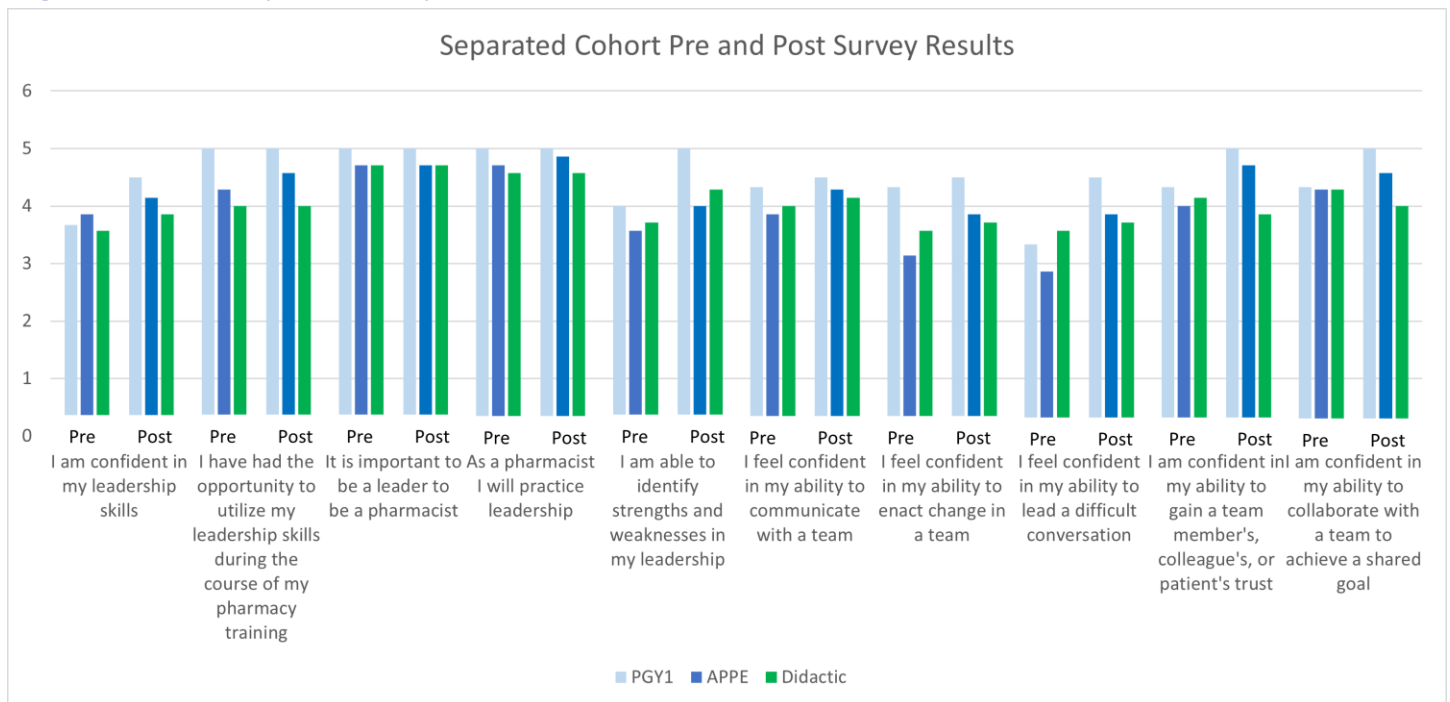


Table 3: Learner Open-ended Responses

Do you think there is value in adding leadership training more often in pharmacy education?
<ul style="list-style-type: none"> • Yes, I think there is a lot of value in adding leadership training more often in pharmacy education. I find that the only way to truly build leadership skills is through practice. Therefore, if leadership training occurred more often, the lesson learned could be applied and practiced earlier and therefore strengthened and optimized earlier in a pharmacy student/pharmacist's career. • I believe there is value in adding leadership training into pharmacy education. Pharmacists are leaders and not everyone is born a leader. I believe it is very important to understand how to communicate well with your patients/co-workers, taking initiative when needed, and being confident in different situations. Throughout my APPE year, I have learned to not only be confident in my recommendations but how to communicate effectively. Enrolling in the elective leadership track was helpful in regards to being mindful of my strengths and weaknesses. • Yes. Leadership is a vital characteristic as a pharmacist, as we will be leading a team. • I think it is always beneficial to have more leadership training; it certainly wouldn't hurt! I think it would give students increased exposure and experience that will help them grow to be leaders in their own way. • Yes, there is value. As a pharmacist, you are a leader. Adding additional training to help pharmacists be better leaders can lead to a better workflow and work experience for everyone. • Yes, I believe there is value in adding leadership training more often throughout pharmacy education. These trainings hone in on skills such as collaboration, communication, and establishing trust, all of which are vital in both little L and big L leadership roles. • Yes, I think all pharmacists would benefit from leadership training. Pharmacists are also working on some sort of team and will usually have some sort of leadership role. I wish there would have been more opportunities during pharmacy school. • Yes, I do think there is value in adding leadership training more often in pharmacy. No matter what setting, pharmacists have some degree of leadership responsibilities. If we can't lead those around us, I believe that we are unable to practice to the best of our ability. Leadership and strengthening leadership skills are very important.
Reflect on your semester/ APPE year/ PGY1 year. When were you able to utilize your leadership skills?
<ul style="list-style-type: none"> • I was able to utilize leadership skills during my community pharmacy rotations. In addition, I was able to utilize some leadership during one of my rotations where I was working with pharmacy students (P2 and P3). I believe that I will be able to practice and use leadership skills more within my residency year. • During my APPE year I was able to utilize my leadership skills in one way or another on each rotation, whether it was in a conversation with a patient, working with my peers, serving as a resource for younger students, or participating as an active member of the healthcare team. • While collaborating with other students/peers on projects I was able to use my skills to effectively communicate and participate in the projects. • I was able to utilize leadership skills when it came to talking to providers and discussing therapeutic recommendations during rounds. It took some learning and growing, but over time this got easier for me. • During APPE year, I received a lot of feedback. I think of constructive feedback as a tool to grow and become a better person. I am able to identify my professional strengths and weaknesses and am able to appropriately modify them in an appropriate manner. I believe throughout all of APPE year I was able to utilize my

leadership skills by communicating effectively, being supportive and encouraging, and embracing that every institution is different. Each rotation handled certain aspects differently (TPN, vancomycin dosing, etc.) and I was able to adjust to change quickly.

- I think there have been two main areas which I was able to consistently apply my leadership skills. The first is with patients. I fostered discussions with patients regarding their healthcare and then presented a finalized plan following these discussions and answered their questions. The second time I used my leadership skills was every month when meeting a new team. I found utilizing leadership skills like showing initiative, direct communication, and a willingness to work with others boded well in gaining the trust of my preceptor and new coworkers.
- I use my leadership skills virtually every day. I do this when I am advocating for patients, working on projects, and during team discussions.

What activity in this course/ initiative was most valuable to you?

- I think the leadership book and the discussion I led regarding the book were the most valuable. I gained knowledge not only from the book itself but also from the insight of others in the discussion.
- Being able to reflect on all the different opportunities I have encountered throughout my APPE year is very rewarding. Partaking in the leadership track that Manchester provides as an elective has been most valuable to me. I have utilized the different aspects of leadership we have learned in class and used them all throughout APPE year
- I found discussing CV's during a professional development session the most helpful.
- Reading through the leadership book and pulling out important lessons was very valuable for me!
- Reading the book was very helpful. I was able to identify things I already do that help to have crucial conversations, but I was also able to learn new skills to help my conversation skills even more.
- I found reading *Who Moved My Cheese?* and leading a discussion about the themes of the book to be most valuable to me. Participating in discussions like this one allows me to hear the insights and perspectives of others, which I often learn something new from.
- I really enjoyed reading the book and the book discussion. After reading the book, I felt like there were certain characteristics that were best in a leader. I really appreciated hearing and learning during the book discussion with another student who identified with opposing leadership characteristics. I also learned the benefits and downfalls of the different types of leadership styles during discussions.
- I appreciated having time built into the didactic schedule to strengthen my leadership skills. I enjoyed the readings and also presenting and having discussions with my fellow pharmacists on the different areas of being a leader.
- I found the leadership book facilitation the most valuable.