RESEARCH ARTICLE

Assessing Student Perceptions of Blended and Online Learning Courses in Pharmacoeconomics, Management, and Leadership

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Objective: Blended learning combines traditional face-to-face education with online instruction. This learner-centered approach has been shown to improve student engagement, critical thinking, and performance outcomes. The objective of this study was to assess and trend student pharmacist perceptions of blended and online learning used to teach pharmacy management, leadership, and economics within a Pharm.D. curriculum.

Methods: Qualitative methods were employed using in-depth, semi-structured interviews. Second- and third-year student pharmacists were recruited by purposeful and snowball sampling and interviewed to a point of saturation. The interview guide was based on social cognitive theory (SCT). Themes identified through initial deductive thematic analysis were categorized by the three domains of SCT: cognitive, behavioral, and environmental factors. The coding team additionally analyzed the transcripts using inductive thematic analysis to ensure no themes outside of SCT were missed.

Results: Twenty students were interviewed. Themes reveal perceptions that blended learning facilitated greater understanding of course material, increased motivation among learners, provided more flexibility in workload completion, and was a more enjoyable way to learn compared to traditional, didactic instruction. Furthermore, blended learning offered additional distinct advantages over traditional and online-only pedagogies.

Conclusion: Student pharmacists perceive blended and online learning positively and acceptable for the delivery of a pharmacy course on management, leadership, and economics over traditional didactic instruction. Blended learning may enhance innovation, leadership, management, and economics content delivery and the student learning experience.

Keywords: blended learning, social cognitive theory, online learning

INTRODUCTION

Teaching pharmacy social, administrative, and behavioral sciences within Doctor of Pharmacy (Pharm.D.) curricula can be challenging given that students are generally less engaged in content, prioritize coursework lower than more clinically based courses, and perceive a lack of applicability to entry-level pharmacy practice. However, few solutions to this issue have been suggested over the past several decades, and even fewer explored and reported in the published literature. At the same time, the Accreditation Council for Pharmacy Education (ACPE) has only increased its calls for strengthening the focus on these items by colleges of pharmacy (ACPE Standard 4).

Despite advancements in higher education instructional strategies and technology, the majority of content in higher education is still delivered via the traditional lecture method. While the traditional model of didactic, instructor-focused, classroom education remains dominant, this model may lead to student disengagement and low retention of material especially when intrinsic motivation to learn is low. As the educational landscape and population of adult learners evolve, so does the need for innovative and relevant instructional methods. For instance, technology has been incorporated into many innovative instructional methods across multiple levels of education to enrich student engagement and customize the learning experience including use of web-based discussion boards, online reading materials, asynchronous modules, videos, interactive vignettes, virtual patients, social media, and smart phones.

As teaching and learning practices continue to evolve, online learning has increasingly been incorporated throughout higher education due to advancements in technology and to meet learner preferences and expectations. However, due to low course completion rates and the importance of student engagement with instructors and peers, online instruction
alone is not expected to be the most effective educational strategy.\textsuperscript{15-19} According to a 2015 study, online course completion rates ranged from 0.7% to 52.1% (median 12.6%) and represented a 10-40% higher dropout rate compared to face-to-face courses.\textsuperscript{17,19} There are, however, certain elements of online learning that may complement traditional, didactic instruction.\textsuperscript{10} For example, blended learning (BL) is a learner-centered approach which combines live, in-class instruction with technology-based home study.\textsuperscript{20,21} BL has been shown to enhance student engagement, enjoyment, self-efficacy, critical thinking, and performance outcomes.\textsuperscript{22-29} Though there exists evidence on the use of BL in varying courses and levels of education, no research has been published regarding its use in postgraduate pharmacy management, leadership, or economics courses.

The objective of this study was to assess and trend student pharmacist perceptions of blended and online learning used to teach pharmacy management, leadership, and economics within a Pharm.D. curriculum.

METHODS

The theoretical framework used for this study was Bandura’s social cognitive theory (SCT).\textsuperscript{30} SCT emphasizes three reciprocal factors that determine human motivation, learning, and performance: cognitive, behavioral, and environmental factors (Figure 1). An individual’s self-regulation, confidence, and practice both influence and are influenced by their personal knowledge, beliefs, and attitudes as well as their physical and social learning environment.\textsuperscript{32-34} These elements continually affect the learning process and are not independent of each other; they interact dynamically.

SCT has been studied across a variety of disciplines including psychology, education, business, and health.\textsuperscript{31} This theory was selected as the underlying theoretical basis for the study because it posits that knowledge acquisition is directly related to observing others, which informs the learner’s perception of self-efficacy or personal belief in their ability to complete the learned behavior correctly, a core component of SCT.\textsuperscript{30,32} This observation may take many forms beyond the instructor at the podium, including via direct observation, media (e.g., videos, podcasts, articles), or stories.\textsuperscript{30}

The traditional classroom lecture format in U.S. colleges of pharmacy is didactic direct instruction about patients.\textsuperscript{9} Self-efficacy in therapeutics-based courses may be more readily achieved by student pharmacists through those observations made within the classroom and their direct comparisons to a plethora of patient-related experiences including introductory pharmacy practice experiences, internships, other classes, media, and social interactions with other students, preceptor, and faculty about patient care. In contrast, topics related to leadership and management may presumably be less tangible to the students as they are observed less often, and therefore traditional forms of teaching may be less effective. Core to SCT is the triadic reciprocal causation system which connects person (i.e., cognition), behavior, and environment through their direct influence on one another. Online and blended learning paradigms manipulate the environment thereby providing additional “virtual” space to improve self-efficacy through additional means to observe behaviors.\textsuperscript{20,21}

Accordingly, blended and online learning models would thereby influence both cognition and behaviors of student pharmacists in ways different from more traditional classroom delivery of content.

In-depth, semi-structured phone interviews were used to collect data. Students enrolled in the pharmacy management, leadership, and economics course in Fall 2019 or Spring 2020 qualified for inclusion in the study. Students not enrolled in this course in Fall 2019 or Spring 2020 were excluded from participating. Second- (P2) and third-year (P3) student pharmacists within the study institution were recruited by purposive expert sampling and subsequent snowball sampling so as to elicit rich and representative data from the group.\textsuperscript{35} Invited participants were identified using expert judgment of the researchers according to factors (e.g., academic performance, professionalism, etc.) believed to generate greatest depth of information regarding the interview questions, and after the interview, participants were invited to refer other classmates for recruitment who they believed would provide helpful insight via interview as well. Participants were invited via email to share their perspectives of and experiences with online (P3 class) and blended (P2 class) learning formats of a Pharm.D.-level, required leadership, management, and economics course. Due to a curricular change, P3 students (n=163) were enrolled in a course with the same content as P2 students (n=202). For the P3 students, the course used online-only instruction in Fall 2019, while the P2 students experienced the course using blended learning in Spring 2020. Both courses were directed by the same instructor. For the purposes of this study, students were instructed that “traditional” learning styles were those that were lecture-based, non-active learning classroom sessions with online platforms used primarily to post lecture content and send communication from instructors to students. In both blended and online courses, lecture recordings were made available to students each week on the course’s web-based learning management system (Blackboard) and supplemented with related videos, articles, and other materials to further support learning. Students could choose anytime during the week to complete these home study materials. Each module ended with a brief quiz and worksheet assignment, due at the end of each week, assessing student understanding of key concepts and application towards their longitudinal (semester-long) project: developing a unique innovative pharmacy service idea. Scheduled class time in the blended learning course was reserved for active-learning and group exercises to facilitate application of learned concepts to real-world scenarios.
All key study personnel were faculty or consultants within the study institution. One (KH) was course director but was not involved in data collection. Interviews were conducted after completion of the P2 and P3 courses and after final grades were assigned. Informed consent was obtained verbally from each participant prior to the interview. Participants received a copy of the informed consent document in advance of the conversation. The investigator conducting the interview (KF) explained the research and ensured the participant understood all aspects before proceeding. All sessions were conducted and audio-recorded (Zoom) by the study’s lead investigator (KF) who had prior experience in qualitative data collection to a point of saturation, a time at which no new information or themes were gathered.36 No individuals other than the participant and researcher were present at the time of interview. After all interviews were complete, each participant received a $20 Amazon gift card. Interview data were maintained safely in a password-protected electronic file storage system (OneDrive) and transcribed verbatim by a third-party service (Rev). Transcripts were then analyzed using a thematic approach by a two-coder team (KH and KF who have been trained in qualitative research methods) once all interviews were complete using licensed coding software (NVivo).37 Thematic analysis involved initial deductive thematic assessment, primarily categorized by the three domains of Bandura’s SCT that influence learning, action, and change: cognitive, behavioral, and environmental factors.31,37 The coding team additionally analyzed the transcripts using inductive thematic analysis methods as defined by Braun and Clarke to ensure no themes outside of SCT were missed.37 To accurately signify themes as one coding system and avoid introducing bias, the researchers first coded the transcripts separately before determining consensus on codes and themes.37 Transcripts were not returned to participants for review. Field notes were made during and after the interviews and used in qualitative data analysis to enhance data exploration, context, and extract meaning.38 Researchers consulted the consolidated criteria for reporting qualitative research (COREQ) during data collection and analysis.39 Approval of this study was granted by the study institution’s Institutional Review Board.

RESULTS
A total of 34 students were invited to participate in an interview: 20 students accepted the invitation, while 14 students declined or did not respond. A total of 20 interviews were conducted ranging from 16 to 42 minutes. Table 1 highlights participant demographic information. There were no participants who dropped out of the study, and no repeat interviews were conducted. Appendix 1 contains sample supporting quotes from each of the themes identified.

In general, students in the online-only cohort shared positive opinions and preference for the variety of learning materials provided and for the increased flexibility, autonomy, and accountability that the online course facilitated. Students in the BL cohort also referenced and preferred these same ideas, in addition to favoring the synergistic combination of in-class and online instruction (not just one or the other), which led to a perceived increase in motivation and learning.

For Theme 1 (Student Pharmacists Desire Self-directed Learning with a Focus on Application), the degree of learner control, a behavioral factor, offered in both the blended and online-only learning structures was viewed positively by participants and provided students flexibility in terms of when and how often to practice new behaviors (e.g., Strengths, Weaknesses, Opportunities, Threats [SWOT] analysis, develop innovative ideas, pitch a novel business concept). Participants felt these learner-driven, self-regulated models granted them a high level of flexibility and autonomy to choose when and where to learn at the best time for their schedule and attention rather than passively absorbing (and possibly not retaining) information in traditional lecture format.

Students reported an increased level of personal accountability with online and blended learning, feeling responsible for exploring and understanding the course material in these learner-driven environments. Students noted the substitution of external controls (e.g., set class times, faculty facilitation of direct instruction) with internal environmental or social factors, which enabled self-regulation of the learning process. Additionally, in the BL environment, students felt motivated to comprehend material and improve new skill proficiency because the in-class sessions required students to apply the material with activities and discussions in peer groups.

Similarly, because of the self-driven nature of both courses and the freedom to choose when, where, and what activities or materials with which to engage and participate, students noted how essential accountability was for engaging in online material. Though the perceived increase in autonomy and flexibility was often cited as positively fueling accountability and thereby motivation to learn in the blended and online course environments, some students reported autonomy and flexibility alone was insufficient. These students cited the need for external environmental factors, including assessments (e.g., exams, quizzes), to improve low prioritization and motivation towards these courses. Some students participated in all course materials; others chose to skip certain activities, especially if not required. Furthermore, though most students expressed positive opinions and understanding of the importance of pharmacoeconomics, leadership, and management skills taught within pharmacy curricula and value to their professional careers, a few students...
noted that these topics often took a backseat to other therapeutics-based topics that were tested on a multiple-course integrated exam every other week.

For Theme 2 (Student Pharmacists Prefer a Variety of Learning Mediums and Settings), both online and blended learning models provided means to observe content through various learning mediums such as videos, podcasts, articles, and other educational modes. The narratives of both cohorts highlighted positive views of the variety and inclusion of multi-media digital content, revealing that the multiple learning modes were interesting, helped relate important concepts, and catered to various learning preferences of students. Participants noted that these cognitive factors led to greater comprehension and retention of course topics. Students appreciated the interesting variety in content delivery, and change of pace compared to the traditional, instructor-driven style of lecturing.

Furthermore, students in both cohorts enjoyed and reported perceived benefit from the active learning elements of the course, including in-class and at-home assignments. Students appreciated the opportunity to directly apply (behavioral factor) skills and knowledge through weekly assignments such as worksheets, which in turn increased students’ perceived self-confidence in the material, a key behavioral factor in the learning process. Participants also appreciated the real-world application observed through supplemental readings, podcasts, and videos as part of the online portion of both courses. Moreover, facilitated in-class sessions by faculty experts in the BL cohort provided an additional opportunity to observe experts and peers, in addition to applying the material themselves. Students noted in particular that leadership, management, and innovation topics for student pharmacists were well suited for this format.

For Theme 3 (Blended Learning Offers Distinct Advantages Over Traditional and Online-only Pedagogies), additional benefits of the combination of in-person and online learning were described over traditional and online-only models for the blended learning cohort. A key and highly referenced characteristic of the BL narratives was that the students felt more driven to learn the course material since it was up to them to receive, understand, and apply it. The self-directed nature of the course and weekly assignments enabled learners to do the work and formulate their own ideas when working through topics. Furthermore, participants reported enjoying the BL process more than traditional, didactic instruction. Some students noted they were more engaged in the material, viewing more than just the required readings and videos provided each week.

Students referenced the novelty of this course design, which combined online, self-paced learning with in-class application of concepts. Importantly, students appreciated being empowered to determine their own time, space, and pace to learn the material as part of the self-directed home study portion of the course. Students also reported that they believed live application and active learning activities were a better, more optimal use of class time compared to traditional, didactic lecturing. Participants liked the balance between both in-class and online components, and these cognitive factors led to greater student learning behavior. The majority of interviewees in the BL cohort recommended future applications of BL in other Pharm.D. courses.

Specific to the BL cohort, with main lecture content presented via online platforms, in-class time was reserved for interaction and application of learned concepts through case scenarios, discussion, worksheets, and groupwork. According to interviewees, this in-class application piece helped solidify learned concepts and facilitated deeper understanding of topics and mastery of competencies. Students reported that BL empowered them to experience learning, comprehension, and retention on a deeper level, increasing self-efficacy and the behavior of learning.

Overall, students enjoyed and benefitted from groupwork that involved in-class discussions and problem-solving. Students liked being able to first explore and digest the material on their own time and at their own pace before discussing and applying it in an in-class group setting, an environmental factor which fostered proficient use of in-class time. According to some interviewees, this in-class application piece helped solidify learned concepts and facilitated deeper understanding of topics and mastery of competencies. Students reported that BL empowered them to experience learning, comprehension, and retention on a deeper level, increasing self-efficacy and the behavior of learning.

DISCUSSION

The results of this study provide insights into the use of blended and online learning pedagogy through the lens of Bandura’s social cognitive theory.30 Findings indicate that student learning is influenced by three factors: the collaborative, dynamic relationship of the students’ perceptions that the course material is generally less important than clinical topics; a varied learning environment; and the student’s behaviors in interacting with the material.30 Our results suggest that altering the learning environment to leverage online or hybrid online/in-person (i.e., BL) approaches may positively impact student learning for unique topics like leadership, management, and innovation within a Pharm.D. curriculum.

According to our study, students favors the increased level of flexibility and autonomy that was offered in online and BL formats compared to traditional, instructor-led teaching. Students appreciated and enjoyed taking charge of their learning, by approaching content at their own pace and on their own time, enabling them to choose when they were best
prepared to absorb and apply the information. This personalized level of control helped boost student-perceived self-efficacy and course workload management during the P2 (BL cohort) and P3 semester (online cohort). This was an important finding, as college stakeholders expressed initial concern that the self-paced nature of the course format in addition to the autonomy and learner control provided may result in less engagement and overall worse learning outcomes. Students within the study institution were not accustomed to self-directed learning. Furthermore, a substantial proportion of the class were Generation Z whose main use of technology has been for communication and entertainment, and that has shown to lead to challenges with incorporating technology into education for developing knowledge and skills. With proper support and orientation to course and technology expectations, students can learn to use these resources and the flexibility and autonomy that comes with blended and online learning to facilitate engagement and learning. Self-efficacy is a core construct of SCT that refers to the extent to which an individual believes in their own ability to achieve or perform, and it may be a key driver of the positive perceptions held by students. According to Bandura, self-efficacy is directly related to human behavior, including the behavior of learning. Self-efficacy has been previously established as a factor directly related to student success and motivation to learn. This was supported in the present study through student narratives discussing increased motivation to learn and self-efficacy gained through flexibility, autonomy, and accountability compared to the traditional learning style. These self-regulation learning strategies have been shown to enhance personalized learning for students. The self-directed nature and learner control of online and blended learning was perceived to boost self-efficacy and course workload management, while offering appealing autonomy and flexibility to busy postgraduate pharmacy students, by allowing them control over the time, pace, space, and path of the learning process.

According to Bandura, people strive to represent their own sense of agency or autonomy and possess control over their actions and behaviors. This is an important motivating factor in the learning process. Motivation itself is another key element in the learning process. Participants in both BL and online groups highlighted their increased motivation levels when compared to traditional, didactic instruction. Furthermore, students of the BL cohort indicated even higher levels of motivation than their online-only peers. Student motivation is vital to learning, as negative emotions toward learning such as boredom and frustration diminish student motivation, self-efficacy, and academic success. Findings from this and the present study emphasize the importance of student self-regulation in an online and blended learning course. That being said, students interviewed suggested that autonomy and intrinsic motivation were sometimes insufficient to compel students to engage closely with all course materials, with some students suggesting external accountability measures such as exams and quizzes. These findings suggest that the ideal learning modality privileges self-efficacy by providing autonomy and encouraging internal motivation while leveraging external accountability mechanisms like quizzes, examinations, and relevant in-class activities. The inclusion of quizzing and examinations align with Wood and Bandura’s assertion that the “most effective way individuals develop a strong sense of efficacy is through mastery experiences.” Ultimately, student experiences in the BL and online courses indicate that there is a need to couple autonomy and internal motivation (self-guided learning) with mastery experiences (quizzes, exams, and in-class exercises) in order to inculcate and reinforce self-efficacy beliefs.

SCT posits that self-efficacy and learning is gained through experience, observation, and practice. Each student is equipped with a set of learned personal experiences, knowledge, expectations, attitudes, and other cognitive factors which are affected by the learning environment and influence behavior and learning. Students of both the online and blended learning groups shared positive perceptions of the variety of learning materials and real-world examples incorporated into the courses including articles, videos, podcasts, and lectures which increased perceived engagement. According to students, the variety in content delivery was preferred over the traditional, instructor-driven lecture style. Students posited that these various modes of concept delivery and application led to greater comprehension and retention of course topics, thereby enhancing feelings of self-efficacy and motivation in a continuous cycle.

According to SCT, student learning behavior is influenced by physical and social characteristics of the educational environment, which in turn affect student motivation and engagement in the learning space, suggesting that humans are both simultaneous products and producers of their environment. In BL specifically, the thoughtful integration of multimedia home study and live, in-person learning motivated students to engage in the learning process more fully. These results support other pharmacy education research reporting increased student engagement due to blended learning. Students perceived that live application and active learning activities optimized class time in comparison to traditional didactic lectures. Students in the BL cohort reported preference for the combination of in-class active learning and self-regulated home study, asserting that engaging with supplemental materials and activities before class and then discussing and applying course content during class helped them learn the material better than online-only or traditional in-class didactic instruction. Based on our findings, future research should specifically assess BL’s impact on student engagement, motivation, self-efficacy, satisfaction, and overall academic success.
This study has limitations. It was conducted at one institution using qualitative methods. Different questions and probes could have resulted in different responses. Furthermore, the number of interview participants accounted for a small percentage (5.5%) of the overall population of students enrolled in the course. As with all qualitative studies, results are not meant to be generalized alone. The results of this study represent perceptions of a sample group of students at the present study’s institution. Future research should couple the findings of this study with quantitative data such as student surveys and academic performance (e.g., grades, other performance assessments) and implementation across multiple courses and/or institutions.

CONCLUSION
This study applied Bandura’s social cognitive theory to understand and compare student pharmacists’ perspectives and experiences with online and BL used to teach pharmacy management, leadership, and economics in a Pharm.D. curriculum. In both blended and online learning environments, students enjoyed the flexibility, autonomy, and the variety of learning materials that were offered. Students in the BL cohort specifically noted that they preferred the synergistic combination of online home study and live, application-based class time. This blended design was perceived to enhance student learning, engagement, motivation, self-efficacy, and satisfaction compared to online-only and traditional, instructor-led teaching. According to this study, BL seems to align best with student pharmacists’ learning needs and preferences. To fully engage students in the learning process and better meet their learning needs and preferences, educators may consider the findings of this study when designing and developing instructional activities moving forward. Further research should be conducted on blended learning’s impact on student performance.

REFERENCES


Table 1. Participant Demographics

<table>
<thead>
<tr>
<th>Professional year</th>
<th>Online-only Cohort Participants, n of 11 (%)</th>
<th>Blended Learning Cohort Participants, n of 9 (%)</th>
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<tr>
<td>P3 (Class of 2021)</td>
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<tr>
<td>P2 (Class of 2022)</td>
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<tr>
<td>Nashville</td>
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</tr>
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<tr>
<td>Years of pharmacy work experience</td>
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<td>Practice specialty or area of interest</td>
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Figure 1. Social Cognitive Theory: Cognitive, Behavioral, and Environmental Factors

**BEHAVIORAL FACTORS:**
- Self-regulation in self-directed learning
- Confidence in material
- Content application and practice

**COGNITIVE FACTORS:**
- Self-efficacy
- Knowledge, expectations, attitudes
- Attitude toward leadership, innovation, management, or economics content

**ENVIRONMENTAL FACTORS:**
- Physical classroom environment
- Virtual classroom environment
- Social environment online and in-person

Determines Student Learning Behaviors
### Appendix 1. Sample Quotes from Interviews

<table>
<thead>
<tr>
<th>Theme</th>
<th>Participant Cohort</th>
<th>Supporting Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Theme 1:</strong> Student Pharmacists Desire Self-directed Learning with a Focus on Application</td>
<td>Blended Learning</td>
<td>“I know that if I learn at my own pace, then I'll do better with absorbing and understanding the material. I really liked that aspect of it.” (P2.15)</td>
</tr>
<tr>
<td></td>
<td>Blended Learning</td>
<td>“I liked that sometimes you could watch the lecture and then the next day you could read the article or watch the YouTube video. And it wasn't like you were sitting there for hours not being able to fully pay attention.” (P2.1)</td>
</tr>
<tr>
<td></td>
<td>Blended Learning</td>
<td>“I was forced to actually understand things firsthand on my own and then go into the classroom and be able to have a discussion. And because it was on my own schedule, I felt like I wasn't being forced to study. I wanted to learn these things just because I wanted to further my knowledge rather than, “I have to because it's been spoon fed to me and I have to digest it,” but instead I could figure it out on my own.” (P2.16)</td>
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<td></td>
<td>Online Learning</td>
<td>“I felt like since I had to actually sit down and read it myself instead of just listening to someone, maybe zoning out, I learned it a little bit better. Sometimes I really dove in and read. I feel like that because I did have to go through and actually sit there and read articles instead of just having someone present a PowerPoint. So, yeah, probably deeper understanding.” (P3.1)</td>
</tr>
<tr>
<td></td>
<td>Online Learning</td>
<td>“Hardly ever [did I review the online materials], unless I knew for sure we were going to be held accountable in some way in class for knowing that material.” (P3.7)</td>
</tr>
<tr>
<td></td>
<td>Online Learning</td>
<td>“For me at least, and I know some other people in class that had a similar opinion, with this course being non-therapeutics related, motivation for it can be very low because it doesn't feel as applicable as some of that without it being on the big composite exams.” (P3.8)</td>
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<tr>
<td><strong>Theme 2:</strong> Student Pharmacists Prefer a Variety of Learning Mediums and Settings</td>
<td>Blended Learning</td>
<td>“I liked having a combination of the articles and the videos. I think it was interesting to see the different perspectives. Seeing [concepts presented] more than once helps a lot.” (P2.1)</td>
</tr>
<tr>
<td></td>
<td>Online Learning</td>
<td>“I would say [the course design] definitely did [increase my knowledge of the subjects being taught] because of, and especially, the use of videos and the different articles. People learn differently. And so, I might retain something from a Ted Talk more so than I would have from an article. But I did enjoy that we were given the same information, all the same concepts presented in different ways.” (P3.6)</td>
</tr>
<tr>
<td></td>
<td>Online Learning</td>
<td>“I would say yes, [the various educational activities helped me learn the material better]. I think that more than a professor just lecturing, this was actually a really good way to deliver this type of material. When someone could give a concrete, real-world example of what they did and how they used it and how they developed that. That was nice.” (P3.8)</td>
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<td>Online Learning</td>
<td>“I really liked those articles linked with the worksheets because they weren’t just another review article or JAMA article. It was real life applications of the worksheets we were doing for that week, so it wasn’t just another abstract idea, it was something that a pharmacist somewhere had applied. I think it really brought the idea that we were learning to life, and it really helps to get into your head that it is feasible, that it’s not just an idea that’s been thrown around, it’s actually feasible to implement into your practice.” (P3.2)</td>
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| **Theme 3:** Blended Learning Offers | Blended Learning | “[BL] forced me to be more active in learning because [in] the traditional setting where the teachers are just there to lecture to you and then you just sit there and absorb the information as much as you can and then figure out the rest. I just start becoming more
Distinct Advantages Over Traditional and Online-only Pedagogies

Blended Learning “I was more motivated to learn in this [BL course] than some of the other didactic courses where I would just kind of get into the same old routine of go to class, pay attention, try to understand what they want us to know, write it down and then continue on. [BL] was refreshing because I could look over online [modules], review the slides, review the lectures, and then in-class was honestly fun. A lot of the assignments were fun. The engagement from a lot of the professors was fun. So, that really motivated me to really learn about the topic more and made me look forward to the class during the actual class time.” (P2.8)

Blended Learning “I think face-to-face is a really good way of learning, makes you be in the moment, but also computer-based learning is your time alone to critically think on your own and have self-reflection, things like that. So, I think blended learning is a really good way of having to work with people for one aspect and also being by yourself and being able to critically think on your own is a benefit.” (P2.9)

Blended Learning “In the classroom we actually went in and applied it. That helped me understand it more. There were some topics that I didn't truly understand, even watching online, until got in class and we applied it. Through applying it through groupwork and actually working with my friends and my group members and figuring out what it is we're doing, that in and of itself really helped me to understand it more and retain the information more. So, I definitely liked the group aspect and the application and how we worked on it in the classroom. That to me was a massive selling point and just one of the best things about the course.” (P2.8)

Blended Learning “I think to have that time to sit down and think about [the content] first before going into the groups is pretty important. We're able to absorb it on our own then go into it as a group and be a lot more efficient with it.” (P2.14)

Blended Learning “My ideas or my thoughts were a little different than my group members’, but it helped me gain more perspective on that certain topic. I liked that. I liked learning what people think about a subject rather than just my own one way thinking. I think that was a really good way of incorporating team building and broadening your perspectives.” (P2.9)

Blended Learning “There were some students that you could tell neglected the online part and just showed up to class to get a free ride from other members of their group. That's one thing that's frustrating with groupwork, but it usually tends to be one or two people in each group that are always like that.” (P2.2)