Promoting Professionalism Through Mentoring via the Internet

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A mentoring program was established to develop professionalism among University of the Pacific pharmacy students. All first year pharmacy students at the University of the Pacific are given a pharmacist mentor, and communication between the student and the mentor is via the Internet e-mail system allowing for easy, accessible on-line communication. The pharmacist mentors are recruited from across the country and practice in a variety of professional pharmacy settings. The students are able to communicate in a professional manner with their mentors throughout the student's professional pharmacy school training. The primary goals of this project are: (*i*) encourage early professionalism among pharmacy students; (*ii*) have mentors stress the importance and usefulness of didactic educational years; (*iii*) provide an overview of tools and professional goals of pharmacists; (*iv*) allow students to begin networking within the pharmacy profession; and (*v*) provide instruction for utilization of the Internet and e-mail applications. Information on the development of the project, and an assessment of the project is presented.

INTRODUCTION

A mentoring program was established at the University of the Pacific (UOP) School of Pharmacy to develop professionalism among first year pharmacy students. Mentoring has long been a viable method for fostering early professional growth of students. The mentoring experience can provide access to role models, individual open discussion, and reliable resources for practical information. The University of the Pacific School of Pharmacy mentoring program for students utilized a new form of communication. All first year pharmacy students were assigned a pharmacist mentor, and communication between the student and the mentor was via the Internet e-mail system, allowing for easy accessible on-line communication. The pharmacist mentors were recruited from across the country and practiced in a variety of professional practice settings. The students were able to communicate in a professional manner with their mentors throughout the students' professional pharmacy school training.

This project focused on first year Doctor of Pharmacy student candidates at the UOP School of Pharmacy. This class of approximately 200 students was made up of a majority of students with bachelor degrees from four-year universities. Other students fulfilled the prepharmacy req- uisites from junior colleges or had at least two years of academic work completed at four-year universities.

The project was implemented during the first semester of the pharmacy curriculum in August 1995. The School had recently acquired eighteen PowerMac PC computers for its Biomedical Informatics Center which have network and e-mail access as well as the Web browser, Netscape. Students had access to these computers during regular school hours and were also able to access UOP's e-mail system via outside connections. Content, processes, limitations and outcomes for this new, innovative project will be described in detail.

The goals of the program were to provide first year pharmacy students with a vehicle to communicate in a professional manner with pharmacist mentors and to encourage early professionalization of students. This communication was to provide students with insight into the profession of pharmacy from practicing pharmacists' points of view, while at the same time emphasizing the importance of topics covered during the didactic educational years. Objectives of the project were numerous. The first objective was to provide a method to facilitate the development of a professional relationship with a practicing pharmacist which would give an overview of a pharmacist's responsibilities in the real world. This method also fulfilled the second objec-

tive of providing the pharmacy student insight into what is needed to accomplish the tasks and professional goals of pharmacists. In addition, the mentor to student relationship was also designed to provide an experience outside of the academic setting, uniquely different from a faculty to student relationship — more of a professional to professional relationship. This program was also designed to give the pharmacy student a perspective on the importance of all classes taken in the didactic educational years from the realistic view of pharmacists/clinicians in practice. It was believed this economical method and the unique experience of networking in the small world of pharmacy practice would be of tremendous value to the pharmacy students. Lastly, the faculty wanted to teach the value of the Internet and e-mail resources to students and thus, provide data on utilizing e-mail and Internet resources for classroom teaching in a professional school.

PROCESSES/METHODS

Phase I of the program was implemented during the fall semester. To recruit pharmacist mentors for our program, the Dean sent out an announcement stating that School of Pharmacy was seeking pharmacists who would be willing to mentor a pharmacy student via e-mail communications. Letters were sent to alumni, and e-mail messages were generated to American On-line subscribers with demographic information containing pharmacist as an occupation. The Dean also recruited pharmacist mentors from various newsgroups. All pharmacists who replied to these announcements were accepted as mentors and a list of mentors was compiled, which included pharmacists in a variety of practice settings (*e.g.*, community, hospital, HMOs, managed care, university, industry, and home infusion therapy). A brief description of the program and expectations of the mentors was provided. Mentors were asked to communicate at least twice a week with their pharmacy student. New mentors were assigned to students if appropriate communication from the pharmacist mentors was not maintained.

At this time in the development of the project, a steering committee from the School was established to direct the project. This committee of seven faculty members provided ideas and suggestions to guide the project. A project facilitator was appointed to oversee the project. Reviewing the goals and objectives of the project, the steering committee went to work to design an achievable and educational program for both students and mentors.

All first-year pharmacy students were given e-mail accounts upon registration for classes. Instruction on using e-mail was provided during the first week of school. A brief manual written by UOP's computer science center on the operation of the e-mail system was made available at the book store. Students were asked to list their preferred mentor characteristics by practice site and location and were assigned a pharmacist mentor based on these preferences. Students were instructed to contact their mentors in a professional manner, keeping in mind that they were representing the school and were professional students.

To facilitate discussion between students and mentors, students were instructed to introduce themselves and develop a biographical sketch of their mentors. This assignment, along with a communication log, was to be completed before the end of the first semester. Class credit was given upon completion of the assignment.

During Phase I, a few limitations were encountered that were not anticipated by the steering committee. Although all students were assigned mentors, some students were unable to contact their assigned mentor. If students did not receive any response from their assigned mentor within two weeks of sending a message, a new mentor was assigned. The list of available mentors was continually updated. Although a brief instruction period was offered to the students, many could not effectively utilize the e-mail system. To minimize these difficulties, the project facilitator was available for assistance during school hours. The students' lack of familiarity with e-mail often resulted in unsent messages and, in some cases, hours of wasted time and effort by the students. Unfortunately, the e-mail network was slow and unexpected technical problems occurred. It was at this time that the steering committee realized that the coordinator of this project did not have a method to communicate with all of the mentors and students as a group rather than individually.

At the conclusion of Phase I, most of the students had a mentor with at least one communication contact during the first semester. Only three students in the first year class did not turn in the required class assignment. An American On-line account was established to contact the mentors as a group and to circumvent any VMS1 (UOP's e-mail system) technical problems. In addition, all pharmacy students were now easily addressed by class via e-mail by establishing class lists (*e.g.,* pharm-98@uop.edu included all the students in the first-year class). A printer for printing any e-mail messages from mentors was made available to students. First-year pharmacy students became familiar with e-mail and were able to establish a professional relationship with practicing pharmacist mentors. In addition, the school received positive feedback from students and mentors (Table I and II).

The steering committee plans for Phase II were implemented in the winter semester of the 1995-96 school year. Based on the success of Phase I, the steering committee felt the relationships that had been developed could be utilized further in the education of the students. Reviewing the project objectives, the steering committee believed this to be an excellent opportunity to enlighten the students to the applicability of core classes to practicing pharmacists. With this objective in mind, the mentors and students were instructed to dialogue on specific topics pertaining to student classwork. The steering committee proposed a plan for a "topic of the week." Each week a topic would be proposed to the first-year class for discussion with their mentors. At least one topic per semester would be posed from each of the academic classes in which the first year students would be enrolled. All mentors were given the topic a few days before the pharmacy students via UOP's American On-line account. Topics were given out in class or through e-mail (using the pharm-98 group address). The project facilitator proposed a schedule for the weekly topics, including helpful suggestions from the steering committee.

During the second semester and in the period following class finals, limitations of Phase II were identified. Since formal instructions for faculty and mentors were not provided, many faculty members teaching the first-year pharmacy students were unsure of what was expected. It was also noted that many students who did not keep up with their mentors after the initial communication did not have mentors secondary to address changes, time constraints, and lack of a response. Many out-of-sequence students (not

Table I. Survey of pharmacist mentors (n=89)

Mentor survey results:	When assign-ment is due	3X per week	1-2X per week	Every 2 weeks	Once a month
How often do you communicate with your student?	33.7%	2.3%	22.5%	22.5%	19.1%

	Yes	No	No Answer		
Has your interaction with your student been rewarding and enjoyable?	96.6%	3.4%	N/A		
Do you feel the topics were reflective of pharmacy and pharmacists?	93.3%	4.5%	2.2%		
Do you recommend this project continue for next year's class?	100.0%	0.0%	N/A		
Are you willing to be a mentor to another student next year?	95.5%	4.5%	N/A		
Do you feel this project took too much of your time?	5.6%	94.4%	N/A		

Table II. Survey of students (n=99)

Student survey results:	When assign-ment is due	3X per week	1-2X per week	Every 2 weeks	Once per month
How often do you communicate with your mentor?	29.2%	1.0%	12.5%	39.6%	17.7%

	Yes	No	No Answer		
Did you enjoy the interaction with your mentor?	70.7%	27.3%	2.0%		
Has your mentor provided you with a better picture of the profession of pharmacy?	64.6%	32.3%	3.1%		
Do you feel your mentor was an added value to your pharmacy education?	60.6%	37.4%	2.0%		
Do you feel this project took too much of your time?	40.4%	58.6%	1.0%		
Do you plan to continue to communicate with your mentor after the assignments are completed?	59.6%	37.4%	3.0%		
Were you familiar with e-mail before this project began?	68.7%	30.3%	1.0%		
Are you more comfortable with using e-mail since the start of this project?	70.7%	27.3%	2.0%		
Do you recommend this project continue for next year's class?	56.6%	39.4%	4.0%		

enrolled in the first semester classes) did not have mentors and found themselves with an assignment and no method of completing it. These students often did not have e-mail accounts and needed to be added to the pharm-98 group. Many faculty and students were still not aware of what could be accomplished on the Internet and via e-mail. Time constraints of the steering committee members limited the committee's abilities to meet and discuss issues that came up from students, mentors, and faculty. The steering committee agreed that formal guidelines for mentors, students, and faculty needed to be developed for future projects.

During Phase II, three questions were distributed to students and mentors. Students were asked to turn in a single spaced, typed, one-page document explaining and critiquing their mentors' responses to each question. Technical problems of UOP's VMS1 system resulted in e-mail not reaching some students, and messages being deleted from students' accounts. The University's computer services were unable to determine which accounts needed repair. Many mentors expressed positive reactions to the program, while others were unsure of what was truly expected from them. Some mentors reported some sense of irresponsibility on the part of students, and some students reported the same problem with mentors. This may be due to the absence of formal instruction regarding the mentor program and communication via e-mail to both the mentors and students.

The final phase of the year long program (Phase III) was implemented during the summer semester of the University's three-semester, year-round school calendar. During this semester faculty continue to provide "topics of the week" related to academic classwork for students and mentors to

Table III. Demographics of pharmacist mentors (n=156)

Work setting	Hospital	Community	Managed care	Academia	Home healthcare	Industry	Long-term care	Other or unknown
	31.1%	29,2%	3.7%	3.3%	2.5%	2.9%	1.2%	25.0%

Position or title	Staff pharmacist	Clinical pharmacist	Administrators	Professors	Consultant pharmacist	Other	Unknown	
	30.0%	18.5%	12.8%	2.5%	1.6%	11.5%	0.6%	

discuss. The steering committee met and developed a plan to promote and utilize the mentor project for next year's class. The steering committee discussed other possibilities for utilizing this data for research projects (*i.e.,* as a tool to survey a large group of pharmacists). An outline of how to direct this project for new students (Class of 1999) was developed by the project coordinator. The steering committee developed other activities and guidelines for mentors. Formal guidelines for faculty members to include this project into their classroom teaching will also be developed with input from faculty.

PRELIMINARY DATA AND RESULTS

The available and evaluable data from the students' communications with their mentors was difficult to assess. However, a few points can be made with available information.

Mentor demographics were collected from the biographical sketches obtained by students. The 156 biographical sketches showed that 31.3 percent of mentors worked in hospitals, 29.2 percent in community pharmacies, 3.7 percent in managed care, 3.3 percent in academia, 2.5 percent in home health care, 2.9 percent in pharmaceutical industry, 1.2 percent in long term care, and 25.6 percent in "other" or unknown settings. It was also noted that 30 percent were staff pharmacists, 18.5 percent clinical pharmacists, 12.8 percent administrators, 2.5 percent professors, 1.6 percent consultant pharmacists, 11.5 percent other, and 0.6 percent unknown (Table III).

Upon communication with pharmacist mentors on the "topic of the week," each student was instructed to write a brief commentary on what was discussed and how it related to what the student had learned in school. Students and mentors had various communications and dialogues regarding these topics. Each student received a different perspective of the topic and was able to ask questions or make comments relating to their own knowledge as provided in class. Mentors were able to share ideas and discuss practical issues and experiences as related to the mentors' practice setting.

Surveys of pharmacist mentors, students, and faculty were prepared for evaluation of the project. Mentors' comments have been useful for improving the current project.

Both mentors (96.6 percent) and students (70.7 percent) found the interactions to be enjoyable and rewarding. One hundred percent of the mentors who responded to the survey recommended that the program continue for next year's class with 95.5 percent of the mentors willing to be mentors to new students in the new school year. Only 56.6 percent of the students felt the program should continue. Forty percent of the students surveyed stated that this program took too much of their time and commented that the assignments were too dependent on the mentor and not the student. Most mentors (94.4 percent) did not feel that the program took too much time.

Mentors were also asked to comment on the topics assigned for discussion to the students. A majority (93.3 percent) of the mentors felt that the topics represented pharmacy and pharmacists. Students felt that mentors provided a better picture of the profession of pharmacy (64.6 percent) and added value to their pharmacy education (60.6 percent). Many of the students (59.6 percent) planned to continue communicating with their mentor after their portion of the project was completed.

When questioned about their familiarity with e-mail, many students (68.7 percent) were familiar with e-mail before the program began, although 70.7 percent of them were more comfortable with using e-mail at the end of the project. All faculty participants felt that e-mail was useful for teaching and planned to continue participating.

CONCLUSIONS

The Pharmacist Mentor Internet Project encouraged professional growth and enhanced professionalism in students. Mentors, as a resource, provided important and useful information to students not available on a typical university campus. This project provided pharmacy students, who may otherwise not have had an opportunity to interact with a pharmacist, a chance to do so early in their career.

This program was an innovative approach to give students the opportunity to interact with professionals in a variety of practice settings. However, many suggestions and comments will be addressed for next year's program.