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Using Debates to Mimic Clinical Discussion in Experiential Education

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Abstract

Critical thinking and application of knowledge to an ambiguous patient care scenario are often difficult skills to cultivate in learners. Use of traditional teaching techniques (e.g. topic discussions and journal clubs) helps to develop these competencies within learners. However, alternative teaching strategies may help develop critical thinking and direct application. Debates have been used in healthcare education for decades with positive results. This paper provides supporting evidence for use of debates in pharmacy education and is designed to serve as a general guide for preceptors interested in implementing debates into the experiential setting. Specifically, the objectives are to: 1) highlight the pedagogical outcomes as reported in the literature, 2) offer practical considerations to implement debates as a teaching tool in experiential education, and 3) encourage future research and scholarship in this area.

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Keywords: experiential education, debates, pharmacy

Introduction

Innovation in healthcare education has become increasingly encouraged in healthcare curricula. In the Accreditation Council for Pharmacy Education (ACPE) Standards 2016, the need to “actively engage learners” and “foster collaborative learning” is addressed in Standard 10.12.¹ These standards work alongside the Center for the Advancement of Pharmacy Education outcomes to prepare practice ready graduates.² In the current healthcare environment, pharmacists are called upon to serve as not only medication experts but also to make decisions based on conflicting factors (clinical data, patient needs, etc.), integrate into interprofessional teams, and clearly communicate safe and effective medication use practices that align with patients’ best interests. This approach to patient care is highlighted in ACPE Standard 3 as it addresses educators’ responsibility to prepare learners to “educate, advocate, and collaborate, working with a broad range of people; recognize social determinants of health; and effectively communicate verbally and nonverbally.”¹ As such, educators must develop structured, reliable methods to expose learners to these types of real-world practice demands. Debates offer several advantages in experiential education because they can foster self-directed learning, participation in a shared dialogue, critical thinking skills, communication and teamwork, and metacognitive awareness in a single activity.

Debates have been utilized for many years in didactic liberal arts and health profession education. Success has been

demonstrated outside of traditional lecture formats in the didactic setting³⁻⁹ and could address many of the aforementioned skills in the experiential setting. Debate activities offer the ability to: 1) explore a topic that has more than one correct stance in the setting of a complex healthcare environment, 2) utilize available data that supports a stance as it relates to best practices/a patient’s best interest, and 3) communicate a stance to others with differing opinions in a persuasive, professional manner. Debates in the experiential setting give students a protected environment to utilize various skills in a back-and-forth format that mimics clinical discussions that occur in every practice setting. The ability to critically review and summarize all available evidence and recognize that there may be more than one “correct” answer or valid viewpoint is crucial for their success. Whether the topic is the best agent for hypertension in dialysis patients or dosing strategies for an outpatient antibiotic, debates give students a window into how to effectively evaluate and communicate clinical controversies. While patient care activities in the experiential setting may introduce students to these concepts from time-to-time, implementing routine structured debate activities can ensure that all learners in a particular setting are exposed to these types of challenges on a regular basis. However, perhaps due to the numerous available debate formats and a general lack of preceptor familiarity, the use of debates in experiential healthcare education has not been as clearly defined.

A PubMed/MEDLINE, ERIC, and Google Scholar literature search was completed using the following search terms, alone and in combination: debate, experiential education, healthcare, pharmacy, student, resident, and curriculum. All English language manuscripts were eligible for inclusion and no time restriction was placed. Articles were included if a classroom or experiential debate was described, irrespective

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of the inclusion of evaluative or outcomes data. This paper aims to detail the findings of available debate-related experiential research in healthcare and pharmacy education to encourage future use of this approach. Specifically, the objectives are to: 1) highlight the pedagogical outcomes as reported in the literature, 2) offer practical considerations to implement debates as a teaching tool in experiential education, and 3) encourage future research and scholarship in this area.

Non-Pharmacy Healthcare Professional Debates in the Classroom Setting

Classroom debates in allied health profession education have been well documented in the literature. Examples of types and perceptions of debates can be found amongst medical,⁴ nursing,^{3,6,7} dental,⁹ and undergraduate pre-health profession learners.^{5,8} Reports were found from across the world, with examples from North America,⁵⁻⁸ Europe,³ and Asia.^{4,9} While debate formats in these examples varied, the vast majority utilized a modification of the classic Lincoln-Douglas debate, a format in which two people or teams argue one side of a dichotomous topic. Most included a well-defined rubric for evaluation of student debate performance and assessed perceptions through questionnaires or reflective comments.

Student perceptions following these debates were generally positive. Selected comments provided by the authors of many studies demonstrated students' improved self-assessment of their ability to think critically about the topic, select and apply appropriate literature, and communicate viewpoints confidently. Analysis of student performance, as measured by the rubrics, was not discussed in most of these studies.^{3,5-9} One study evaluated students using a standard debate competency scale to assess empathy and critical thinking in a debate-based, flipped learning style course.⁴ As a part of the analysis, students were divided between high and low achievers. High achievers demonstrated significant differences in logical argumentation, proficiency in inquiry, observance of debate rules, and appropriateness. In both groups, significant increases in active participation and ability to investigate and analyze were noted.⁴

A limitation of these studies is that the faculty perspective was not addressed – the authors in all studies focused exclusively on student outcomes and perceptions.³⁻⁹ As such, insights into preparation time or the process of creating rubrics are not available. While most authors concluded that debates are an effective and engaging tool to replace standard lecture formats, one group of authors expressed concern with their finding that assigning positions significantly influences student opinion after the debate.⁵ There were no other barriers or challenges to implementation mentioned in discussion.

Pharmacy Debates in the Classroom Setting

Debates in the classroom setting have been described in the pharmacy literature for over 10 years,¹⁰⁻¹⁷ and much can be gleaned from the use of debates in this setting. Use of debates has been described in a variety of pharmacy student training levels, formats, and curricular courses. Student participation ranged from first to third professional year and included online and live formats. While traditionally thought of as a small group activity, debates have been described in large courses^{10-12,14,16-17} (e.g. pharmacy therapeutics) and small professional electives.^{13,15}

Two publications showcased the use of online debates in pharmacy student learning.¹⁰⁻¹¹ Both utilized an online forum to argue each side of the debate longitudinally over the semester, posting arguments and rebuttals targeting their stance. Faculty engaged all students in dialogue at each interval. For example, Lin and colleagues report that students posted three arguments during the semester and each argument was assessed by a course instructor.¹⁰ Use of the online format led to positive student experiences, though there were several identified areas for improvement in the debate process. Students perceived improvements in their critical thinking and written communication skills and appreciated the opportunity to work as a team. The online format proved frustrating for students, who noted a lack of applicability to real-life and limited personalized feedback on performance.¹⁰⁻¹¹

Reports of the use of live debates are also sparse within the pharmacy literature. Student participation differed in the live debate format, as compared to the online execution. Each student was responsible for argumentation in a single debate during the semester with the remaining time spent in active audience engagement.¹²⁻¹⁷ Interestingly, student perceptions were similar to the online format with respect to development of critical thinking and communication skills.

In the aforementioned reports, the assessment techniques varied and included: grading individual debate performance components (e.g. argumentation, literature),^{13,14,16} evaluation of the entire debate in a single rating,^{12,17} and assessing topic knowledge using quiz or test questions.¹² Two authors also assessed a change in students' opinions following active and passive participation in the debate.^{12,17} Irrespective of the format or assessment method studied, use of debates in the pharmacy classroom has evidence to support self-directed learning and further develop necessary skills.

Non-Pharmacy Healthcare Professional Debates in the Experiential Setting

Debates in the experiential setting have recently shown promise within healthcare education.¹⁸⁻²⁴ Medical residency,^{18,22-23} nursing,^{20,24} and healthcare professional educators²¹ have reported use of debates in post-graduate

education and as a continuing education technique. In all reports, variations on the Lincoln-Douglas format were used. Knowledge assessment was completed in six studies, using a rubric or quiz-based performance.^{18-19,20-23} Use of a debate instead of a topic discussion or journal club was associated with increased quiz scores, as compared to traditional formats.²³ Rubric assessment of specific areas demonstrated improvement in critical thinking and literature appraisal with poor performance noted in presentation skills.^{19,21}

Incorporation of debates into the experiential setting has been well received. Participant perceptions were overwhelmingly positive, noting improved confidence and literature evaluation skills. Comments revealed a preference for the debate format over traditional teaching techniques and a positive experience with comradery between team members.¹⁸⁻²⁵

Pharmacy Debates in the Experiential Setting

To date, there is currently only one published instance of experiential debates in the pharmacy literature.²⁶ Authors implemented a modified Lincoln-Douglas debate as an alternative to the traditional journal club for their acute care and ambulatory care advanced pharmacy practice experience students. Students were assessed on debate preparation and knowledge of debate subject matter, and audience members selected a winner following each debate. Student perceptions of the debate were collected using a post-debate survey and indicated improvements in confidence related to locating, analyzing, and retaining information from primary literature. Students also indicated overall satisfaction with this educational activity. While this article provides a glimpse into the possibilities of debates in the experiential pharmacy setting, there is still a great deal of opportunity to explore this teaching method in this setting.²⁶

Use of Debates & Implementation

With consistent demands on time for experiential preceptors, use of this innovative teaching technique may allow for autonomous learning and improved understanding. However, for preceptors interested in implementing this activity in their practice settings, initial thoughtful planning is key to conducting successful debates. As noted previously, there are a number of debate formats to consider. Though the Lincoln-Douglas debate format appears most frequently in the healthcare literature, other formats might be equally beneficial under certain circumstances. There are pros and cons to each format, but no matter the type of debate implemented, the ultimate goal of this active learning exercise is to mimic a clinical discussion. Providing clear expectations and/or demonstrations prior to the debate may enhance student satisfaction with this unique activity. Assessment methods can also be tailored to meet preceptor objectives and student needs. With several hours of advanced planning and activity development, preceptors may find that this beneficial learning activity can be implemented routinely with minimal

preceptor involvement, while still yielding rewarding learning outcomes.

There are multiple types of debates described in non-healthcare literature, ranging in size, purpose and complexity. Debates consist of a minimum of two people who discuss, argue, or defend a position on a provided topic. Lincoln-Douglas, four corner, role-play, think-pair-share, and fishbowl debates are all examples of debates that can be used in the curriculum (see Table 1). Debates can be implemented for a live audience or via an online format. In an online format, learners could be provided a short period of time to debate, such as one hour, or each stage or portion of the debate could take place over multiple weeks. The flexibility of the online debate format may also allow time for more than one round of rebuttals or more than one patient scenario to be evaluated. Each type of debate has a unique set of characteristics that can help promote various skills for learners, such as critical thinking, interpersonal communication, empathy, and public speaking.²⁸ The structure of the experiential learning experience for pharmacy students, however, may lend itself to be better suited for a live audience.

Lincoln-Douglas

The Lincoln-Douglas debate is arguably the most traditional and well-established debate format, especially within the healthcare professions literature. In this debate format, two people or teams argue one side of a dichotomous topic. Each person or team alternates providing an opening argument, rebutting the opposing side's arguments, and delivering a closing statement. The debater needs to be prepared to support his or her own side and any alternative arguments presented by the opposing side. A Lincoln-Douglas debate can be modified to accommodate a small or large group of debaters, which may make it desirable in an experiential setting.

Use of the Lincoln-Douglas debate as a teaching method has been widely established as effective in the healthcare literature and is well received by learners.¹²⁻¹⁷ Student participants stated the use of the traditional debate format helped with application of clinical trial data to patient care scenarios.¹³ Additionally, students reported an improvement in presentation skills and ability to critically evaluate literature.^{15,16} It is important to remember that assigning students to a particular side may not align with pre-conceived opinions, requiring the participant to support alternate views. This may serve as a challenge for participants with strong opinions on controversial topics. However, data has shown that simply viewing a Lincoln-Douglas debate often causes audience members to change opinions.^{5,17} Ultimately, use of this debate format may encourage more informed and balanced opinions amongst participants and audience members alike.

The Lincoln-Douglas debate is best implemented when a clinical controversy or question can be identified for the debaters. Alternative methods of incorporating a Lincoln-Douglas debate within the pharmacy experiential setting could include evaluation of a drug information question or opposing pharmacy literature. Of note, pharmacy students in previously published literature indicated increased satisfaction when provided a video or detailed explanation of the Lincoln-Douglas debate format.¹⁵ A detailed explanation of expectations for the debate along with a dichotomous, clinical controversy debate topic will set the Lincoln-Douglas debate up for success.

Four Corner Debates

The four corner debate asks learners to personally evaluate their opinions of a statement and then move to one of the four corners of the room, labeled “strongly agree,” “agree,” “disagree,” and “strongly disagree.” This allows for learners to choose their position then work together to support and defend their beliefs, which may decrease the amount of preparation required by the debater. This debate promotes teamwork, but requires a large group of learners to be executed as intended. There is not a minimum number of learners recommended for successful use of the four corner debate, but one can imagine the limitations of a small group of learners when there are four response options to each statement provided. The data for four corner debates is limited. In the experiential setting, a four corner debate may be best implemented with an ethical or progressive topic where there is not a clear dichotomy to the arguments. Some debaters may appreciate the ability to pick the position she or he most aligns with, as opposed to being assigned a topic area.

Role Play Debates

Role play debates require debaters to represent a stakeholder in a particular issue. This type of debate is similar to traditional role play, where a person acts out or performs the part of a person or character. However, in a role play debate, debaters are required to empathize with their assigned stakeholder and represent them in the discussion. In addition, learners are encouraged to ask questions to further explain the interpersonal dynamics being represented. For example, a difficult patient situation could be described, and the debate occurs by acting out or explaining the perspective from each stakeholder involved. Stakeholders for this example would include the patient, his or her caregiver, the physician, other healthcare providers, and even hospital administration. A modification to this debate type is to have the preceptor represent all of the various roles and change positions with each role change. Learners participate in this ‘debate’ by asking questions with the preceptor presenting rebuttals against each role that is played. This modification is particularly useful if the learners do not have enough background knowledge on various stakeholders. For example, to simulate discussions of multiple viewpoints regarding the

measles, mumps, and rubella (MMR) vaccination, the preceptor can role play the parent with concerns about vaccinating their child, the child’s pediatrician, a public health official concerned for the public welfare, an oncologist to explain the risk to immunocompromised patients, and a parent of a child unable to be vaccinated.

In the classroom setting, role play debates have been found to sensitize participants to the environments of other individuals, such as difficulties experienced by the elderly.³¹ Role-playing increases the learner’s ability to discuss scientific topics with diverse audiences and critically evaluate the reliability or source of the information provided by other stakeholders.³² In the experiential setting, this debate type may be best utilized to encourage empathy or interpersonal communication for the various health care professionals, caregivers, and patients commonly encountered within that practice site.

Think-Pair-Share Debates

Think-pair-share debates require the least amount of time, preparation, and instruction compared to the other debates. In a think-pair-share debate, learners think individually, work in pairs to create lists of reasons to support both sides, and then two pairs work together to come to a consensus on the issue. While think-pair-share may not traditionally be thought of as a debate, it can be utilized in a format where a minimum of two people discuss, argue, or defend a topic to further understanding. During the final step, “share,” learners may ultimately agree or disagree on the topic at hand. Each step of “think,” “pair,” and “share,” should take only one minute. Literature has demonstrated that employing a technique such as think-pair-share and allowing for discussion of concepts during a lecture period enhances the student level of understanding.³³ In the experiential setting, think-pair-share debates could be incorporated into questions that arise during the day, such as exploring options and then coming to consensus for a treatment plan. A limitation in the experiential setting is to have ideally four learners to complete all three steps of think-pair-share.

Fishbowl Debates

Fishbowl debates assign a position to learners, with at least two to three different positions possible. During the debate, a group of chairs are arranged in a circle to create the fishbowl and the remaining chairs surround the circle. Each debater has a turn to present their position. Audience members are active participants of this debate, as they take turns rotating into the inner circle to ask questions. This type of debate may be best suited for an experiential setting with multiple preceptors or levels of learners who can serve as the audience members and effectively challenge the opening statements of each position.

Debate Assessment

As with any learner activity, self-reflection and performance assessment are essential. Debates can be used to develop

knowledge of the debate topic, as well as a variety of skills, such as critical thinking, interpersonal communication, empathy, and public speaking. As discussed in the above sections, the current literature highlights support for debate use among learners by capturing perceptions of active and passive debate participants.

Measuring concrete changes in knowledge, understanding, or comprehension is more challenging. Use of a rubric may limit subjectivity in measuring, while a pre- and post-quiz or test may be sufficient. When trying to assess soft skills, such as interpersonal communication or public speaking, utilization of direct feedback or a rubric may be necessary. In spur of the moment experiential debates, immediate verbal feedback may be best. Creation of an assessment tool should undergo independent quality review for content, purpose, and understanding. Pilot testing and gathering feedback from participants can help shape a successful assessment tool. The addition of self and peer assessment may also provide valuable insight. Self-assessment of the learner's perception of the activity and the skills they gained is also important and may help promote metacognitive awareness. Peer evaluation may also provide preceptors and students with valuable information on how the learner contributed to the debate.

Advancing the Use of Debates

While debates have been reported extensively in other healthcare profession literature, their use in pharmacy education, most notably in the experiential setting, is lacking. This further highlights the opportunity for pharmacy preceptors across the academy to implement this pedagogical method. A few simple steps can help with the implementation of debates in the experiential setting. First, identification of gray areas during patient care activities or clinical controversies that arise during patient care rounds is an excellent way to select debate topics. Use of potential journal club articles can be transformed into debates by providing literature to support or dissuade the stance in the selected article. Topics can also arise from drug information questions, formulary management considerations, trending healthcare topics in mainstream media, or historical truths (e.g. beta-blocker use in heart failure). Recycling topics or finding tried and true success stories can also be strategies to implement debates. Regardless of the topic, the learner benefit can be substantial. Secondly, partnering with other experiential preceptors can be beneficial in developing successful debate activities. Pharmacy learners could be paired with nursing, medical, or other allied health profession students. Introductory pharmacy practice experience (IPPE) students could be paired with advanced pharmacy practice experience (APPE) learners to facilitate mentoring, critical thinking development, or teamwork. Likewise, a post-graduate trainee (pharmacy resident, fellow, etc.) could serve as a competitor, team member, or mentor in any experiential debate. Finally, the various debate formats can be evaluated for

appropriateness for the specific setting and learners. Using lessons learned from previously published literature, and considering the pros and cons of each potential debate format (Table 1), preceptors should be able to implement debates that best fit the needs of their learners within their specific practice settings.

Additionally, the shortage of pharmacy literature describing this educational method in the experiential setting should encourage preceptors across the academy to add to the current body of literature by reporting the results of their debate exercises. The current body of literature is mainly focused on learner perceptions, so there is ample opportunity to evaluate the impact of debates on other factors. Innovative use of debates to supplement or replace traditional experiential activities (e.g. journal clubs, presentations, etc) should be assessed for changes in skill set development. Implementation of assessment strategies to identify changes in soft skills, critical thinking, or metacognitive processes is a timely research opportunity with the potential to change how experiential education is accomplished. Moreover, validated assessment tools should be sought and applied. Creation and validation of a rubric, evaluation tool, or student survey could help further implement debate use without necessitating development of an assessment tool. Evaluation of preceptor perceptions may also yield important insight into the benefits of this activity and the workload associated with implementation. Finally, partnering with other disciplines or using a layered learning approach to execute the debates provides an opportunity to evaluate learner perceptions in these unique experiences. Regardless of the methods used to implement them as a teaching tool, debates can hopefully help learners further develop the skills that will be needed to be practice-ready. Thoughtful design of research to assess the skill set or knowledge attained by the use of debates will help preceptors and faculty better understand the utility of debates.

Conclusion

As demonstrated in the literature, this activity is important as it has the potential to encourage the application of knowledge previously learned, to summarize advantages and disadvantages of a clinical issue, and to improve presentation skills. As demonstrated by previously published literature, debates can assist preceptors in developing critical thinking, communication, and literature evaluation skills. As educators move forward, non-traditional teaching methods, such as debates, can be implemented to meet the goal of exposing learners to real-world controversies and preparing them to best handle these situations in future practice.

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Table 1: Debate types and considerations

Type of Debate	Preferred Group Size Small v. Large Group*	Preparation required for participants?	Pros	Cons	Application for experiential learning	Example Topics
Lincoln-Douglas debate ^{13,15,27-28,30}	Either	Debaters: Yes Moderator/instructor: Possible Audience: No	<ul style="list-style-type: none"> • Familiar debate style that is easy for learners to understand • Evaluates presentation style and public speaking skills • Encourages critical thinking and “on the spot” thinking for rebuttals 	<ul style="list-style-type: none"> • May promote dichotomy • Position assignment may conflict with personal opinion • Requires significant debater preparation • Best for a single level of learners • Active audience participation not required 	<ul style="list-style-type: none"> • Allow for application of multiple sources of clinical trial data to patient case scenarios • Improve learner presentation skills • Promote an informed opinion 	<ul style="list-style-type: none"> • Select opposing primary literature articles to adapt a traditional journal club or drug information activity into a debate • Rivaroxaban vs. apixaban for atrial fibrillation stroke prevention • Angiotensin converting enzyme inhibitor vs. angiotensin receptor blocker (ARB) vs. neprilysin inhibitor & ARB first line therapy for heart failure with reduced ejection fraction patients
Four corner debate ³⁰	Large	Debaters: Yes Moderator/instructor: Possible Audience: No	<ul style="list-style-type: none"> • Promotes teamwork and interpersonal communication • Learners allowed to choose their position • Appropriate for multiple levels of learners to work as a team • Active audience participation 	<ul style="list-style-type: none"> • Requires a large group 	<ul style="list-style-type: none"> • Limited data published to date • Encourage evaluation of multiple viewpoints/solutions to a question (no clear dichotomy to the argument) 	<ul style="list-style-type: none"> • Pharmacy should be responsible for all patient medication histories: Strongly agree, Agree, Disagree, or Strongly disagree • Antibiotics should be allowed for use in animal livestock: Strongly agree, Agree, Disagree, or Strongly Disagree

Table 1: Debate types and considerations (continued)

Role-play debate ^{29, 31-32}	Either	Debaters: Yes Moderator/ instructor: Possible Audience: No	<ul style="list-style-type: none"> • Promotes ability to discuss topics with diverse audiences • Increases potential of innovation • Could promote empathy or cognitive diversity, depending on chosen debate topic • Appropriate for multiple levels of learners • Active audience participation 	<ul style="list-style-type: none"> • Limited by learner experiences or familiarity with the stakeholder 	<ul style="list-style-type: none"> • Sensitize learners to social issues and instills empathy • Expose learners to the participants of the medical team • Increase learner's ability to discuss scientific topics with diverse audiences 	<ul style="list-style-type: none"> • Addressing non-adherence issues in patients of low socioeconomic status • Experiencing the difficulties faced by elderly in health care • Practicing interactions with various individuals within health care (i.e., physicians, nurse practitioners, care managers, social workers, radiology technicians, phlebotomists, patients, family members)
Think-pair-share debate ³³	Either	Debaters: Yes Moderator/ instructor: Possible Audience: No	<ul style="list-style-type: none"> • Decreased time commitment • Easy to explain and execute • Promotes interpersonal communication • Appropriate for at least two levels of learners to work as a team • Active audience participation 	<ul style="list-style-type: none"> • Designed to reach a quick consensus for the question which may limit learner ability to develop a well thought out or researched answer 	<ul style="list-style-type: none"> • Encourage individual thinking and discovery of others' viewpoints • Allow for quick, informal student performance feedback 	<ul style="list-style-type: none"> • Evaluate options for resistant hypertension. [The discussion can be developed by adding in unique patient factors, such as pregnancy or kidney disease.] • Which agent – furosemide or spironolactone – is more impactful for fluid removal in patients with ascites due to cirrhosis?
Fishbowl debate	Large	Debaters: Yes Moderator/ instructor: Possible Audience: No	<ul style="list-style-type: none"> • Requires preparation on assigned topics • Active audience participation vital to its success • Informal public speaking skillsets are utilized • Accommodates multiple levels of learners 	<ul style="list-style-type: none"> • Assigned position on controversial topic may change the debater perspective 	<ul style="list-style-type: none"> • Limited data published to date • Allow for large group participation • Offer ability to include multiple positions 	<ul style="list-style-type: none"> • Pro vs. con: pharmacy needle exchange programs • Pro vs. con: physician assisted suicide should be legalized federally. [Involvement with learners from other health sciences could be considered.] • Pharmacists should have provider status.

*Small group is defined as 2 learners actively debating; Large group is defined as > 2 learners actively debating