Faculty Workload Comparison Between a Campus-based and Internet-based Patient Assessment Course

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Objectives. To compare instructor workload between a required campus-based and an Internet-based patient assessment course and to identify the sources of the workload.

Methods. Instructor workload was measured for each pathway by documenting the total time required throughout the semester to teach and maintain the course. Specific workload items that were measured included lectures, administering examinations, e-mail communications, discussion boards, phone conversations, and office visits.

Results. The Internet-based course (n=45 students) resulted in a 23% increase in total instructor workload for the semester and a 192% increase in instructor workload per student compared to the campus-based course (n=107). The majority of the additional work involved with the Internet-based course came from receiving and sending e-mail, while workload from the campus-based course primarily came from in-class lectures.

Conclusions. Faculty member workload was higher in the Internet-based course compared to the campus-based course. Similar studies on other courses should be conducted to determine if these results are course specific.

Keywords: faculty workload, Internet-based courses, teaching

INTRODUCTION

Over the past several years, many programs of higher education have begun offering courses through an online or Internet-based format. Pharmacy education is no exception. Some schools and colleges of pharmacy are now offering courses using Internet technology. One factor that faculty members and administrators must consider before offering an Internet-based course is the amount of faculty workload it will consume compared with teaching a traditional campus-based course.

Creighton University School of Pharmacy and Health Professions has recently implemented an Internet-based doctor of pharmacy distance pathway. The Internet-based distance pathway provides a full-time educational program to obtain a Doctor of Pharmacy degree that involves several innovative approaches to education. All didactic courses in the program are taught by distance-learning mechanisms, which use tools such as the Internet and CD-ROM. Interactions with faculty members and mentors occur via Internet chat rooms, discussion boards, e-mail, fax, and telephone. Distance pathway students come to campus each summer for laboratory courses and annual performance-based assessments.

To date, no study has compared the faculty workload required for teaching a pharmacy course offered to both campus-based and Internet-based students. The primary objective of this study was to compare the faculty workload (ie, amount of total time and time invested per student) to teach and maintain a required pharmacy Internet-based course versus that required for the same course offered in a traditional campus-based setting. A secondary objective was to identify the source of the workload. Prior to data collection, the study was approved by the Institutional Review Board at Creighton University as exempt from Federal Policy for Protection of Human Subjects.

METHODS

Course Content

PHA 326, Patient Assessment, is a 2-credit hour required course. Course content is identical in both the campus-based and Internet-based pathways. This course instructs student to methodically obtain and evaluate subjective and objective patient information (including pediatric, elderly, and pregnant patients) for all of the body systems. Students learn specific patient-interviewing skills and questions in order to appropriately obtain subjective information. Students also learn practical
aspects of objective patient information including physical examination and clinical laboratory data. Patient case scenarios are used to assist students in comparing and contrasting normal and abnormal physiologic function and to expose them to patient assessment skills that are commonly used in/for providing pharmaceutical care.

Course Delivery

The campus-based Patient Assessment course is team-taught and is offered during the spring semester in the second-professional year of the pharmacy program. The class meets once per week for 2 hours. The in-class activities consist of lecturing, discussing required study questions, and evaluating and discussing patient case scenarios. In addition, 2 physical examination laboratory sessions are included during the semester.

The Internet-based course is taught by a single instructor and is offered during the summer semester in the second-professional year of the program. Students obtain the exact same information as the campus-based students via a course web site that consists of lecture topics that are written and illustrated in the same manner as the campus-based lectures. Students are required to submit study questions via e-mail and participate in the patient case scenarios via a discussion board. The discussion board is a format that allows students and instructors to post comments regarding a topic or topics so that the instructor and other members of the class can read comments and reply to them, creating a sequence for the discussion. Deadlines for submitting material for each topic are listed on the course web site. The summer offering of the course allows for the laboratory session to be incorporated towards the end of the summer session while the students are on campus.

Data Collection

To ensure reliable instructor workload comparisons between the 2 courses, the data collected focused on teaching and course maintenance rather than course preparation and grading. Instructor workload was measured for each pathway by documenting the total amount of time required to teach and maintain the course each day as well as several other variables. The total time inclusion and exclusion criteria are listed in Table 1. Since the campus-based course was team-taught, a data collection form was developed to insure accurate and consistent data collection across all instructors. The data collection form consisted of all inclusion criteria listed above and was filled out at the end of the day by each instructor participating in the course. All data collection forms were collected and compiled at the end of the semester.

The Internet-based course was taught by a single instructor who used a spreadsheet for data collection of the same criteria as the campus-based instructors. To ensure accuracy of data collection, all the work performed by the Internet-based instructor was completed during 1 time period at the end of each day. The data were then compiled at the end of the course.

RESULTS

A total of 107 students were enrolled in the campus-based Patient Assessment course while 45 students participated in the Internet-based course. The male-to-female student ratio for each pathway was similar, with 65% male students in the campus-based course and 64% male students in the Internet-based course. The qualitative point average (QPA) was likewise similar between students enrolled in the 2 pathways with students in the campus-based course averaging 3.30 and students in the Internet-based course averaging 3.34. The mean age of the campus-based students was 25 years with 33% having a prior academic degree, while the mean age of the Internet-based students was 34 years with 61% having a prior degree.
The total amount of time spent throughout the semester to teach and maintain the campus-based course was 1,837 minutes versus 2,265 minutes spent teaching and maintaining the Internet-based Patient Assessment course. This represents a 23.3% increase in total instructor workload to teach the Internet-based course. When comparing the instructors’ workload per student, the campus-based course required 17.2 minutes per student while the Internet-based course required 50.3 minutes per student throughout. This represents a 192.4% increase in instructor workload per student.

A secondary objective of the study was to determine the source of the total workload for each pathway. For the campus-based course, a total of 1,837 minutes were consumed teaching and maintaining the course, of which 1,385 minutes (75.4%) were allocated to in-class lectures and examination administration, 225 minutes (12.2%) to office visits, 217 minutes (11.8%) to reading and sending e-mail, and 10 minutes (0.5%) to phone conversations. By comparison, the Internet-based course consumed a total of 2,265 minutes, of which 2,005 minutes (88.5%) were allocated to reading and sending e-mails, 220 minutes (9.7%) to the discussion boards, and 40 minutes (1.8%) to phone conversations. A summary of the time allocation for each pathway is provided in Figure 1. A breakdown of the actual number of e-mails, phone conversations, office visits, and Patient Assessment content questions is provided in Table 2.

### DISCUSSION

Distance education through the use of an Internet-based delivery system is a well-established means of transferring information. Many issues need to be addressed when considering offering pharmacy education through this pathway. One of the most important may be faculty workload. Several articles have been published addressing the issue of faculty workload as it relates to online courses. Much of what has been reported thus far has been based on anecdotal perceptions, rather than prospectively designed studies. Many articles report that

<table>
<thead>
<tr>
<th>Variable</th>
<th>Internet-based Course</th>
<th>Campus-based Course</th>
<th>Difference (Internet vs. Campus)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of Patient Assessment questions</td>
<td>91</td>
<td>57</td>
<td>+34</td>
</tr>
<tr>
<td>Average number of Patient Assessment questions per student</td>
<td>2.02</td>
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<tr>
<td>Total number of individual student e-mails received</td>
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<td>+79</td>
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<td>15</td>
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</tr>
<tr>
<td>Total number of phone conversations</td>
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</tr>
<tr>
<td>Average number of phone conversations per student</td>
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<td>+0.203</td>
</tr>
<tr>
<td>Total number of student office visits</td>
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<td>-14</td>
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<tr>
<td>Ave number of student office visits per student</td>
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<td>0.13</td>
<td>-0.13</td>
</tr>
</tbody>
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the course development and maintenance of an Internet-based program dramatically increases instructor workload.\textsuperscript{1,3-7} One study, however, did conclude that instructor workload was less with an Internet-based course compared to a similar campus-based course.\textsuperscript{3}

A survey conducted by the National Education Association in 2000 indicated that of the faculty members who have taught a distance education course, 53\% said they spent more hours per week preparing and delivering the course material compared with teaching a campus-based course.\textsuperscript{1} In addition, the survey found that the top concern for faculty teaching courses in this pathway was that they would have to do more work for the same amount of pay. Another article reports that faculty workload increased 2 to 3 times when teaching online courses versus traditional classroom courses.\textsuperscript{5} This report also states that these increases in workload led to faculty burnout and a discontinuing of some online course offerings.

To date, there have been no published reports comparing the day-to-day instruction and maintenance of a parallel course required in both the campus-based and Internet-based pathways of an educational program. In addition, there are no published reports of instructor workload comparisons from both pathways of a professional pharmacy education program. This study attempted to address the faculty workload issue from a pharmacy program perspective.

Prior to beginning data collection, faculty workload time associated with course preparation, grading, or laboratory activities would be excluded. It would be difficult to make a side-by-side comparison of preparation time because, when teaching an Internet-based course, all course preparations need to be completed for each lesson prior to the beginning of the semester. On the other hand, campus-based courses could include preparation time that may be done just prior to walking into the classroom. An additional reason we did not include preparation time was that the data collected from the Internet-based course was done during the first online offering of this course. Therefore, the amount of faculty workload to bring the course from the traditional setting to the Internet-based setting was very high and would have skewed this comparison.

The amount of time it takes to prepare a course for delivery is an important component of instructor workload regardless of the pathway. However, due to the nature of this study as just described, adding this information would have flawed the study design. This component of faculty workload could be part of an additional study comparing a well-established campus-based course with a well-established Internet-based course.

Examination grading was not included in the workload analysis because the examinations that were administered between the 2 pathways were not identical and therefore the time spent grading would not be comparable. However, the actual examination administration time was included in the campus-based course but not in the Internet-based course. The reason for this was that students in the Internet-based course took computer-based examinations, which were overseen by a proctor and, thus, did not create additional work for the instructor.

This study was designed to compare instructor workload for the courses as they were currently offered in our pharmacy program. The purpose of the study was not to alter the courses in our program in order to create flawless research design. Rather, we wanted to compare instructor workload with our current system and felt that the data obtained would be of more practical use to our pharmacy program and possibly others as well. Therefore, some research design limitations exist with this study.

The age and number of students in each class and the semester in which the courses were offered are different but are both part of the established curriculum and could not be changed. The older age and increased professional experience of the Internet-based students may have increased their comfort level and their interest in asking additional questions and therefore increased instructor workload because of the time required to read and respond to the additional questions via e-mail. In addition, offering the Internet course during the summer session when the students’ course load is a bit lighter may have provided an opportunity to ask more questions.

The campus-based course is team taught while the Internet-based course is taught by only 1 instructor. This may have a slight effect on workload due to the variation in efficiency of individual instructors. However, the authors do not believe this had a major impact since course preparation time was excluded and 75\% of the time allocated to on-campus course workload was from in-class lectures. However, having only 1 instructor rather than multiple instructors may have increased the comfort level of students resulting in the students asking more questions. In addition, offering the Internet-based course for the first time may have resulted in some instructor inefficiencies even though the instructor had taught several other Internet-based courses.

Several variables added to the strength of the study. The students taking the Internet-based course had previously completed 5 semesters of Internet-based instruction. The instructor for the Internet-based course had been an instructor of record in 2 previous Internet-based
courses and was also an instructor in the campus-based course. In addition, the material for the Internet-based course came directly from the campus-based course, which had been established for 10 years.

The results of this study can be used in several ways. This study found that it took almost twice the amount of work per student to teach and maintain an Internet-based course. Pharmacy or other higher education programs can use this information when determining feasibility of Internet-based pathway implementation at their institution. In addition, faculty administration can use this information when assigning course loads to and making practical decisions on the overall workload of faculty members. This study also found that the majority of the workload for Internet-based instructors comes from receiving and sending e-mail communications to students. Pharmacy programs considering an Internet-based pathway and the administration of these programs must take this into consideration when assigning faculty to Internet-based courses. Faculty members teaching Internet-based courses must be effective at teaching via computer-based format for the course to be successful. Additional faculty development in the area of online teaching and technology may be necessary prior to the implementation of an Internet-based program.

CONCLUSIONS

Instructor workload is an important issue when teaching any course. Several articles have reported an increase in instructor workload when teaching an Internet-based course versus a traditional campus-based course. This study showed that an Internet-based course required a 192% increase in workload per student and a 23% increase in overall workload compared with teaching a campus-based course. Most of the workload involved with the Internet-based course came from the instructor receiving and sending e-mail, while workload from the campus-based course came from the instructor giving in-class lectures. Pharmacy programs considering implementing an Internet-based pathway can use this information to determine the feasibility of implementing an Internet-based program as well as assigning specific faculty members to teach Internet-based courses. This study may offer a format for similar studies to be designed as more studies in this area need to be completed to confirm these results.

REFERENCES