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Integration of Scholarship as a Written Communication Competency for Pharmacy Students in a Specialty Track Component of a Doctor of Pharmacy Curriculum

Nancy C Brahm[1*], Tamra S Davis[1,2] and Kevin C Farmer[1]

[1]Department of Pharmacy Practice: Clinical and Administrative Sciences, University of Oklahoma College of Pharmacy, USA

[2]Department of Marketing, Business Teacher Education, Illinois State University, USA

Corresponding author: Nancy C Brahm, Department of Pharmacy Practice: Clinical and Administrative Sciences, University of Oklahoma College of Pharmacy, 4502 E, 41st Street, 2H17 Tulsa, OK-74135-2512, USA, Tel: +918 660 3579; Fax: +918 660 3009; E-mail: nancy-brahm@ouhsc.edu

Abstract

Background: Professional development is an integral part of the advancement from novice to expert. Revised accreditation criteria for colleges and schools of pharmacy increasingly focus on the development of professional skills, particularly those involving communication.

Aims: To report the development of student scholarship through focused studies designed to help pharmacy students gain written communications expertise.

Methods: Deliberate incorporation of scholarship development into the didactic courses and introductory and advanced pharmacy practice experiences at one academic institution resulted in multiple publications and presentations.

Results: Twenty-four posters are accepted for national presentation. Nineteen student- authored manuscripts have been published in peer-reviewed journals.

Conclusion: This paper discusses scholarship via presentations and publications achieved through written communication activities for students participating in focused endeavors and lessons learned to guide other faculty interested in developing student initiatives in their curriculum.

Keywords: Accreditation criteria; Curricula; Scholarship; Student; Written communication

Abbreviations:

Pharm D: Doctor of Pharmacy; ACPE: Accreditation Council for Pharmacy Education; IPPE: Introductory Pharmacy Practice Experience; APPE: Advanced Pharmacy Practice Experience

Introduction

In the United States, the Doctor of Pharmacy (Pharm.D.) is a professional, not graduate degree, requiring completion of a defined set of prerequisites and four years of study in a highly structured curriculum, with finite credit hours allocated for elective study. Programs are certified by the Accreditation Council for Pharmacy Education (ACPE), which is the national agency for the accreditation of professional degree programs in pharmacy. The ACPE identifies criteria for educational goals in a variety of areas, including professional communication, to include the study and practice of written communication. The directive for this section is to develop effective strategies designed to improve patient outcomes and foster interprofessional collaborative goals [1].

In addition to these regulatory guidelines, the need for communication skills is widely documented in academic literature [2,3] and across all disciplines, including pharmacy [4,5]. To meet this need at one academic institution, written communication skills are incorporated in the learning objectives of multiple didactic courses and the introductory pharmacy practice experience (IPPE) and advanced pharmacy practice experience (APPE) rotations offered within a specialty elective track. Students could select the rotations as a component of the overall Pharm.D program. This paper documents how written communication skills are developed into student scholarship, defined as the presentation of intellectual thought, [6] as a result of the deliberate focus on written communication skills through activities, such as written discussions, case studies, and/or research projects.

Methods

The goal of developing written communication skills is a component of the pharmacy curriculum incorporated into the learning objectives of specific, defined elective courses offered in an asynchronous online class format, IPPEs, and APPEs. Through the online format, targeted writing assignments are designed to develop written communication skills appropriate to multidisciplinary healthcare professional interactions and pharmacy patrons. Health literacy in communications is stressed in addition to formal writing styles (as opposed to colloquial grammar). Requirements in the didactic courses include weekly writing assignments that challenge

students to determine the main point(s) of faculty and peer selected readings by analyzing the validity and importance of the literature, summarizing the findings of the authors, and providing constructive feedback to at least two student colleagues. Students are responsible for a reading selected by the course coordinator related to the topic for that week. Each student is required to post to the class discussion board by the weekly deadline. After posting, each student is to read and comment on the posts of their peers with the intent of generating discussion about the topics. Students also receive individualized faculty feedback concerning the content and quality of all posts, including grammatical issues and the relevance of the selected literature used by the student. To ensure all students have the opportunity to receive quality feedback, enrollment in the elective classes is limited to 9-12 students per class. The institution has a class size of approximately 100 to 120 students. Specialty tracks include leadership, pediatric pharmacotherapy, nuclear pharmacy, and psychiatric pharmacy. The total percentage of student in the programs as a percentage of enrollees approaches 13%. Confidentiality regarding the number of students interviewed compared to the number of students accepted into the specialty track is maintained within the individual programs and reviewed by the curriculum committee every third year. Students are required to complete a selection process to be admitted into a specialty track that includes an application form, a curriculum vitae, two professional letters of reference, a letter of intent describing candidate interest in a specialty track certification, expectations of the program, professional practice goals, how the candidate's unique qualities would contribute to the program, and an interview with the specific specialty track committee. This paper addresses written communication skill development within the psychiatric pharmacy specialty track only.

The didactic courses in this initiative are four psychiatric pharmacy-based online courses: psychoactive substances, traumatic brain injury, psychiatric disorders and medical comorbidities, and schizophrenia and pharmacotherapy. The course activities are formatted for the semester (16 weeks) culminating in either a final exam or final project. The format for the courses differs slightly. The structure of the psychoactive substances course focuses in one- to two-week modules addressing a specific substance or category of substances. Students read the materials from the text, or other materials identified by the course coordinator, and respond to discussion prompts. Written communication skills are developed by the inclusion of a discussion question related to the readings. This aspect of the course requires each student to provide an interpretation of the materials that includes student researched sources from primary or secondary literature references. In addition, each student must provide feedback to a minimum of two other students that provides support or refutes that discussion post. A minimum of one primary or secondary literature reference is required to support the student's discussion comments. Discussion questions are designed to expand the topic into a variety of settings, such the potential impact of socioeconomic status, access to healthcare, family dynamics, or medication/substance-related pharmacology. After completion of the weekly activities, the instructor reviews each student's posts, references, and peer-to-peer feedback. Each student receives individual comments on the selection of references, construction of the post in accordance with written communication guidelines found in peer-reviewed literature, and interpretation of the literature provided by the student. The course includes a comprehensive final exam.

Elective courses in (1) traumatic brain injury, (2) psychiatric disorders and medical comorbidities (3) schizophrenia and pharmacotherapy are formatted with a final project as the outcome. For these courses, the first eight weeks include readings and activities specific to the topic, again requiring each student to provide an interpretation of the materials, supported by primary or secondary literature references, and feedback to a minimum of two other students with the required references for support. The second half of the course is devoted to the creation of a case report for a patient of interest to each student and specific to the disease state or condition. For example, in the traumatic brain injury course, the student may have a particular interest in soccer- or football-related head injuries. The student researches the condition, provides an abbreviated review of the literature and structures a patient case formatted to include subjective, objective, assessment, and plan (i.e., SOAP note) sections. Included in the plan section is specific patient counseling information based on health literacy screening tools.

Courses are offered beginning in the first semester (Fall) of the second professional year. Course objectives related to the development of written communication skills include development of a treatment or intervention strategy including, but not limited to, developing a list of questions necessary to gather information, documenting and assessing information gathered from the individual or other sources, analyzing the situation, formulating a problem list, evaluating pharmacotherapy options as treatment or intervention strategies, and identifying outcome measures needed to evaluate success of a plan and resources necessary to increase the effectiveness of the plan. Student writing is to demonstrate components of pharmacy practice, such as problem-solving and scientific reasoning.

Apart from the 16-week didactic format, any student interested in developing written communication skills with a shorter timeline may request an IPPE in the second and/or third professional year of study. Participation in the specialty track is not required for an IPPE that emphasizes written communication. A 20-hour IPPE, either patient- or research-based, that involves creation of an individual project is offered. The student may participate in ongoing research with the faculty member. The required outcome of the IPPE includes the development of a structured abstract and/or a poster presentation.

The APPE is a 160-hour rotation with either a research or patient focus. Again, any student in pharmacy program may request a rotation that offers a focus on written communication. Specialty track participants are given firs priority for the limited number of APPE slots available. Under the guidance of the faculty member, the student develops a patient case study derived from one of the faculty member's clinical sites or participates in research under the direction and supervision of the faculty member. The research rotation may involve developing an independent research project, participating in an ongoing project, or addressing a specific patient-population focus. The student is responsible for project management and deadlines. Institutional Review Board (IRB) requirements are met for all research initiatives.

Results

Although a comparison of before and after gains in written communication cannot be made, the focus of this paper is to describe how student scholarship is facilitated. With focused feedback from the faculty member, students have been successful in preparing and presenting written scholarship on a regional and national scale. These

data reflect the work of seventeen unique students that participated in the in the elective didactic courses and professional experience rotations. The students developed the following examples of written communication scholarship through presentations and publications: twenty-seven posters submitted to national meetings with twenty-four accepted for presentation at national meetings; six were accepted for encore presentations. Nineteen students authored and submitted manuscripts: sixteen manuscripts accepted for publication in peer-reviewed journals in addition to two independently developed podium presentations for a regional meeting. Two student authors were from other programs. Data are summarized in table 1.

Topic Area	Posters	Manuscripts	Podium Presentations
Psychoactive Substances and related topics	1	3	
Schizophrenia and related topics	3	2	1
Introductory Pharmacy Practice Experience (IPPE)	2	2	
Advanced Pharmacy Practice Experience (APPE)	10	3	
Independent Project Development	8	6	1
Encore Presentations	6		

Table 1: Scholarship through written communication

Student satisfaction data are gathered via the official college of pharmacy end-of-semester evaluations. These evaluations are anonymous; it is therefore not possible to ascertain which students participated. Students that chose to participate were overwhelmingly positive in their responses and opined that strengthening written communication skills was facilitated by the peer-to-peer interactions and the high level of personal feedback from the instructor. Individual comments included '…excellent job helping individuals develop the skills and self-discipline needed to take their educational goals to the next level,' '…encouraged me to push through the process that allowed me to get a peer-reviewed paper published, '….be confident and handle myself professionally with any questions hurled in my direction,' and 'I know the experience I gained in writing the article and presenting my research will help in my career. It is very fulfilling.'

Discussion

Mentorship involved in the development of student-authored scholarship is included as a component of faculty workload. The amount of time spent developing written communication skills varies with the student. Generally by the third week in the 16-week online courses, students are able to achieve the majority of the organizational writing objectives: clear identification of the topic, well-developed discussion, and structured summation of findings in the initial post with either support or counterpoint discussions in the response posts to peers.

The APPE rotations offered a variety of opportunities for interested faculty. In this initiative, college of pharmacy faculty collaborated with colleagues in various specialty fields. The rotation projects benefited from collaboration between student(s) and faculty with expertise in multiple elective areas, such as law, statistics, and pediatrics. One of the student publications involved collaboration with another university. A separate project was created in response to a request from a community hospital. Collaborative endeavors are on-going.

Not all student projects resulted in publications or poster presentations. The scope of one project had limited generalizability, and the narrow focus was not adaptable for a manuscript. One project was not accepted for presentation, and one manuscript was rejected. One student elected to discontinue work on the manuscript.

Manuscript development requires significant faculty time. Even with development subdivided into discrete components (literature search and review, introduction, methodology, if applicable, and discussion) and a timeline for each component, mentoring and revising range from 100 to 160 hours per project. Faculty working with students to facilitate this competency must anticipate the time required to facilitate and mentor student authors adequately.

The time requirements for manuscript revising and addressing reviewer recommendations for changes are another consideration in faculty workload. The publication process may take a year or longer with additional mentorship involved throughout the submission and revision process. Each student situation is different, resulting in mentorship times that average 40–60 hours per project. It is also possible that some manuscripts will require faculty mentorship post-graduation due to the length of time required for the publication process.

Schools and colleges of pharmacy place importance on scholarship by faculty as a professional responsibility [4]. Developing student scholars is one avenue to meet many faculty job requirements. Little can be found in pharmacy literature addressing the development of student scholars, although the need for written communication skills has been recognized in the area of pharmacy practice [2,3]. Additionally, residencies are encouraged to develop clinical maturity, including the dissemination of scholarship. Mentoring students to develop scholarship provides practice for pharmacy students specifically in the areas of problem-solving and critical thinking [7]. Additionally, the mentoring faculty found that through the systematic writing process being used with the students, personal scholarly writing also improved [8]. Incorporating scholarship as a course-learning objective builds student confidence in reporting the findings of the work [9]. Additionally, mentoring students allows faculty members to participate in multiple research studies that have the potential to benefit the profession when the results are published.

A few limitations should be addressed. Due to the relative novelty of the program, aggregate scholarship data are only available for three years. Course evaluations and student feedback do not specifically address student perceptions related to written communication skills. Anecdotal responses have been positive. The number of students involved does not allow generalizability to other programs and/or institutions. In addition, resources, students, academic environments, and faculty vary between institutions. These factors may change the outcomes and time requirements for development and implementation.

Conclusion

Development of written communication skills and competencies are facilitated through development and implementation of a series of

opportunities for pharmacy students. These include participation in online didactic electives with availability of introductory and advanced pharmacy practice experiences. Student scholarship outcomes from these initiatives are reported. In addition, estimates of the amount of faculty time for each of the commitments are provided.

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