A large, lecture-based course in human resources management for pharmacists (HRM) was redesigned using a problem-based learning (PBL) format in order to provide a more learner-centered environment. Ill-structured problems were developed to help students build an understanding of the complexity of HRM practices as well as to improve skills in communication, teamwork, problem-solving, project management, conflict resolution, and leadership. A PBL format was integrated throughout the course using a single facilitator model and progressive disclosure cases. Students were assessed at both the individual and group level using written reports, quizzes, in-class writings, and the creation of a reflective course portfolio. Subjective and objective evaluations indicated that students improved both content knowledge and higher level cognitive skills such as problem-solving, conflict resolution, and communication during the course. The student portfolio was found to be a successful tool for assessing individual learning and the effectiveness of the course as a whole.

INTRODUCTION
In 1998, a course in human resources management for pharmacists (HRM) at the McWhorter School of Pharmacy (MSOP) was targeted for conversion to a problem-based learning (PBL) format under the Samford University PBL Initiative. This three-year project, supported by $1,000,000 in grant funding from The Pew Charitable Trusts, was designed to examine the potential of PBL and related strategies in higher education, to determine the effect of implementing PBL on student outcomes and to determine the cost to the University of such implementation. Although much has been written about the use of PBL in various educational settings, including pharmacy schools, the use of such instructional methodologies in a pharmacy management course had not yet been reported in the literature. This paper focuses on the redesign of the HRM course into a format. General strategies to incorporate PBL and active learning (AL) into courses of all types were reviewed during the development and delivery of the course and resources that were found to be particularly helpful, both in the area of human resources management and PBL, are listed in the selected bibliography at the end of this paper.

BACKGROUND FOR COURSE REDESIGN
When the entry-level doctor of pharmacy curriculum at MSOP was developed a new management sequence was introduced...
that included two required courses, including fiscal management for pharmacists (FM) and HRM(I). The HRM course, first taught in spring 1997, was designed to provide an overview of what was believed to be the most important and practical personnel management skills needed by a new pharmacist, regardless of practice setting. The course contained approximately 100 students and was delivered in a traditional lecture format by a single instructor. While it was felt that the course was meeting its original objectives the students’ general lack of understanding and appreciation of human resources concepts and their relevance to the actual practice of pharmacy was disappointing. In 1999, the course was redesigned using PBL methodologies with the intention of providing a learner-centered environment that used ill-structured problems to help students build an understanding of the complexity and ambiguity of human resources management practices as well as to improve practical skills in written and verbal communication, teamwork, problem-solving, project management, conflict resolution, and leadership.

GOALS AND OBJECTIVES OF REDESIGN

The first two offerings of the HRM course (1997 and 1998) provided students with only minimal opportunities for the development of self-directed learning and allowed for minimal integration and application of course material. The goal for redesigning the course was to provide students with an opportunity to actually practice the skills above in the context of pharmacy management scenarios. To achieve this goal, a PBL format was used to layer broad management concepts over specific clinical practice skills or situations. Most students had little to no background in the content area of the course. Therefore, the purpose was not to produce specialists in organizational theory or personnel managers. Rather, it was hoped that students would leave the course with a general understanding of basic, practical skills that all pharmacists need when supervising others, regardless of job title or setting.

Desired student outcomes included an emphasis on the process of problem-resolution, application of content materials to contemporary pharmacy practice management problems, and integration of information within the class and with other pharmacy courses taught in the third year of the curriculum. Based on the goals and challenges associated with the course, the research questions when converting the course to a PBL format for Spring 1999 were:

1. How can active learning techniques, including PBL and group work, be used most effectively in a large class to teach students the knowledge and skills required for optimal pharmacy management?
2. How can student and instructor course portfolios be used to better assess and improve the processes of teaching and learning that go on in this class?

DESCRIPTION OF THE TEACHING INNOVATION: GENERAL DESCRIPTION OF COURSE AND STUDENTS

The course is offered in spring semester of the third year of a four-year curriculum. Other required social and administrative sciences courses in the curriculum include Health Care Systems in the first year, Pharmacy Law in the second year, and FM in the Fall of the third year. Ninety-four students were enrolled in the class during the spring 1999 semester, 80 percent of which were women. Few students, if any, had taken a prior course in human resources management although most had worked as a pharmacy technician and had experienced problems related to the course content.

Redesign of Class Format and Content

In 1998 it was determined that a pharmacoeconomic module on humanistic outcomes did not flow well with the rest of the HRM course material. Therefore, in 1999 this topic was moved back to the FM course. Otherwise, course content was not changed during the conversion to a PBL format. The class format, however, changed significantly to include a variety of PBL and active learning (AL) techniques. For example, in the redesigned course, students were still held responsible for preparing individual work on cases, but a group report and ongoing small group discussions were added. In addition, students were actively involved in self, peer and group process assessment and all examinations included a group component.

Course objectives were refined based on those developed by the American Association of Colleges of Pharmacy (AACP) for classes in the Social and Administrative Sciences(2) and were expanded to include skills that were expected to be developed through the use of a PBL learning format (see Appendix A and B). Two books from the “One Minute Manager” series were chosen as new texts(3, 4).

The PBL format was integrated throughout the course through the use of modules that addressed basic concepts of human resources management and layered broad management concepts over specific clinical situations. Specific objectives were also designed to accompany each of four module topics (see Appendix C), which were Organizational Structure and Culture (Case 1), Supervisory Skills I: Employee Selection Skills (Case 2), Supervisory Skills II: Conflict Management Skills (Case 3) and Personal Development and Career Preparation (Case 4). Students worked through three progressive disclosure-style cases (Cases 1, 2, 3) in assigned groups with each case lasting three to four weeks. These group cases incorporated both individual and group assignments, progressed from least to most complex content material and built on each other in the development and use of skills. For example, the completion of Case 3 required that students be able to understand and apply organizational structure concepts from Case 1 as well as conflict management concepts introduced in Case 3. Students were also assigned one individual case (Case 4) that was spread out over the entire length of the semester.

Each module was introduced using at least one problem-based lecture given by the instructor, followed by group work to solve more complex problems. Students first received the written case scenario and spent some time in groups identifying unfamiliar terms or concepts and formulating hypotheses regarding possible human resources problems and solutions that appeared in the scenario. The instructor then used the case scenario in a problem-based lecture as an example of the concepts presented. A combination of AL and PBL assignments and activities gave students the opportunity to develop and practice their own leadership skills within a small group setting. Strategies used during the course included think-pair-share discussions, individual and group assignments, simple and complex cases, individual objective exams, group essay or case exams, peer and self assessment of skills developed during the course, role playing and student course portfolios. In addition, case content allowed for the integration of content.
material throughout the course culminating with a case (Case 3) that included content material on oncology from a concurrent therapeutics course.

The products listed in Appendix D were all developed or revised by the instructor for use in the PBL version of the course. Handouts were placed on the campus network so that all students had access to instructional material even if it was not covered in a lecture in class, including the instructor’s notes from previous offerings of the course.

Case Development

Simple cases on the topics of organizational structure, interviewing and hiring staff, and conflict management had been developed by the instructor for the first offering of the course in 1997 and had been revised in 1998. Because it was felt that these were key content areas, these topics were kept but cases were significantly revised to make them more formal and organized and the final written case report was changed from an individual assignment to a group assignment. In addition, career development assignments were consolidated into a single case (Case 4) to be completed by each individual with portions of the final assignment due throughout the semester.

The biggest change in the delivery of the cases themselves was that they were converted from a “single disclosure” format to a “progressive disclosure” format. This technique was found to be an effective way to deliver HRM course content using a single course facilitator. Students were less likely to be overwhelmed with the information in a complex case when it was presented in a stepwise fashion, even if multiple pages of information were revealed in a single class period. The progressive disclosure of information also forced students to focus on and analyze the information given in each step rather than rushing to the end of the case without discovering all of the important issues. Although case preparation took longer for the instructor when using a progressive disclosure format, it appeared to contribute to an improved outcome in student learning for the reasons discussed above.

Course Policies and Procedures

The syllabus was expanded to include the instructor’s teaching philosophy, an explanation of why management skills were important for pharmacists, a definition of PBL, an explanation of course format, and policies for group work, cases and student assessment(5). Because of the increased length of the syllabus, a table of contents and cover memo were also added to assist students in finding specific material within the syllabus.

Students were divided into 23 groups consisting of four to five members. Groups were chosen using random sampling techniques adjusted somewhat for student gender, culture and other classes each student was taking the same semester (the same groups were also used in other non-PBL third year courses during the same semester). All students were placed in only one group, regardless of the number of courses using the pre-assigned groups. Each group developed their own ground rules during the first two weeks of class and kept a group notebook of work. Group members rotated roles with each project so that everyone had at least one opportunity to serve in each role. Designated roles for groups were the supervisor, scribe, motivator, thoughtful skeptic and researcher. Groups with less than five members were asked to rotate the role of researcher within the group. Supervisors acted as “middle managers” who served as a liaison between each individual team and the instructor for communication, reporting, and assessment.

Course Logistics

The three-credit hour course met two days a week for one semester (15 weeks). A one hour Tuesday class each week was used for problem-based lectures and the introduction of exercises or cases. A two-hour Wednesday class each week was used for small group work and class discussions. Approximately one-half to two-thirds of the class meeting time was spent in group work and during the entire semester only five problem-based lectures were delivered by the instructor.

Redefining the course created challenges related to practical logistics and use of physical space. For example, there is currently no physical space available in the MSOP to accommodate having either a separate meeting room for each group or a single meeting room large enough for all groups to have enough privacy to work efficiently and effectively. The class met in a large room in the MSOP that had been renovated during the previous summer to accommodate 110 students working in small groups using movable tables and chairs. The room was equipped with a microphone system, slide projector, overhead projector, and a computer system for the use of PowerPoint presentations and Internet searches. Six other smaller rooms were also used during the semester for group work.

Facilitation

The instructor facilitated all class group work and case discussions with the exception of two role-playing activities. Because this was the first time that PBL had been used by the instructor in this class there was some uncertainty as to the time requirements for case discussions and group work. As a result, both the instructor and the students had to remain flexible and the schedule was adjusted as the course progressed.

With only one facilitator for 94 students the case discussions had to be highly structured. The spokesperson of each group (a rotating role) was responsible for reporting answers and sharing comments with the rest of the class. In an attempt to make the discussion more interesting, two other techniques were also used to cover case material. First, entire groups took turns going to the board to report and explain their case answers to the rest of the class (“board exercises”). Second, “Round Robin” discussions were conducted in which a spokesperson from each group stood at their seat and shared a quick answer with the class. The spokesperson changed with each question or issue discussed so that all group members had an opportunity to contribute.

While these types of discussion formats were helpful in allowing a single faculty facilitator to assess the progress of each group, they have limitations. For example, with the large number of students involved it was difficult for a single facilitator to keep students accountable for individual student participation. Other options for facilitation in this course need to be explored that will ensure that students have the guidance they need as well as the freedom and flexibility to contribute to a worthwhile and interesting discussion. In the future, local practitioners may need to be trained as facilitators and used as additional resources for cases and/or group work in the management courses.

Student Assessment

Students were assessed at both the individual and group level using a number of embedded and summative techniques (Table I). Cases 1, 2, and 3 included both an individual and a group written component that was assessed by the instructor. Each student prepared a typed memo addressing individual learning issues (average length of three pages each) while each
group completed a typed report with an attached cover memo addressing case solutions and justification of group answers (average length of 10 pages each). Case 4 was assessed by the instructor based on a review of written career goals and curriculum vitae. The mean group score for each question on the peer assessment was calculated by the instructor and provided as feedback to the student for comparison with their own self-evaluation score. The purpose of this comparison was to provide an opportunity for students to evaluate and improve their own self-assessment skills as well as to improve their performance in areas that other group members felt were weak. Peers also completed a standardized assessment of the case leader’s (supervisor’s) leadership skills and anonymous comments on strengths and areas for improvement were returned to students in written format. Finally, students were given the option of completing either an individual take home exam or a comprehensive course portfolio at the end of the semester.

EVIDENCE OF STUDENT LEARNING

Student and instructor assessment results provide both subjective and objective evidence that students did indeed improve their content knowledge as well as problem-solving, communication and teamwork skills during the semester. Each form of assessment that was used to determine student performance in the course is discussed briefly below.

Instructor-Developed Course Pre- and Post-Test

Ten questions from the pre-PBL final exam for the HRM course were made into a pre- and post-test for the PBL version of the course. Tests were taken by each group during the first and last weeks of class and were scored for correctness as well as for the group’s self-reported confidence in their answers. While groups had no statistically significant change in the number of questions that were answered correctly they did have a statistically significant ($P<0.01$) increase in their confidence level on the post-test. The test questions focused on the memorization of facts rather than the application of material and thus, were poorly designed to reflect learning about the actual skills acquired during the PBL course. Confidence levels may have increased simply because of students’ familiarity with the content material by the end of the course.

Comparison of Exam Grades Pre- and Post-PBL

Average exam grades for the Spring 1998 (pre-PBL) and Spring 1999 (PBL) class were reviewed by the instructor at the completion of the PBL course. However, direct comparisons in student grades could not be made because of the difference in exam format and timing. For example, in the Spring 1998 class there were two exams that were based entirely on individual student work. In the Spring 1999 course there were two group exams and for the final exam grade students had the choice of completing a comprehensive take home exam or a course portfolio. As a result, no conclusions could be made regarding differences in exam grades pre- and post-conversion to a PBL format.

Instructor-Developed Final Course Assessment

The instructor developed a personal course assessment tool based on examples in the literature and samples from other courses. Students were asked to rate the importance of 19 skills in their success in the course. No pre-PBL data are available for comparison; however, some interesting results were noted that indicate that many of the reasons for the use of a PBL format were achieved in this class (Table II). In general, students indicated that lower order cognitive skills such as memorization

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<th>Table I. Assessments of student performance</th>
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<td><strong>Activity</strong></td>
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<tr>
<td>Preliminary written report for Cases 1,2,3</td>
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<td>Final written group report for Cases 1,2,3</td>
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<td>Contribution to Verbal report for Cases 1,2,3</td>
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<td>Written assessment of contribution to group</td>
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<td>Written assessment of leadership skills</td>
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<td>All written components of Case 4</td>
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<td>In-class writings (2)</td>
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<td>Exams (2)</td>
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<td>Final Exam or Portfolio</td>
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<tr>
<th>Table II. Instructor’s final course assessment: Student ranking of skills important for success in PHRD 525 (Human Resources Management for Pharmacists)</th>
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<tbody>
<tr>
<td><strong>Response</strong> = 98.6% (94/95) <strong>Percent</strong></td>
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<tr>
<td><strong>Collaboration with others</strong></td>
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<td><strong>Interpersonal skills</strong></td>
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<td><strong>Trust in other students</strong></td>
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<td><strong>Written communication skills</strong></td>
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<td><strong>Verbal communication skills</strong></td>
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<td><strong>Application of material</strong></td>
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<td><strong>Personal initiative</strong></td>
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<td><strong>Attendance</strong></td>
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<td><strong>Problem solving skills</strong></td>
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<td><strong>Learning new information</strong></td>
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<td><strong>Conflict resolution skills</strong></td>
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<td><strong>Self evaluation skills</strong></td>
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<td><strong>Supervisory skills</strong></td>
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<td><strong>Computer skills</strong></td>
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<td><strong>Research skills</strong></td>
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<td><strong>Taking notes in class</strong></td>
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<td><strong>Prior knowledge of subject</strong></td>
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<td><strong>Memorization</strong></td>
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were not important for success in the class while higher order skills such as problem-solving, communication and interpersonal relations were extremely important. Less than 45 percent (44.7 percent) of students indicated that research skills were important for success in this course. While the goal is for more students to rank this as an important skill in the course I suspect that it is much higher than it would have been for previous non-PBL versions of the course.

Samford University Student Attitudes and Activities Assessment

All students were given a 52-question, standardized university survey addressing demographics and attitudes toward learning and learning activities (Student Attitudes and Activities Assessment or SAAA) at the beginning and end of the course. The first eight questions of both the pre test and post test addressed student demographics and questions 9-25 examined student attitudes toward learning. The post test survey included these same 17 questions plus 27 additional questions about the types of learning activities done in class. There were some statistically significant changes in mean response scores on the SAAA over the course of the semester (Figure 1). In general, students’ general attitudes toward active learning, working in groups, problem-solving, and taking personal responsibility for learning improved during the course. The SAAA will continue to be administered in this course and will be compared with MSOP and University responses.

Samford University End of PBL Course Evaluation

Another survey developed by the University was administered the last week of class during the semester prior to the HRM course and during the last week of the HRM class itself in order to obtain pre- and post-course scores. In general, students agreed that the course had increased their ability to work effectively on a team, solve real-world problems, take a more active role in personal learning, and consider alternative solutions to problems (Figure 2). Areas where the class appeared to be less effective included development of the student’s ability to identify appropriate resources and the student’s use of knowledge and methods drawn from outside the course to complete course assignments.

McWhorter School of Pharmacy Standardized Instructor Assessments

A standard MSOP Course Assessment (not PBL-specific) was completed by students during the last week of the semester. Mean scores for student assessment of the instructor in the 1999 PBL course fell below scores for 1998 in some areas evaluated (Figure 3). For example, from 1998 to 1999, when the course was converted to a PBL format, mean scores improved on six of 11 survey items, fell for four of 11 items and was unchanged for one item. However, instructor scores for the 1999 PBL course were higher than the department average for all questions.

Although expected, the drop in mean instructor assessment scores on survey items with the use of a PBL format was disheartening. However, closer review of the standardized form currently being used by MSOP indicates that some survey items are not as relevant to a PBL course format as they are to a traditional lecture format. In the PBL format, few lectures are given, and problems, cases and exams are designed to be ill-structured and ambiguous. This requires students to be more accountable for their own learning if they are to be successful. Therefore, many of the assessment criteria on the current standardized instructor assessment form may now be more relevant to student self and peer evaluations than to an instructor evaluation. These scores clearly illustrate the importance of

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5Developed through the Samford University PBL Initiative, 1998.
6Developed by MSOP faculty through the Samford University PBL Initiative, 1998-1999.
Student Course Portfolios

Students were given the option of completing a course portfolio or taking a final exam (see Appendix E for the requirements for the student portfolio). Portfolios were received from 81.1 percent (77 of 95) of the class. The level of maturity and personal insight revealed in the student portfolios and the care with which they were prepared was impressive. It was evident that the portfolio was something each student was proud of and that most students intended to keep for future reference. In their reflective writings many students commented on how much they had learned just by reviewing work from the semester and indicated that the portfolio allowed them to pull all of the content information from the course together.

In addition, the student course portfolios were found to be a successful tool for assessing both individual student learning and the effectiveness of the course as a whole. Comments and suggestions made by students in their reflective writings about the course assignments and assessment techniques provided the specific feedback needed to continue improving the content and delivery of the course. Finally, the completion of a portfolio gave students the opportunity to assess their own learning in the course and consider the potential value of this learning to their future practice of pharmacy. A student portfolio will continue to be a part of this course, either as a requirement or as a student option.

The take home final exam contained content material and short cases as well as some reflective questions. It took about the same amount of time (an average of 30-45 minutes) to grade each course portfolio and final exam. However, reviewing course portfolios was much more interesting and satisfying than was grading traditional exams.

Self and Peer Assessments

A self and peer assessment form was developed by members of the MSOP faculty and used at the conclusion of the three group cases.7 Although students made no suggestions for improvements in the form some may be required. For example, more verbal assessment of self and peers might be added, students might be asked to justify their numerical scores with narrative examples and a software program may be used to calculate the data and provide feedback to students immediately.

Instructor’s Course Portfolio, Including a Reflective Journal

The instructor developed a course portfolio using specific guidelines developed by the University (excerpt in Appendix F).7 The knowledge that a portfolio would be completed at the end of the course allowed the instructor to be much more deliberate and thoughtful in developing and delivering the course and encouraged reflection on why a specific teaching or learning component was included in the syllabus, how it could be meaningfully assessed, what learning outcomes were desired, and what products would provide acceptable evidence of this accomplishment. By providing both examples of both the products and the process of teaching, in context, the course portfolio becomes scholarly evidence of teaching skills and course improvements.

Entries were also made in the reflective journal for all class days and when other significant events occurred during the semester (excerpt in Appendix G). The journal served as a resource in which the instructor could document successes, problems, questions, concerns, and frustrations that occurred along with reflections and ideas for course improvements. In the future the journal can also be used as a method of self-assessment of instructor performance in the classroom.

CONCLUSIONS AND FUTURE DIRECTION

The greatest limitation to the implementation of the PBL format was the large amount of faculty time required. For example, extra time was required from past offerings of the course for developing cases in a progressive disclosure format, planning class logistics, dealing with group conflict problems, processing student self and peer assessments and planning in-class learning activities. Another limitation was that in order to make time for the expanded case material and group work sessions, lecture time on some theoretical topics was decreased. For example, lecture time on the following topics was either decreased or eliminated: organizational changes in health care (decreased), organizational theory (decreased), organizational decision-making and decision-making theories (eliminated), student presentations on career options (eliminated) and four “real life” presentations by outside speakers (eliminated).

Still, course assessment results provide both subjective and objective evidence that students did indeed improve their content knowledge as well as problem-solving, communication and teamwork skills during the semester. A PBL format can successfully be adapted to a large pharmacy administration course using a single faculty facilitator and PBL is an appropriate instructional design method for teaching pharmacy students the basic concepts of human resources management.

References


APPENDIX A.

Course Objectives for PHRD 525 before implementation of PBL Format (1998).

Objectives: During this course the student will acquire the knowledge and skills to make informed human resource management decisions in the health care environment. At the completion of this course, the student will be able to:

1Developed through the Samford University PBL Initiative and available at: http://www.samford.edu/pbl/aboutus3.html#Course Portfolios.
Understand
1. the role of human resources management for the efficient and effective operation of a pharmacy practice system or business
2. basic human resources management concepts and theories associated with the delivery of pharmaceutical care, independent of practice setting
3. basic concepts of personnel administration
4. potential applications of pharmacoeconomic models to examine humanistic outcomes of health interventions

Describe
1. various management styles and their strengths and weaknesses
2. pharmacoeconomics techniques for assessing humanistic outcomes and their appropriate use
3. motivational techniques for facilitating constructive changes in employee performance
4. appropriate organizational structures to deliver desired services
5. the relationship between quality improvement processes and organizational improvement

Demonstrate
1. practical application of basic supervisory skills
2. development of personal professional documents, including career goals, a resume and cover letter
3. practical application of pharmacoeconomic principles
4. professional writing and presentation skills
5. communication and cooperation with a group of peers

APPENDIX B.

Course Objectives for PHRD 525 in PBL Format (1999)

Objectives: During this course the student will acquire the knowledge and skills to make informed human resource management decisions in the health care environment. At the completion of this course, the student will be able to:
1. describe basic human resource management concepts and understand their role in the efficient and effective provision of pharmaceutical care, independent of practice setting (comprehension)
2. recognize the ambiguities of professional practice and of management (knowledge)
3. express options for personal career planning, including development of practice goals, employment letters and professional resume (comprehension, synthesis)
4. apply the management principles of planning, organizing, communicating, coordinating, and controlling to evaluate and propose changes in the operations of a pharmaceutical care practice (application, evaluation)
   a. formulate alternative solutions to organizational/legal structure problems and choose and defend a structure to deliver the design pharmaceutical services (synthesis, evaluation)
   b. identify the leadership style used in specific human resources situations and judge the appropriateness of those measures (comprehension, evaluation)
   c. conduct a basic job interview to select and defend hiring appropriate employees for a pharmacy practice site and defend that selection decision (application, evaluation)
   d. identify and develop potential applications of appropriate employee motivation techniques in a pharmaceutical care practice (comprehension, synthesis)
   e. compare conflict management techniques from the perspectives of: a peer, a subordinate, a superior (analysis, evaluation)
   f. design a strategy to resolve or prevent an employee performance problem in a pharmaceutical care practice (synthesis)
5. recognize and develop effective skills as a team member (knowledge, application)
   a. demonstrate professional oral and written communication skills, including asserting, explaining, listening, negotiating, persuading, presenting and resolving conflict and evaluating such skills in self and peers (application, evaluation)
   b. assess the work of self and peers including the ability to provide and accept constructive comments for improvement (evaluation)
   c. compare and contrast productive versus non-productive individual attitudes, skills and behaviors within work groups (analysis)

APPENDIX C.

Case Objectives for PHRD 525 in PBL Format (1999)

Case 1: Organizational Structure and Culture
Purpose: Understand and apply the concepts of organizational culture, business planning and organization.
Objectives:
1. Understand and apply the concepts of the organizing function of management
2. Identify the culture of a business
3. Prioritize business goals
4. Establish a formal business structure in which work may be accomplished most efficiently
5. Develop an organizational chart for a business
6. Develop job descriptions for employees of a business
7. Apply the concepts of span of control, chain of command, delegation, specialization and division of labor to a pharmacy organization
8. Communicate and work effectively within a team to solve a human resources problem
9. Participate in a professional discussion with a group of peers
10. Give and receive feedback for improvement in student performance

Case 2: Supervisory Skill I: Employee Selection Skills
Purpose: Understand and apply the concepts of leadership and supervisory skills related to employee selection.
Objectives:
1. Understand the concepts of good leadership and supervisory skills and apply them to a business situation
2. Develop appropriate interview questions from the perspective of the employer and the job applicant
3. Understand basic laws and regulations that relate to employee interviews
4. Practice skills for employee selection, including resume reviews and interviewing job candidates
5. Demonstrate communication, cooperation and consensus-building skills during a professional discussion with a group of peers

Case 3: Supervisory Skills II: Conflict Management Skills
Purpose: Understand and apply the concepts of leadership and supervisory skills related to conflict management and discipline of employees.
Objectives:
1. Understand the concepts of good leadership and supervisory skills and apply them to a business situation
2. Identify and understand possible reasons for problematic behaviors among employees
3. Develop an appropriate discipline plan and a conflict management plan to deal with employees who exhibit problem behaviors in the workplace
4. Use personality typing and situational leadership skills to help resolve personnel problems
5. Demonstrate communication, cooperation and consensus-building skills during a professional discussion with a group of peers

Case 4: Career Preparation
Purpose: Begin to prepare a portfolio of documents necessary for
professional employment, including a statement of career goals, cur-
riculum vita and cover letter.

Objectives:
1. Understand the purpose and uses of career documents, including
career goals, employment letters, resume, curriculum vitae
2. Develop personal career goals, resume and cover letter

APPENDIX D. (6). LIST OF PRODUCTS DEVELOPED
BY INSTRUCTOR FOR CONVERSION OF PHRD 525
TO A PBL FORMAT

Instructor’s Logistics Guide
Planned course schedule and actual annotated course schedule

Cases
Case 1: Organizational Structure
  Student case guide
  Student case
  Facilitator guide

Case 2: Supervisory Skills I: Employee Selection
  Student case guide
  Student case
  Facilitator guide

Case 3: Supervisory Skills II: Conflict Management
  Adaptation/instructions for BafaBafa© simulation
  Student case guide
  Student case
  Facilitator guide

Case 4: Career Preparation Documents
  Student case (no facilitator guide for this case)

Group Quizzes
Quiz 1: Organizational Culture
Quiz 2: Leadership and the One Minute Manager

In-class writings
Writing 1: The One Minute Manager (with student editing)
Writing 2: What I Want to Tell Next Year’s Students....

Student Portfolio (Individual work)
  Instructions
  Grading criteria

Exams
  Group pre/post test
  Final Exam

Assessment Forms
  Self/Peer Assessment (revised)
  Original Self and Peer Assessments
  Group Process Assessment

Role Form for group work

APPENDIX E. CONTENTS OF STUDENT COURSE
PORTFOLIO

Required Elements for the Portfolio
  Executive summary
  Comparison of your group’s performance and learning on two
  group quizzes with copies of work
  Comparison of your group’s performance and learning on any 2
  cases with copies of work
  Comparison of your individual performance and learning on any
  2 cases with copies of work
  Comparison of any 2 documented self assessments with copies
  of work

Optional Elements for the Portfolio (choose any 3 lines)
  Discussion of your group’s performance and learning on 1 addi-
tional case with copies of work
  Comparison of your individual performance and learning on 1
  addition case with copies of work
  Comparison of your individual performance and learning on 2
  in-class writings with copies of work
  Assessment of process improvement within your group over time
  with copies of at least 2 pieces of supporting documentation
  Other elements will be considered - please see instructor for
  approval

APPENDIX F.(6) EXCERPT FROM INSTRUCTOR
REFLECTIONS FROM COURSE PORTFOLIO

What was successful?
Development of team names, mottos and ground rules helped solidify
the groups and give them a unique identity
Use of group notebooks kept material accessible to the instructor and
all members of each group
Group quizzes worked well to promote discussion and integration of
case material
In-class writings were very successful in helping students to practice
writing and editing skills under time pressure and to learn what
their peers felt about topics
All cases worked well in the progressive disclosure format
Students seemed to enjoy preparing course portfolios and appeared to
learn more from it than they would have from a final exam; I
enjoyed reading them as well
Students and faculty alike responded well to Case 2, which allowed
small groups of students to interview four different “job applicants”
for a pharmacy position
BafaBafa© cultural simulation game was adapted for use with a large
class

What was not successful?
Case 1 needs an additional problem-based lecture for background
information
Calculation of results of assessments is time-consuming and ineffi-
cient
Some groups seemed to need their own facilitator to help them reach
the intended depth of case material
Sometimes students worked on group assignments from other courses
during my class time

What did not matter that I thought would?Error! Bookmark not
defined.
Being the only facilitator was not as hard as I had thought it might be
Separating groups into different rooms to work was not ideal but was
not as disruptive as I had expected

What surprises were found?
Students seemed to be truly engaged in Cases 2, 3 and 4
Insight, attitude improvement, course ownership and creativity found
in student portfolios
Large increase in instructor time outside of class for class preparation
and completion of group assessments
Amount of structure needed in cases for one facilitator to guide all stu-
dents
Discovery of different ways to rearrange classrooms to facilitate role
playing

What issues need further investigation?
Use of additional faculty, practitioners and/or student facilitators in
the course
Refinement of cases and pace with which information is presented
Methods for a single facilitator to keep all students accountable for
participation
Continued coordination of case material with content from other third year courses
Use of grading contracts for either individual students or groups
Most effective format for final case discussions
If student’s do not need me during group work sessions, how should I use this time?

APPENDIX G. (6) EXCERPT FROM INSTRUCTOR’S REFLECTIVE JOURNAL

Day 2 (Wednesday, 2/3/99)
We spent about half of the class period doing a team building exercise in which groups tried to build structures out of plastic straws, using only tape, paper clips, or items they had with them in class. The group with the tallest structures were to win a prize (Tootsie® pops). All of the groups really got into this activity and worked creatively together. After about 20 minutes, we had each group measure the height of their structure to determine the winner in that category. We also discussed the differences between group structures, noting that there are usually many ways to address any given problem. I took pictures of the students during this activity and post them in the classroom later in the semester. Although some students and faculty might view this exercise as a waste of one hour of class time I feel that it is essential to include some fun, creative activities at the beginning of the semester so that groups can get to know each other and “gel”.

Class Day 11 (Tuesday, 3/9/99)
Individual student reports for Case 1 were due today, after which students began work on the group reports. We did not have time to get to page 4 of the case as planned. As I circulated among groups I saw that they were not working as quickly as I had anticipated. However, most were having good discussions about the case. I was pleased to note that in many groups students were giving examples about organizational structure, supervision problems, etc., that they had experienced in their own past or current jobs. This really contributed to the discussions and helped students to understand the concepts built into the case.

Class Day 26 (Wednesday, 5/5/99)
Students completed in-class writing assignment #2 today in which they wrote a letter about the class to next year’s students. I hope they enjoyed writing about this. I got the idea off of a Listerv for collaborative learning concerning good ideas to finish up a class. I’m looking forward to reading the “letters” and my intention is to use them during the first week of class next year as an introduction to the course (with student’s permission of course). I deleted the editing portion of this assignment because students have had a lot of practice with that this year and I needed to reduce the time of the assignment so that course assessments could be done.

APPENDIX H. SELECTED BIBLIOGRAPHY

Texts
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Journals
Jang, R. and Solad, S.W., “Teaching pharmacy students problem-solving: Theory and present status,” Am. J. Pharm. Educ., 54, 161-


**Websites**

**Student Portfolios**
- http://coe.ohio-state.edu/cete/ericacve/docs/assessmt.htm
- http://ericacve.org/docs/assessmt.htm
- http://ericacve.net/db/edo/ED388890.htm

**Syllabi and case/project/exam ideas**
- http://www.rohan.sdsu.edu/dept/libst/Portfolio/Title.html/Table
- http://www.cop.ufl.edu/courses/index.htm
- http://www.udel.edu/chem/white/342-SyllabusS98.html

**PBL**
- http://www.udel.edu/pbl/
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