

TEACHERS' TOPICS

A Collaborative and Reflective Academic Advanced Pharmacy Practice Experience

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Objectives. To implement a co-precepted advanced pharmacy practice experience (APPE) focused on traditional pharmacy faculty and administrative responsibilities and reflection opportunities.

Design. A multi-faceted, reflection-infused academic APPE was designed that exposed students to activities related to teaching, curriculum revision, scholarly writing, committee service, faculty role-modeling, mentorship and development, and school-level administrative decision-making.

Assessment. Two students completed the APPE in the first 2 semesters it was offered (1 in spring 2010 and 1 in fall 2010). Formative and summative evaluations confirmed that the students achieved the APPE goals and viewed the experience as valuable, informative, and enjoyable as expressed both in reflective journal submissions and survey comments.

Conclusion. Co-precepting by pharmacy faculty members primarily engaged in traditional faculty- and administration-related responsibilities can provide students with a robust learning experience that surpasses that which could be achieved by a single mentor.

Keywords: advanced pharmacy practice experience (APPE), experiential learning, academic APPE

INTRODUCTION

The academy has long been concerned about the source of future pharmacy faculty members. The collective angst, first precipitated by the graying of pharmacy faculty members in the United States, has increased with the explosive growth in new pharmacy programs, expanded enrollments, and the development of distance campuses.^{1,2} The leadership of 2 of the nation's pharmacy practice organizations, the American Pharmacists Association (APhA) and the American Society of Health-System Pharmacists (ASHP), disseminated a white paper in 2010 outlining their concerns relative to the unprecedented expansion of pharmacy education in the United States—an expansion that has included the opening of new colleges and schools and branch campuses, in addition to matriculating larger classes at established programs (APhA, unpublished data, December 2010). While some areas of the country are becoming saturated in terms of the number of open practitioner positions, opportunities for professionally and financially rewarding clinical careers still abound if graduates are flexible in where they are willing to live and work. Senior students

fresh from a year or more of APPEs are excited about what lies ahead for them in the patient-care arena, and many elect to pursue practice-based residencies or evaluate employment offers that come with attractive salaries.

What has been a boon for clinical pharmacy practice has been a bit of a bust for graduate study and academia. The American Association of Colleges of Pharmacy (AACCP) has acknowledged this critical reality through the work of its standing committees, the Council of Deans-Council of Faculties Joint Task Force on Faculty Workforce, and by incorporating faculty recruitment, retention, and development agendas into its strategic plan.^{3,4} A variety of approaches to stimulate student interest in these research and teaching-related pharmacy career paths have been fostered by collaborative Association programming (eg, AACCP/Wal-Mart Scholarship Program) and shared through peer-reviewed publications and national presentations. One approach used by many institutions to stimulate interest in teaching careers is the elective academic APPE.⁵⁻⁸ This experience usually provides young professionals with an intense exposure to the teaching, research, and service missions embraced by most academic institutions, as well as with focused mentoring by an academician serving as a nurturing role model.

At Creighton University, the pharmacy faculty has long offered opportunities for students to elect an academic APPE in their final year of pharmacy school. These experiences are precepted by individual faculty members,

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and student experiences are generally closely associated with the work in which that individual faculty member is engaged. Although students taking academic APPEs may interact with other APPE students and with faculty members other than their preceptor, these interactions, while valuable, are generally not purposeful or defined.

Between late 2008 and mid-2009, 2 third-year (P3) students approached one of the authors (V.F.R.) to ask if an academic APPE with her was feasible. In the past, the author had gratefully acknowledged but courteously declined similar requests due to a heavy workload and the realization that not everything involved with her responsibilities as an administrative faculty member could be shared with a student protégé. However, subsequent reflection on the need to contribute to the resolution of the pharmacy faculty shortage, and recognition that competent, creative, and equally committed faculty colleagues were right at hand and willing to collaborate on such a preceptorship, prompted her to have a change of mind and heart.

This manuscript presents a unique collaborative approach taken to establish an academic APPE that was grounded in mentoring, structured through meaningful activities that emphasize the variety of responsibilities involved in an academic career, and rich in reflection opportunities. Because neither of the faculty preceptors were pharmacists, the students were exposed to clinical faculty members' roles and responsibilities during the APPE. The goals established for this elective APPE are provided in Table 1.

DESIGN

At Creighton University, fourth-year pharmacy students complete eight 5-week APPEs for a total of 40 weeks of advanced experiential education. Five of these APPEs are required: Community Pharmacy Practice, Inpatient Hospital Pharmacy, Adult Acute Pharmaceutical Care, Drug Information, and Ambulatory Care. The remaining 3 are elective APPEs but must be selected to ensure that the student receives a variety of professional experiences. Thus, the 5-credit-hour elective academic APPE described here was designed to emphasize teaching and learning philosophies, concepts, and tools that would be applicable to a wide range of teaching roles in which graduates might find themselves in the future.

Traditionally, students who enrolled in an elective academic APPE had 1 primary pharmacy faculty preceptor. This 5-credit-hour elective in academia differed from the traditional approach in that the APPE students had 2 primary preceptors: a pharmacy sciences faculty member and an administrative dean who was also a member of the pharmacy sciences teaching faculty. Two students were precepted in this collaborative APPE, the first student in

spring 2010 and the second in fall 2010. Through this shared precepting commitment, the students were exposed to a wider variety of academic experiences and philosophies. In addition to the teaching, research, and service goals commonly associated with APPEs of this type, the emphasis on formal reflection and purposeful mentoring by a carefully selected group of faculty leaders, along with exposure to school administration, made the experience unique.

During the 5-week elective academic APPE, the students assisted with teaching responsibilities in 1 of the 2 required second-year medicinal chemistry courses taught by one of the authors (V.F.R.).⁹ The first student assisted with the Chemical Basis of Drug Action II course, while the second student assisted with the Chemical Basis of Drug Action I course. Approximately 115 campus students and 75 distance students were enrolled in these courses each semester. Class met 3 (fall) or 2 (spring) times a week for 50-minute lectures, with a 50-minute recitation period occurring at the end of each week. Lecture attendance was mandatory for campus students, and all class and recitation sessions were video-streamed to distance students. The APPE students were required to attend all of the course lectures and recitation sessions.

In addition, the APPE students held optional onsite and virtual tutoring office hours each week for both campus and distance Chemical Basis of Drug Action students. The Wimba communication conference tool associated with the Angel course management system (Blackboard Collaborate, Washington, DC) used by Creighton University accommodated distance students seeking tutoring. Both APPE students were members of distance classes, and interfacing effectively and meaningfully with classmates and protégés through technology-supported means was second nature to them.

Each APPE student also was required to lead the learning activities for one class or recitation session. The first APPE student researched and delivered a lesson on taxane antineoplastic agents and crafted 2 examination questions. The second student developed several learning tools and an interactive recitation session on drug metabolism.

Several opportunities were provided for the students to engage in service to the department, school, and university. The APPE students participated on the Pharmacy Curriculum Committee and the Pharmacy Assessment Committee by mapping course objectives from required courses in the professional curriculum to the educational outcomes of the program. The students also attended several meetings of the school's administrative team, including the biweekly Administrative Committee meeting, monthly Academic Administrators meetings, and the more irregularly scheduled Executive Committee meetings. One student attended an orientation for the

Table 1. Goals and Objectives for an Academic Advanced Pharmacy Practice Experience Co-Precepted by Two Faculty Members

APPE Goals	Objectives
Introduce broad-based faculty responsibility	<ul style="list-style-type: none"> ● Classroom teaching ● Online teaching ● Committee service ● Administrative service ● Student service (student organization advising) ● Scholarly writing
Provide genuine teaching experience	<ul style="list-style-type: none"> ● Individual/group tutoring ● Learning tool development ● In-class learning facilitation (lecture or recitation session)
Promote scholarly development	<ul style="list-style-type: none"> ● Weekly ‘journal club’ discussions ● Publish editorial in peer-reviewed pharmacy education journal
Advance administrative progress	<ul style="list-style-type: none"> ● Curriculum mapping ● Active contribution to Committee discussions (eg, curriculum reform)
Enhance awareness of faculty development opportunities within the academy	<ul style="list-style-type: none"> ● School-based faculty development programs ● University-based faculty development programs
Expand understanding of academic career options through focused faculty interviews	<ul style="list-style-type: none"> ● Pharmacy Department Chairs ● AACP Academic Leadership Fellows ● Clinical faculty with practice focus of interest
Develop awareness of personal leadership strengths	<ul style="list-style-type: none"> ● Strengths Finder¹¹ (Gallup talents assessment tool)
Engage in reflection (journaling and discussion-based)	<ul style="list-style-type: none"> ● Professional goals-setting in light of personal circumstances ● Development of professional skills, strengths and aptitudes ● Expanding awareness of the ‘degree of fit’ between the above and academic life

school’s Academic Issues Hearing Board, the body that adjudicates academic misconduct and grade appeals.

Students also were required to demonstrate scholarship by identifying and researching a topic of interest for a letter to the editor of a peer-reviewed pharmacy education journal in which they shared their personal experiences and insights as pharmacy students. In preparation for this scholarly activity, the second student also was required to select journal articles related to her topic of interest for weekly journal club discussions with both preceptors throughout the 5-week APPE.

The first student participated in a book club where the entire team explored and discussed a text on preparing for the professoriate.¹⁰ The second APPE student instead completed the Gallup University Strengths Finder,¹¹ an assessment tool that allows individuals to identify which of 34 common talents they naturally possess, and explore strategies for bringing them to bear in group work and problem-solving. The student and both preceptors com-

pleted the inventory, and the results were discussed at length and broadly related to the multifaceted aspects of the academic life.

Agenda items for weekly 2-hour team meetings with both students were determined by the 2 preceptors based on the various activities the student participated in that week and on upcoming activities. A typical meeting included a review of the high points and/or any low points of the past week, specific goal setting for the coming week, and general discussion on lessons learned to date. While the preceptors came to these weekly sessions with an agenda, the discussion was always student-driven. Journal club discussions held with the second student also took place during these weekly meetings.

The topics of discussion in these weekly meeting often were stimulated by what the student had written in a reflective journal. The formal incorporation of reflection into the goals of the APPE served to personalize the experience above and beyond what would be expected

from simply completing the APPE activities and talking about them at scheduled times during the work week. Students wrote daily in reflective journals that were shared with the faculty preceptors on a weekly basis. Students most commonly wrote about the issues and realizations that were most insightful or compelling to them. Occasionally the preceptors requested reflection on a critical issue that arose during the previous week's activities or during conversation at a weekly team meeting. An example of a preceptor-initiated reflection request was for the student to explore and then discuss the multifaceted issue of student misconduct.

EVALUATION AND ASSESSMENT

The reflective journals the students kept throughout the APPE were not formally graded, but were reviewed by the faculty preceptors on a weekly basis. The students' reflective comments and questions served as the springboard to in-depth team discussions on a wide variety of academic issues. Through their robust and revealing entries, and by engaging in prolonged weekly conversations related to their developing awareness of academic responsibilities and opportunities, the students could continually self-assess their level of engagement with the concept of an academic career, and identify any concerns or constraints that might keep them from pursuing this path. Three example journal entries are provided:

"...what I am getting [in the academic rotation] is the honest to goodness, true-to-reality academic experience."

"I really don't want to finish this rotation either. Maybe that is the insight I need to really know what I should be doing as a career. . . The only drawback for me is the research area. . . I also know that some faculty members have practice sites. . . This could be a good thing, since you could bring more practice information to what you are teaching."

"I have to say that this rotation has really opened my eyes to the possibilities of a career in academia for a PharmD graduate. Although I want a residency, I explained. . . my situation (kids, husband, house). . . but, I intended to go to the Midyear meeting in December to at least meet with organizations that were offering a residency in the area."

Both APPE students established a good rapport with the second-year students in the Chemical Basis of Drug Action courses through their work as course tutors and by their active participation in the classroom. The students worked closely with one author as they prepared the lesson or recitation session to present to the class. Both APPE student sessions were well-received by the class. After the presentations, the Chemical Basis of Drug Action students were asked to provide formal feedback to the pre-

ceptors in response to questions posed by both faculty preceptors and the APPE student. A sample of the feedback obtained on the taxane antineoplastics chemistry lesson is provided in Appendix 1. Formal and informal feedback on the student-developed learning tools designed to facilitate understanding of their assigned lesson and their effectiveness in advancing content understanding during their office sessions with the preceptors also was positive.

With regard to the scholarship requirement, the faculty preceptors also provided regular and timely feedback on the drafts of the editorials the students prepared for publication. Drafts were first reviewed individually by each faculty member and then discussed by the entire team so that the ultimate advice to the student was clear and consistent. One editorial is in print¹² and the other is undergoing final review.

From an attitudinal perspective, both students exhibited a high level of engagement in APPE activities and contributed in a meaningful way to the academic mission of the school throughout their 5-week experience. These professional behaviors contributed significantly to the positive summative evaluation given to each of the students.

Student feedback on the mandatory course evaluation confirmed that the APPE was a positive learning experience. The same tool is used by all APPE preceptors, but academic APPE faculty members can eliminate questions related to direct patient care or focus responses on other pertinent groups, such as the second-year students taught and tutored by the APPE students. Both APPE students expressed a consistently high degree of satisfaction with the goals established for the APPE and their level of learning and professional growth. In the open-ended section of the evaluation, which asked for positive aspects of the experience, both students noted the impact of the reflective journals, the opportunity to look "behind the scenes" through committee involvement and dialog with administrators, the broad-based faculty mentoring they received, and (in the case of the second student) the Strengths Finder¹¹ exercise. In their completion of a brief 8-question survey instrument administered within 8 months of completion of the APPE, both students affirmed the value of the experience and confirmed that all of the goals originally established for the academic APPE had been met fully.

DISCUSSION

The experience of co-precepting academic APPE students proved to be a more intellectually engaging and personally joyful one than either of the faculty members expected. The professional responsibilities of the 2 faculty preceptors complemented one another and provided the students with a broader exposure to the academy than they

might have received from either faculty member alone. A consistent commitment of the faculty preceptors to goal setting and assessment, advanced planning, engaging APPE activities, and reflection facilitated management of the experience. Each faculty member approached the APPE with an appropriate balance of expectations and willingness to experiment with activities and strategies to meet the established learning goals for the APPE.

Reflection was a seminal component of this academic APPE and both students cited reflective journaling as a significant strength of the experience. Students regularly reflected independently on the overarching insights they were gaining about academic life and the degree of fit they thought it had with their own professional goals and family situations. The students also reflected specifically on the various activities in which they engaged. Related to teaching, both noted the professional satisfaction gained by helping second-year students think through medicinal chemistry-related questions and problems when many of those being tutored stated that they simply wanted to be told the right answer. This commitment to student learning documented a mature willingness to hold students accountable for understanding, as opposed to giving in for the sake of popularity or opting for a less challenging route to earning the students' respect. Both APPE students were pleasantly surprised at how their own critical-thinking skills related to drug chemistry had remained intact in the more than 1.5 years since they had been medicinal chemistry students. They also spoke to the challenge of developing informative and engaging class sessions with a limited amount of time to deliver them, and the fulfillment they received from establishing positive professional relationships with students.

Reflection on the moral dilemmas inherent in fairly adjudicating academic misconduct, serendipitously stimulated by a recent case and shared in an anonymous case-study format, helped these students who may have seen cheating as "black and white" to understand better the shades of gray common to these difficult situations. The students also reflected on the unexpected difficulty of writing a short editorial on a subject of interest and shared aspects of the intellectual excitement fostered by interviewing faculty leaders.

One activity that proved particularly valuable for the second student was the completion of the Strengths Finder inventory.¹¹ This activity stimulated significant and sustained discussion on issues ranging from recognizing/capitalizing on personal strengths to acknowledging/empowering the strengths of others, to advance team-based learning and patient care. Based on this positive experience, the authors are committed to using the Strengths Finder activity with all future academic APPE students.

Both students were required to submit an editorial on a timely topic of compelling interest to them to a peer-reviewed pharmacy education journal. The first student successfully completed this assignment at the end of the rotation, and her editorial was published in the *Journal*.¹² To better keep this scholarly assignment on track, the second student was asked to forward pharmacy education-related articles of interest to the faculty members for discussion at the weekly team meetings. The task of reviewing articles from pharmacy education journals to identify pertinent papers for journal club discussion helped the second student narrow her focus earlier in the APPE and select a relevant topic on which to write. Her editorial was submitted, revised in response to reviewer comments, and resubmitted for final review.

The value of the focused interviews with faculty leaders cannot be overstated. Each student found these conversations eye opening, and particularly appreciated gaining insight into how clinical faculty members maintain robust practices (including precepting) while honoring all other areas of faculty responsibility. Both students were married women and one had 2 young children, so speaking candidly with female faculty members on how attention to family fits into the academic picture was helpful in giving them a broader perspective on this career path. Fittingly, the first student was able to attend a special university-sponsored development program entitled "Women's Summit 2010: Our Climate, Our Culture" on the last day of her APPE. The second student participated in several school-based faculty development programs, and contributed to the planning of a health sciences-wide Diversity Day that focused on student contributions to the advancement of Creighton's diversity goals.

Another particularly valuable experience for the 2 students related to their participation in the pharmacy program's curriculum reform initiative. The placement of the 2 APPEs was timely in that the first student took her APPE as final implementation planning was taking place and the second when the new curriculum was rolled out to matriculating first-year students. Both students were exposed to curriculum mapping exercises and to robust discussions on issues as deceptively simple as syllabus construction and as intricately complex as content integration across programs (pharmacy and medicine). The fact that one author (A.L.L.) was serving as Curriculum Committee chair during the curriculum revision process allowed reflection on the importance and challenge of curricular quality improvement that was ongoing rather than sporadic and isolated to formal committee meetings.

The opportunity to teach is what initially attracts students to an academic APPE, and both students, while nervous to be fully in charge of a class session, enjoyed the

opportunity to design and deliver a lesson or recitation. Both students worked independently as well as collaboratively with the faculty mentor to articulate learning goals and design the lesson, and they practiced their presentation in front of a small faculty audience who provided feedback on content accuracy and delivery effectiveness. These practice sessions shored up confidence in their knowledge base, pedagogical approach, and ability to answer questions. The students both were well received by their student audience and felt satisfied with the performance aspect of the activity.

Somewhat surprisingly, both students expressed appreciation for being exposed to the administrative side of academic life and cited it as a distinctly positive aspect of the APPE. They attended meetings of the school's Administrative Committee and, with the dean's permission, were privy to discussions on sensitive issues related to school management and university finances. They joined the school's Executive Committee in interviewing candidates for faculty positions, and engaged in biweekly discussion with the academic administrators team that reports to the administrator author. Both students found value in these activities and expressed a newfound awareness of the importance of what goes on "behind the scenes." As a result, the first author, who was initially concerned about student interest and involvement in these areas, is no longer hesitant to accept APPE students who approach her.

Throughout both APPEs, the faculty preceptors witnessed growth in the professional maturity of the students as they immersed themselves in expected academic activities, gained awareness of previously unrecognized aspects of academic life, discovered their strengths and talents, and analyzed the "goodness of fit" of an academic career with their personal and professional goals through reflective journaling. Both students have graduated and, while neither has committed to a full-time faculty position, neither has shut the door on that possibility. Both have expressed their intent to teach students through volunteer precepting.

In her AJPE editorial,¹² the first APPE student noted the congruence between a responsibility to educate and (1) the mandate to the profession articulated in the Oath of a Pharmacist and (2) the expectations communicated in Standards 2007.¹³ A survey conducted after the students had completed the APPE documented that both took this important message to heart. The APPE reinforced their responsibility to educate others (eg, pharmacy students, technicians, patients) no matter where their professional roads might lead them. While family circumstances prevent these 2 students from pursuing a full-time academic career upon graduation, the authors hope that the lessons learned in the 5-week experience will live on in the graduates' commitment to precept pharmacy students in prac-

tice and, perhaps, to ultimately join the full-time faculty of a college or school of pharmacy.

SUMMARY

An academic APPE co-precepted by a senior administrator faculty member and a second faculty leader was successfully implemented with 2 fourth-year students. The pairing of mentors with responsibilities in both the traditional faculty realm and school-level administration provided a more robust and varied experience than either mentor could have provided alone. The emphasis on reflection allowed for an ongoing evaluation of the impact of the APPE on students' thinking related to career options, and helped each student judge whether a career as a full-time academician was right for them. Exposing students in a meaningful way to a variety of faculty members whose practice interests and/or family-related circumstances were similar to those of the students expanded the number of professional role models and mentors upon which they could draw as they evaluated their future. The Strengths Finder exercise proved to be a stimulus to serious reflection on the importance of self-awareness and interpersonal respect and acceptance.

REFERENCES

1. DiPiro JT. Is the quality of pharmacy education keeping up with pharmacy school expansion? *Am J Pharm Educ.* 2003;67(2):Article 48.
2. Maine LL. Tackling our taboo topics. *Am J Pharm Educ.* 2006; 70(5):Article 113.
3. Popovich NG, Davis PJ, Fuhrman LC, et al. Ensuring individual success in an academic career. Report of the 2004-05 Academic Affairs Committee. *Am J Pharm Educ.* 2005;69(5):Article S20.
4. American Association of Colleges of Pharmacy Strategic Plan. <http://www.aacp.org/about/Pages/StrategicPlan.aspx>. Accessed June 6, 2011.
5. Sylvia LM. An advanced pharmacy practice experience in academia. *Am J Pharm Educ.* 2006;70(5):Article 97.
6. Hammer DP, Paulsen SM. An innovative clerkship in pharmacy education. *Am J Pharm Educ.* 2001;65(3):284-293.
7. Selander LK, Bjornson DC. Description of an elective PharmD teaching clerkship. *Am J Pharm Educ.* 1995;59(2):273-278.
8. Brooks AD. Considering academic pharmacy as a career: opportunities and resources for students, residents, and fellows. *Curr Pharm Teach Learn.* 2009;1(1):2-9.
9. Roche VF. Antihyperlipidemic statins: a self-contained, clinically relevant medicinal chemistry lesson. *Am J Pharm Educ.* 2005;69(4): Article 77.
10. Colbeck CL, O'Meara KA, Austin AE. *Educating Integrated Professionals: Theory and Practice on Preparing for the Professoriate: New Directions for Teaching and Learning*, Number 113. San Francisco, CA: Jossey-Bass; 2008.
11. Rath T. *Strengths Finder* 2.0. New York, NY: Gallup Press; 2007.
12. Clark GA. The teaching mission of pharmacy practice: promoting academic careers early on. *Am J Pharm Educ.* 2010;74(4):Article 72.
13. Accreditation Standards and Guidelines for the Professional Program in Pharmacy Leading to the Doctor of Pharmacy Degree, Effective: July 1, 2007. Accreditation Council for Pharmacy Education. Chicago, IL; 2006

Appendix 1. Formal Feedback From Second-Year Students on Taxane Antineoplastics Chemistry Lesson Led by a Student Enrolled in an Academic Advanced Pharmacy Practice Experience (n = 71)

Evaluation Item^a	Strongly Agree, %	Agree, %	Neutral, %	Disagree, %	Strongly Disagree, %	Item Average
Well paced	38.0	46.5	11.3	0	4.2	4.14
Held attention	31.0	49.3	14.1	1.4	4.2	4.01
Complemented lesson handout	35.2	52.1	8.5	0	4.2	4.14
Facilitated learning	40.0	47.1	7.1	1.4	4.3	4.17

^a Likert scale responses where strongly agree = 5 and strongly disagree = 1.