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## Currents in Pharmacy Teaching and Learning

journal homepage: [www.elsevier.com/locate/cptl](http://www.elsevier.com/locate/cptl)

Experiences in Teaching and Learning

## Pharmacy student perspectives regarding curricular renewal with experiential alignment

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## ARTICLE INFO

## Keywords:

Pharmacy student  
Experiential  
Curricular alignment  
Introductory pharmacy practice experiences

## ABSTRACT

**Background and purpose:** To evaluate pharmacy students' ability to perform and perspectives regarding a purposeful mapping of curricular content into experiential settings for application. **Educational activity and setting:** Students were given a list of activities developed by their curricular course directors that were to be completed during their introductory pharmacy practice experiences (IPPEs). Students were tasked with completing each assignment at their community or health system pharmacy site, and verify completion with their preceptor. Students were surveyed regarding their completion of these activities, who the tasks were performed on, and the value students perceived from the exercises.

**Findings:** Students ranked that the curricular mapping to experiential courses were successful. Average student responses reflected that the activities had value and positively impacted their learning. Many students struggled to find specific patient examples to complete the activities the way the course designed them. Changes to the structure of these activities was necessary for student success.

**Discussion and summary:** Students felt that the curricular mapping of assignments into IPPEs was meaningful and improved their learning. Not all students were able to complete assignments as described.

## Background and purpose

Curricular renewal is an important process intended to improve the delivery of content and refine the pharmacy students' educational experience. During the process, curricular outcomes are mapped to individual course content to align programmatic learning outcomes with the larger institutional and Accreditation Council for Pharmacy Education (ACPE) professional guidelines. New teaching strategies and approaches should be integrated, with the goal of creating a curriculum that meets the current needs of students and prospective employers, as well as prepare graduates for future pharmacy practice.<sup>1</sup> Scientific methodology should be applied to evaluate whether the renewed curriculum produces an enhanced learning environment and optimizes the skills and practice for pharmacy graduates.<sup>2</sup> This can be used to optimize educational outcomes.

The student perspective is extremely important when considering changes to optimize the pharmacy curriculum. Nelson and colleagues<sup>3</sup> point out that the potential work environments students will be placed in, and the changing patterns of student

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<http://dx.doi.org/10.1016/j.cptl.2017.07.020>

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engagement and *how* current and future students learn, are important considerations within the curricular renewal process. Active learning strategies should be implemented. These have shown to be highly engaging and facilitate better learning than the more passive lecture model, but can pose logistical challenges with large class sizes. Experiential learning is also a key component for training a student in the health sciences, where students are given opportunities to practice their skills and reflect upon their performance.<sup>4,5</sup>

The University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences (SSPPS) renewed their doctor of pharmacy curriculum starting with the class entering fall 2012. Details regarding the previous longitudinal introductory pharmacy practice experience (IPPE) program, as well as the specific structure of the new IPPE program, are outlined in the faculty/preceptor perspective manuscript, titled “Curriculum renewal: Alignment of introductory pharmacy practice experiences with didactic course content.” Notably, the previous IPPE structure and activities functioned autonomously from didactic teaching, with crosstalk between them. A major goal for the renewed curriculum was to more closely align curricular course content with activities students completed as part of their IPPEs. Efforts were taken to develop activities that could apply didactic content in experiential IPPE practice sites. Completion of these activities would map back to the individual courses, as part of the grade in each course. Most activities were designed to take no more than 15 min in time to complete, with most activities averaging around 5–10 min to complete. A few, such as the herbal products’ literacy assignment, were designed to be completed across several visits, so the time requirements from these were longer. In addition to reinforcing students’ learning through application, it was hoped that students would be able to recognize the real-life application and relevance of the material they were learning within the curriculum. This was particularly important for the first year of the entry-level doctor of pharmacy (PharmD) program, where historical student feedback reflected a disconnect between what they were learning and the relevance that material held within the profession of pharmacy.

This article discusses whether the renewed curriculum met its goal of aligning course content with activities students completed during the IPPE program. To accomplish this, data regarding completion rates of each activity, and specifics on who the activities were completed with were collected from first, second, and third year students during the 2015–2016 academic year. Additionally, qualitative student data from annual course evaluations drawn from the E\*Value Portfolio program (MedHub, Minneapolis, MN) were utilized to evaluate students’ perception of each activity’s value and contribution to learning. Finally, as a complement to these data, and to provide individual perspectives, reflective narratives from students are included in the [Appendix](#). These narratives were taken from student members of the experiential education committee (EEC), and help illustrate some of the positive aspects, as well as challenges, faced during this course alignment. Student members of the EEC included one from the fourth-year class (the first class to experience the renewed curriculum), one student from the third-year class (the second year of the renewed curriculum), and one student from the second-year class (the third year of the renewed curriculum). This project was determined to be non-human subject research by the University of Colorado Multiple Institutional Review Board.

## Educational activity and setting

Faculty and preceptor reflection regarding the integration of didactic course content and IPPE practice activities within the renewed curriculum has previously been described. The application of course knowledge during IPPE activities was primarily focused on the community and health system pharmacy settings. For the SSPPS, “health systems” encompasses both acute care institutional settings, as well as ambulatory care clinics, such as Kaiser Permanente. All IPPE visits were structured as “blocks” of three hours for community and four hours for health system, with a requirement of four or five blocks being completed longitudinally across the semester. [Fig. 1](#) outlines the experiential courses along the left side, with the didactic courses mapping activities to each experiential course. During curriculum renewal, didactic courses were aligned with the IPPE courses to enable students to encounter patients with specific conditions when the didactic corresponding content was being taught. Core disease states such as asthma, diabetes, and hypertension were moved earlier in the curriculum, based on students’ likelihood of interacting with these patients in community settings where they were placed during the P1 and P2 years. The goal was for the students to apply learned pharmacy skills (such as counseling on inhaler technique or insulin pen training) during their IPPE.

Students’ placement into the health system environments, which encompassed both hospital settings as well as ambulatory care practices, were moved to spring of P2 and fall of P3 to align with Pharmacotherapy courses that would require a more acute care setting for skill application ([Fig. 1](#)). Course directors were tasked to identify application of content that could be performed in the IPPE setting. Students were given guidance for these assignments in the syllabi from the various participating didactic courses that was reinforced in the experiential course syllabus, which organized all assignments into a chart. Students would complete these assignments during the IPPE, and generate verification through E\*Value for their preceptor to sign off that the task was completed successfully. Failure to perform and verify these IPPE assignments would result in a penalty in the grade from the course that assigned the task. In some cases, the preceptors would utilize a rubric to grade the students’ performance with the activities; however, most activities were simply verified as “performed” without a formal evaluation on the student’s performance.

Implementation of the activity mapping faced challenges as the first class of students entered their health system environments. The initial activities planned for these settings were met with resistance by the preceptor community, as described in the manuscript outlining faculty and preceptor perceptions of the curriculum alignment. The Office of Experiential Programs (OEP) received dozens of phone calls within the first few weeks of the semester from preceptors who needed clarification or who felt the assignments were negatively impacting the practice experience they offered. This reaction was not anticipated since the initial implementation in the community setting was well received with minimal concerns. Nevertheless, changes were made immediately that year, with a more flexible menu option (e.g., pick two of the following five activities to complete) implemented. Further adjustments continued to be made for the next two years that the courses were being offered, to minimize challenges and barriers at the practice sites while

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