

INSTRUCTIONAL DESIGN AND ASSESSMENT

A Seminar Course on Contemporary Pharmacy Issues

Therese I. Poirier, PharmD, MPH

School of Pharmacy, Southern Illinois University Edwardsville

Objectives. To implement and evaluate an innovative approach to a pharmacy seminar course intended to develop students' presentation skills and encourage them to think critically about contemporary pharmacy issues.

Design. The instructor provided lectures intended to prepare students for their presentations. These lectures included tips on writing abstracts, learning objectives, use of visual aids, and presentation delivery. Pairs of students chose a pharmacy issue, researched their topic including identifying various strengths of evidence to support a perspective, wrote an abstract and learning objectives, prepared their visual aids, and delivered a pro/con perspective. Students also provided peer evaluations for these presentations. A personal response system was used to provide class input on the presentations.

Assessment. Ninety-five percent of the peer evaluations of the presentations were good to excellent. The overall course evaluations indicated achievement of course goals.

Conclusions. A pharmacy seminar course intended to develop student presentation skills and critical thinking about contemporary pharmacy issues was demonstrated to be successful. The "taking sides" format was an effective design for accomplishing these objectives.

Keywords: presentation skills, contemporary issues

INTRODUCTION

Traditionally, post-baccalaureate doctor of pharmacy (PharmD) programs required students to complete a seminar course for the primary purpose of improving oral presentation skills. The course often consisted of students preparing a presentation in which new knowledge on drugs or therapeutics was presented using audiovisual materials. The pharmacy literature reaffirms that it is necessary for graduates to have strong presentation skills and oral and written communications skills.^{1,2} However, with the increase in enrollment resulting from establishing the PharmD as the first-professional pharmacy degree, retaining the objectives of the traditional seminar course while also addressing other ACPE accreditation outcomes has become a challenge for pharmacy schools. The purpose of this study was to implement and evaluate a unique modification to the traditional pharmacy seminar course, requiring students to "take a side" (pro/con) on a contemporary pharmacy issue and analyze and present their findings.

DESIGN

The idea materialized from a "Taking Sides" series of books.^{3,4} The course is a 1-credit offering in the sec-

ond-professional year of the program and was developed at a new school of pharmacy at Southern Illinois University Edwardsville.

The objectives of this course are to enhance verbal and written presentation skills of students and to develop analytical skills as students learn about sides of a contemporary issue in pharmacy practice. The students also enhance their skills in providing peer evaluations. Using these course objectives helped to address the School's curricular competencies. Specific School curricular competencies addressed by the course are: (1) maintain professional competence by identifying and analyzing emerging issues; and (2) participate in self-learning and professional development.

The new course was offered for the first time during the fall 2006 and spring 2007 terms for 81 pharmacy students in the second-professional year of the PharmD program. Students had the choice of taking the course during either the fall or spring terms. The course enrolled 42 students during the fall term and 39 students during the spring term. The instructor offered the course twice during the academic year to accommodate the required pair presentation schedule times and thus only had to allocate instructor's time for 1 class session per week. The course met once a week for 14 weeks. The structure of this course only required 1 faculty member for each semester.

The first 3 sessions were dedicated to presentations by the faculty member. During the first class session,

Corresponding Author: Dr Therese Poirier. Southern Illinois University Edwardsville, School of Pharmacy, 200 University Park, Edwardsville, IL 62026. Tel: 618-650-5155. Fax: 618-650-5152. E-mail: tpoirie@siue.edu

students were randomly assigned into teams of 2 and given their order of presentation. The teams identified their top 3 choices from a list of potential emerging issues. Students were allowed to suggest 1 choice not found on the list. Examples of issues selected during fall 2006 and spring 2007 are found in Appendix 1. Presentations were limited to 15 minutes, with an additional 5 minutes of class time reserved for questions and answers and the peer evaluation of the presentation. Two team presentations were scheduled for each class session.

During the second and third class sessions, lectures were given on presentation skills. These sessions included content on how to write an abstract, write learning objectives, cite references, and use slides effectively. Students were asked to develop their presentation from a “taking sides” perspective. One student on each team presented the pro side on their topic and the other student presented the con side. Students were also asked to analyze these critical issues by considering the elements of a structured abstract for a “taking sides” presentation (Table 1). They were asked to identify the issue or problem, identify the evidence supporting opposite sides, evaluate the evidence and arguments, and recommend a solution addressing the issue. Students were also asked to rate the strength of the evidence provided by the opposing side on each issue.⁵

Students were introduced to the use of Bloom’s taxonomy for writing learning objectives. Student teams developed a set of learning objectives reflecting various levels of Bloom’s taxonomy and provided references for the presentation. The reference citations complied with the Uniform Biomedical Requirements for References.⁶ The abstract, learning objectives, and references were posted on the Blackboard course site for other students to review prior to the presentation. Guidelines for presenting with slides were reviewed. Students were asked to use appropriate technology to deliver their presentation. Each member of the team had to participate in the delivery of the presentation. During one of the class

sessions, the faculty member provided tips on giving constructive feedback, and guidelines for peer evaluation of the presentations were reviewed.⁷

The major learning strategies used in this course included self-learning, writing and oral presentation, self-reflection on learning, and peer evaluation. Self-learning about emerging issues was accomplished through required research into the contemporary practice issue. By preparing a “taking sides” (pro/con) perspective for the presentation, students also enhanced their analytical skills. Students practiced written presentation skills by preparing an abstract for their presentation and written visual aids including PowerPoint slides. Oral presentation skills were practiced by each student through the delivery of their presentation.

Upon completion of their presentation, students submitted a self-reflection on their learning addressing these specific questions:

- (1) Did you achieve your learning goals? Explain.
- (2) What key concept(s) did you learn from this exercise and what helped you learn this?
- (3) Did you find working in pairs an effective method of learning? Please explain.
- (4) What if anything would you do differently for your next presentation?

The SIUE Institutional Review Board granted exempt status for this course evaluation. The grading scale for the course is found in Table 2. The grading rubrics and the criteria for evaluating the presentation are found in Appendix 2. Each pair of students was given a single grade for their abstract and objectives. However, each student was evaluated individually for his/her presentation. The presentations were evaluated in terms of content, visual aids, and presentation skills. Using the grading rubrics, peer evaluators determined the presentation scores. The scores of each peer evaluator were averaged to determine the final individual presentation score. The faculty member also evaluated the presentation, but the faculty score

Table 1. Elements of an Abstract for a Traditional Biomedical Research Presentation Versus Those for a “Taking Sides” Presentation

Biomedical Research	“Taking Sides” Presentation
Title	Title
Author(s)	Author(s)
Introduction	Issue/problem
Methods	Background
Results	Evidence
Discussion	Analysis
Conclusions	Recommendation

Table 2. Grading Scale Used in a Pharmacy Seminar Course

Focus Area	Maximum Points
Abstract	15
Objectives	15
Presentation (Content)	25
Visual Aids	10
Presentation (Skills)	25
Attendance/participation	10
Self-evaluation	15
Total	115

^aAdjusted for a 100-point letter grade scale

was not accounted for unless there was a difference of more than 10 points between the faculty score and the mean score given by the other student pairs.

Other team pairs were asked to provide immediate oral feedback after each presentation. Students were asked to report on the positive strengths of the presentation and provide suggestions for improving the presentation. The faculty member also provided feedback to students individually outside the class period.

The class was encouraged to participate in the presentations by posing questions and also by using a personal response system Qwizdom (Quizdom, Inc., Puyallup, Wash). Students used clickers to provide input on the presentations according to the following questions using an excellent to poor scale: (1) rate the strength of the pro evidence; (2) rate the strength of the con evidence; and (3) did the pair effectively communicate opposing viewpoints? These participation strategies also provided an opportunity for students to practice critical-thinking skills. Use of the personal response system also permitted the instructor to monitor class attendance. Points were awarded for attendance using the following scale: 10 points for perfect attendance; 9 points for 1-2 absences; 8 points for 3-4 absences; 0 points for absence of 5 or more times.

ASSESSMENT

During fall 2006 and spring 2007 students achieved an average score of 87.8 on their presentations. The total possible points for the presentation was 90 points.

The faculty member chose not to delineate a grading rubric for the self-evaluation of learning. Student reflections

that exemplify the general essence of comments for each specific self-reflection question are found in Appendix 3.

Class evaluations using the audience response system indicated over a 95% good to excellent rating on strength of evidence and effective communication of opposing viewpoints by the student pairs.

A course evaluation was administered at the end of each semester. Student responses are presented in Table 3. The overall evaluations indicated achievement of course goals.

DISCUSSION

The major challenges addressed by this course design included: (1) develop oral and written presentation skills and address other curricular outcomes; (2) require only 1 faculty member to address course goals in a 50-minute timeframe; and (3) keep students engaged in the class throughout the semester. By using emerging contemporary practice issues as the focus for the content of the presentation, students also developed analytical skills. Students learned to approach emerging practice issues from opposing perspectives. With ready access to Internet technology, many students were also creative in including movie clips and other visual arts for “media in” their PowerPoint presentations. Because students had a choice in what emerging issue they presented, they were more likely to be passionate about the perspective chosen. For example, a student who was a mother and had personal experience with adverse effects from immunizations presented a passionate argument against mandatory childhood immunizations. When discussing the regulations

Table 3. Pharmacy Students’ Responses Regarding a Seminar Course on Contemporary Pharmacy Issues, %

Survey Item	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
The course enhanced my appreciation of the concept of ‘strength of the evidence’ as a tool for supporting my recommendations on the specific policy issue.	23	51	18	1	6	1
The course enhanced my presentation skills	31	42	19	2	5	1
The course further developed my skills in providing evaluations	17	52	20	6	4	1
I enjoyed the course	17	41	28	8	4	2
The learning environment was conducted in a supportive manner	39	48	9	3	1	0
The working in pairs as a team was effective in achieving course outcomes	46	35	9	4	5	1
My learning goals were achieved	28	55	13	2	2	0
I developed an appreciation for an opposing perspective contrary to my own personal one for a specific policy issue	27	49	15	5	3	1

of herbal products by the Food and Drug Administration, another student shared his personal perspectives about his father's use of herbal products. Student pairs were challenged to concisely address key pro and con perspectives because they were only allotted 15 minutes for their presentation.

According to the rubrics developed, all students were able to demonstrate achievement at the good to excellent level. One limitation was the possibility of grade inflation resulting from using peer evaluation scores for the presentations. However, the faculty member also evaluated the student presentations and these scores did not differ by more than 5 total points from the peer scores. Another limitation is that a high percentage of the grading points were focused on the presentation skills and less on the analytical skills. However, for a 1-credit seminar course, it may be unrealistic to expect students to extensively improve both their critical thinking and verbal and written presentation skills.

The process of peer evaluation helped to further develop the skills necessary for providing feedback. Providing peer evaluations is a challenge for students because they struggle with criticizing their peers. Thus, the emphasis of the evaluations was on providing constructive feedback and never on negative aspects of the presentation. The use of an audience response system also allowed for immediate, anonymous, and non-threatening feedback to the presenters. Using the clicker system, the presenters could choose to release the response data to the class or not. Most students chose not to release the response data even though the peer evaluations were very positive. Using an audience response system helped to keep the students engaged in the class.

The placement of this course in the curriculum seemed to be appropriate. Students have already completed introductory pharmacy practice, drug information, literature evaluation, health care system and over-the-counter and self-care courses and are in the beginning of integrated therapeutics courses in cardiovascular and endocrine systems when they take this course. These courses provide adequate background and help the students identify an emerging practice issue to research.

The faculty member involved in the course found the presentation approach for a pharmacy seminar course to be very satisfying. The approach was highly effective. The self-evaluation of learning indicated that students achieved learning goals, learned key concepts, were able to identify areas for improvement, and found working in pairs to be an effective method of learning.

SUMMARY

A pharmacy seminar course intended to develop student presentation skills and critical thinking about contemporary pharmacy issues was demonstrated to be successful. The "taking sides" format was an effective design to develop these objectives.

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Appendix 1. Issues in Pharmacy Chosen as Topics for a Pro/Con Presentation for a Seminar Course

- Should pharmacists be allowed to prescribe?
- Should marijuana be legal for medicinal purposes?
- Drug formularies are an effective management tool.
- Do consumers benefit when prescription drugs are advertised?
- Should electronic prescribing be required for issuing a prescription?
- Should a minimum of a BS degree be required for entry in Pharmacy school?
- COX2 inhibitors should be removed from the market.
- There should be one pharmacy association representing the interests of pharmacists.
- Should pharmacists have the right to refuse to dispense the morning after pill?
- Should herbal medicines be regulated by the FDA?
- Are too many children receiving Ritalin?
- Should all pharmacy students have experiences that ensure cultural competency?
- Should the US stop the importation of drugs?
- Should +/- grading be implemented in the school of pharmacy?
- Sleep medications are over advertised and over-prescribed.
- Should childhood immunizations be voluntary for enrollment in school?
- Should all pharmacy students have required courses and experiences in geriatrics?
- Should Internet access be a required resource for pharmacist in their pharmacy?
- Should selling of cigarettes be outlawed in pharmacies?
- Do alcohol advertisements influence young people to drink more?
- Should needle exchanges programs be supported?
- Do the advantages of anti-depressant drugs outweigh their disadvantages?
- Do childhood immunizations increase the risk for autism?
- Should internet pharmacies be outlawed?
- There is too much focus on therapeutic management of disease as opposed to preventative health care.
- Only pharmacy technicians who are certified should be employed in pharmacies.
- There should be federal priced controls to prevent people being priced out of needed therapies.
- Direct to consumer prescribing of prescription drugs should be outlawed.
- Type I diabetics should be on inhaled insulin.
- Statin cholesterol lowering agents should be OTC status.
- Should heroin use be legal for terminally ill patients?
- Should all pharmacists complete a residency prior to becoming licensed to practice pharmacy?
- Should employees be required to participate in drug testing?
- Pharmacists should not sell natural products.
- Should pharmacists obtain separate from the drug product reimbursement for cognitive services?
- Are the adverse effects of smoking exaggerated?
- Is the pharmaceutical industry responsible for the high cost of prescription drugs?
- Insurance companies should not pay for medications for patients with HIV disease due to life style behaviors.
- Should all hospitals have pharmacist as part of an antibiotic use and surveillance team?
- Should mandatory quality assurance processes be required for community pharmacy practice?

Appendix 2. Evaluation Criteria and Rubrics for Evaluating “Taking Sides” Presentation

Scoring: Excellent – 5 Good – 4 Adequate – 3 Less than adequate – 2 Poor – 1

1. Abstract

- written clearly and concisely
- adhered to a format
- references according to accepted guidelines

2. Objectives

- written clearly and according to the guidelines provided
- are measurable
- identified various levels of taxonomy of learning

3. Presentation (Content)

- discussion of objectives (coverage, necessity, relevancy)
- organization (logic, flow, concise); introduce and conclude appropriately
- accuracy of information
- appropriateness for intended audience
- effective case made for side (supporting data – strength of evidence)

4. Visual Aids

- sides/overheads/flip charts etc (organization, readability, typographical errors)
- effective use during presentation

5. Presentation (Skills)

- clarity (loudness, pronunciation, terminology)
- timing and pace of the presentation
- non-verbals (eye contact, use of notes, mannerism, gestures)
- response to questions (understanding, level of confidence, thoroughness)
- effective communication of perspective

*For each bulleted point, students can earn a maximum of 5 points. The maximum points for each major focus area are delineated in Table 2. For example, there are three criteria for the abstract and the total points possible is 15 points.

Appendix 3. Student Self-Reflection of Learning

1. Did you achieve your learning goals?

- Universally, all stated they achieved their learning goals.
- Learned to use evidence to support perspective.
- Was a very good exercise in accomplishing many objectives at one time.
- Enhanced research and presentation skills
- Able to apply and interpret evidence.
- Presentation followed the learning objectives.
- Killing two birds with one stone. Learning about pharmacy topics and practicing presentation skills.

2. Key concepts learned

- There are many different ways to look at key issues
- Learned that this was a key issue around the country
- Learned about grade inflation which I had never heard about before
- Learned how to evaluate the validity of sources
- I learned from others and adapted things about delivery styles that I liked
- Learned much through practicing my delivery of presentation
- Learned to acquire knowledge and skills from different sources; lifelong learning
- Takes time and effort to be successful
- It all comes down to preparation
- Learned presenting skills, listening skills, and researching skills;
- How to use technology
- Team work skills; tasks need to be delegated and both members of the team must be open to communication
- Learned to adjust myself to others work style and pace
- Needed to analyze and interpret data and then make a recommendation
- Peer evaluation process was helpful.
- Presenting on controversial contemporary issues is a great way to learn
- Learned how important objectives are for setting the stage for a presentation
- Allowed one to keep an open mind about issues
- How to work effectively as a pair towards a goal

3. Working in pairs as an effective method of learning

- Beneficial to examine two different perspectives when evaluating controversial topics
- Learned to collaborate as needed

- Working in pairs encourages use of both members' resources in solving a problem
- You learn from one another because a person has views that you may never thought about or have a unique way of looking at things
- Having a partner is perfect for the type of presentation
- Enjoyed working in pairs; wanted to effectively present side, but at the same time help partner as well
- Discussed ideas, shared findings, and provided feedback
- Gained a much wider grasp of the material; discussing with partner helped to embed the information more in mind
- Needed to convince each other of perspective and as time went on it required to meet in the middle of the issue.
- Partner comes up with thoughts and ideas that you hadn't considered before
- Two heads are better than one; provides new ideas
- Provides for different interpretation of articles
- Project strengthened friendship even better than before
- Learned the thought processes of others and how they approach issues and solve problems
- Easier to work than in group of four or five people
- Great success; putting our thoughts together and helping each other through this project
- Is very effective because it exposes you to a lot of different ideas and opinions
- Developing a pro and con perspective enhanced competition and made me research my perspective in a deeper fashion so that I could win the debate.
- Worked well because we both had suggestions to enhance the other's part better
- Was good because you had to be responsible as someone else was relying on you
- Was a way for me to see something through someone else's eyes and approach ideas differently than what I am used to
- Allowed me to be exposed to different side of the issue
- Liked working in pairs more so than a group
- Provides a different perspective so can formulate a well-rounded opinion on the subject
- Helped me to exceed my performance
- Helped for brainstorming on ideas that made the presentation better
- Provided for new and insightful reasoning to support a stand
- Helped me to understand qualities about myself

4. Areas for improvements

- Do not rely too much on technology
- Better preparation would have helped things go more smoothly
- Topic was broad in some cases that had difficulty in putting a handle on the relevant research information
- May try to use multimedia and more visuals
- Try to get audience more involved
- More eye contact
- Practice presentation more
- Less reliant on notes
- Use of more primary literature
- Slow down; speak more slowly
- Narrow the topic
- Cite references on slides
- Less bias in recommendations