



Original article

Pharmacy students' perceptions towards online learning in a Saudi Pharmacy School

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ABSTRACT

Objectives: The aim of the study was to evaluate previous exposure to online learning and preference for learning through pre-recorded online lectures with or without live active learning among pharmacy students in their fifth year.

Methods: An anonymous online survey was self-administered to fifth-year students enrolled on the Graduation Research Project Course.

Results: The response rate was 100%. Ninety-seven percent of students had previous experience with at least one online course during their pharmacy undergraduate curriculum; 76% of the courses were science courses. The majority of respondents preferred face-to-face, in-class lectures to online lectures, but 17% expressed no preference.

Conclusion: Pharmacy students expressed some interest in online learning methods within the pharmacy curriculum.

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1. Introduction

Online learning has become popular in higher education (Allen and Seaman, 2011). Over the past decade, colleges and universities around the globe have shifted their education from traditional instructor-delivered dedicated lectures to more electronic learning. Healthcare disciplines' education systems are among the main professions that incorporate online learning in their curricula (Allen and Seaman, 2011).

E-learning incorporates different types of course design and teaching methods. A fully online course usually does not include face-to-face time and all content are provided online (Allen and Seaman, 2011). On the other hand, blended learning – as defined by Garrison and Kanuka (2004) – refers to the systematic integration of online and face-to-face engagement to support and enhance meaningful interaction between students, teachers and resources.

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Gonzalvo et al. (2013) suggested that online learning benefits students as well as lecturers. They found that e-learning is beneficial in economies of scale, reusing recorded sessions and accessing materials regularly. They also highlighted the convenience of utilising e-learning for both students and instructors, as well as the limited costs associated with it. Similarly, Lewin et al. (2009) concluded that blended online learning offers great flexibility and responsiveness in the teaching and learning process. Gray and Tobin (2010) added that blended learning supports instructional approaches, which are difficult to achieve using traditional teaching methods, and reaches a high number of students without increasing the resources needed.

Both fully online and blended learning approaches have been found to be effective techniques for students in healthcare disciplines such as medicine, nursing and pharmacy.

The pharmacy discipline provides an excellent example of the successful implementation and utilisation of online learning modules. Geuke and Stausberg (2003) also supported the study findings of Gonzalvo et al. (2013). They added to the advantages of using the Internet to facilitate learning the fact that it allows unlimited access to the materials without any time restrictions. Elliott et al. (2009) found that e-learning allows students to study at their own pace, hence they achieve better learning outcomes.

Ernst and Colthorpe (2008) also concluded that well-designed online learning modules can get students involved in the learning process by allowing them to take part in active learning activities to enhance active learning.

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Pharmacists have used the Internet to access health information sources such as PubMed, the Cochrane Database of Systematic Reviews and Medscape. In addition, the Internet has been used to deliver products and services (Benetoli et al., 2015). Additionally, Yeh et al. (2014) found that e-learning was an efficient approach in providing support for pharmacy students during their internship programmes. It was particularly useful in providing therapeutic drug monitoring, pharmacokinetics, pharmacy calculations and dose adjustments.

In the meta-analysis by Means et al. (2009), most of the studies included were conducted in higher education settings. The author concluded that online education contributed to better learning outcomes as well as higher student satisfaction rates.

In pharmacy education, Lancaster et al. (2011) and Seybert and Kane-Gill (2011) successfully implemented recorded online lectures along with active learning, while Bollmeier et al. (2011) instituted online learning in a drug information course.

However, the most efficient teaching approach for the pharmacy professional is not yet certain (Suda et al., 2013). The current generation is less likely to be attracted to traditional teaching methods. It has been suggested that today's students prefer to use technology in their education and show higher satisfaction rates with e-learning (Blouin et al., 2009).

2. Background

The College of Pharmacy at King Khalid University (KKU) has adopted an online learning strategy along with the traditional instructor-delivered dedicated lectures. Both fully online learning and blended learning are currently implemented. The College of Pharmacy aimed to increase the utilisation of e-learning, and encouraged all its departments to have at least 30% of their courses delivered electronically.

The main reason for developing online learning was to meet the needs of students who have clashes in their timetable and would not otherwise be able to take certain courses. It was also aimed at helping students living some distance from the university, including those in rural surrounding areas, or students who have transport difficulties, especially females. Faculty members also have some flexibility in terms of schedule and geographical location. Another reason was to avoid having to schedule sessions at times considered to be less desirable to students and instructors. Additionally, obtaining better learning outcomes by enhancing student-teacher interaction was an important factor in pursuing the delivery of online education. For benefitting universities is to cover shortage of staff in certain departments by hiring international staff residing outside the country.

3. Aim and objectives

The aim of the study is to evaluate previous exposure to online learning and preference for learning through pre-recorded online lectures with or without live active learning among pharmacy students in their fifth year.

To identify what pharmacy courses students perceived to be suitable for an online learning methods mode of delivery.

To find out the most preferred student-teacher communication method from students' perspectives. To find out the acceptable frequency of class live time in blended courses.

To find out students' preferred method of viewing lectures.

4. Methods

An anonymous online survey was designed and self-administered within KKU learning management system,

Blackboard (Bb). Fifth-year (level 10) pharmacy students enrolled on the Graduation Research Project course in the College of Pharmacy at KKU had access to the questionnaire for three weeks (from November through December 2016).

The data collection tool consists of 10 multiple-choice and multiple answer questions (Appendix A) adopted from (Suda et al., 2013). Participation in the study was voluntary, but five extra marks were awarded to students who completed the survey. Students were asked about their preferences relating to online learning methods in the pharmacy curriculum. Face-to-face lectures are defined as those in which a faculty member delivers instructional content in person from either KKU campuses (Greiger or Alsamer). Lectures viewed using Bb are considered as online lectures.

Results were downloaded and stored in Microsoft Excel spreadsheets. Data from both campuses was collated in a single Excel sheet. It was then transferred to SPSS "version 25" for MAC for analysis. The results were described in terms of frequencies, percentages, Chi Square was used to evaluate differences for categorical data. P value < 0.05 was considered significant.

Ethics approval was obtained from the research committee at the College of Pharmacy at KKU.

5. Results

Of the 47 students on the course, all 47 completed the online survey (100% response rate). Sixty-four percent ($n = 30$) of the students were based on the female campus, while the remaining 36% ($n = 17$) were based on the male campus.

Ninety-seven percent ($n = 45$) of the participants had prior experience with at least one online course during their undergraduate curriculum $P = .0001$. Among those who had prior experience with online courses, 76% ($n = 36$) had taken online science courses during their undergraduate curriculum $P = .0001$. Table 1 summarises the students' demographics.

Table 2 shows that 72% ($n = 34$) of respondents preferred traditional in-class lectures $P = .002$ over the online interactive lectures (43%; $n = 20$) $P = .307$ and online recorded lectures (30%; $n = 14$) $P = .013$. However, 17% ($n = 8$) of respondents expressed no preference $P = .0001$.

Students indicated learning the most from traditional face-to-face lectures 57% ($n = 27$), followed by online lectures, either interactive 21% ($n = 10$) or recorded 21% ($n = 10$) $P = .002$.

As shown in Table 3, for a course with online lectures on Bb, 89% ($n = 42$) of respondents were interested in meeting for a face-to-face component, for selected live lectures, active learning activities, or both $P = .002$. For a blended online course, almost half of the students (49%; $n = 23$) suggested that meeting weekly was a sufficient frequency for live classroom time $P = .04$. Communicating with the lecturer of a course with an online component was preferred to be through meeting in the faculty during on-campus office hours (45%; $n = 21$), followed by online discussion board on Bb (30%; $n = 14$), passing a question to the group leader (21%; $n = 10$) and email (4%; $n = 2$) $P = .001$.

The top three courses currently delivered as full online courses that students suggested should continue to be delivered through this method were: Communication Skills in Pharmacy Practice (77%; $n = 36$) $P = .0001$, Pharmacy Regulations and Ethics (72%; $n = 34$) $P = .002$ and Hospital Pharmacy (66%; $n = 31$) $P = .013$. On the other hand, other courses were found to be less suitable for a fully online mode of delivery, such as Pharmaceutical Microbiology (6%, $n = 3$) $P = .0001$, Pharmacognosy (13%; $n = 6$) $P = .0001$ and Medical Terminology (40%; $n = 19$) $P = .189$.

Table 4 shows courses that are currently taught either through blended learning or traditional in-class lectures. Most of the students showed a preference for incorporating online learning in Marketing (85%, $n = 40$) $P = .0001$ and Graduation Research Project

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