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UCSP 615-9047

Top Three Trends in Higher (Pharmacy) Education

I am a Professor at the University of Maryland School of Pharmacy, located in Baltimore, Maryland. In addition to my academic rank, I also serve as the Vice Chair for Education in my department (Department of Pharmacy Practice and Science). The NAICS code for my profession is 611310 (Colleges, Universities and Professional Schools). There is no unique code for a School or College of Pharmacy, however law schools and medical schools (also on my campus) share the same NAICS code, so I feel this adequately captures my specific profession.

I used a variety of search engines and strategies to determine the top trends in my profession including google, google scholar, the database ERIC, and the one search function through UMUC. A variety of “trends” were uncovered in my search. I selected the top three by shamelessly selecting those that I have personally observed as hot topics of discussion in the past year or two at the national level in pharmacy education. These include the following:

- **Skill-specific education** – an education from a School of Pharmacy could be considered a skill-specific education, but this trend also includes the development of MOOCs (“massive open online courses”).
- **Social learning as a pedagogical method** – the use of Facebook, Twitter, and other social media as an educational tool in face-to-face education, blended learning and distance education.
- **Active learning and the “flipped classroom”** – in this model, students complete self-study prior to class time. During class “active learning” strategies are used to help

students apply the learned content through exercises, cases, discussions and other activities.

While there were many potential articles discovered during my search that were applicable to these three trends, I chose the top six that I found to be interesting. I have provided an annotated bibliography of the six articles.

Harder, B. (2013). Are MOOCs the future of medical education? *BMJ*, 346, F2666. Doi: 10.1136/bmj.f2666

This feature article describes and defines “MOOCs” (massive open online courses), and speculates and potential opportunities for using MOOCs in medical education. As of the writing of this article, several MOOC courses were approved for use by medical students, with the award of academic credit from the student’s home institution. Argument for and against using MOOCs as part of a medical students training are presented in this feature article. On one hand, MOOCs could be deployed as part of a “flipped classroom” where the online course provides didactic content, and the student’s academic institution provides the active learning component. Other experts argue that MOOCs can only play a small role in medical education. Experts agreed, however, that MOOCs have great potential in continuing medical education. The author concludes by recognizing the nontraditional nature of MOOCs are a limitation, but promises sufficient intrigue to entice the reader to further investigate.

Cao, Y., Ajjan, H., & Hong, P. (2014). Using social media applications for educational outcomes in college teaching: A structural equation analysis. *British Journal of Educational Technology*, 44(4), 581-593. doi: 10.1111/bjet.12066

Cao and colleagues acknowledge that faculty members embrace the use of social media personally, in their professional fields, and in the classroom. However, a fair degree of doubt remains on both the part of faculty and students regarding the utility of using social media in terms of confidentiality, required work to incorporate social media into teaching, and whether or not including social media enhances educational outcomes. This research evaluated a variety of variables ranging from antecedents (perceived usefulness, external pressure, perceived risk, social media readiness), behavior and conditions (social media utilization in teaching and task-technology compatibility) and consequences (student satisfaction and student learning outcomes). Their results showed that all the antecedents were important considerations in whether or not to deploy social media. Results also showed that task-technology compatibility was important, explaining that comfort level with social media use is not as important as whether or not it “matches” the intent of the teaching. Results also showed that the use of social media in teaching had a positive influence on measured educational outcomes. This is important research that illustrates how social media has a positive influence on educational outcomes.

Cain, J., & Policastri, A. (2011). Using Facebook as an Informal Learning Environment. *American Journal of Pharmaceutical Education*, 75(10), 207.

The authors of this research initiative acknowledge that traditional face-to-face teaching has some limitations in terms of time, and flexibility to incorporate use of alternate media. Using a course on pharmacy management and leadership, the researchers used Facebook to facilitate students interacting with guest lecturers (e.g., informal learning). The purpose was to give students an opportunity to interact with experts regarding contemporary issues in pharmacy

management. Participation was voluntary, but extra credit points were awarded for participation. The authors considered this experiment successful, and that it enhanced informal learning.

Stewart, D., Brown, S., Clavier, C., & Wyatt, J. (2011). Active-Learning Processes Used in US Pharmacy Education. *American Journal of Pharmaceutical Education*, 75(4), 68.

The authors of this research described the published standards in pharmacy education that press for more problem-based and active learning to achieve terminal performance objectives. To determine where schools and colleges of pharmacy are in terms of deploying these teaching methods, the authors conducted an audit of all pharmacy institutions in the US. Ninety-five schools and colleges of pharmacy participated in this survey; almost 90% stated they are using active learning strategies in the execution of their curriculum. The authors categorized the types of active learning strategies used which ranged from problem-based learning to interactive spaced education. Their conclusions stated that future research should investigate best practices for selecting among these active learning strategies.

McLaughlin, J.E., Roth, M.T., Glatt, D.M., Gharkholonarehe, N., Davidson, C.A., Griffin, L.M., Esserman, D.A., Mumper, R.J. (2014). The Flipped Classroom: A Course Redesign to Foster Learning and Engagement in a Health Professions School. *Academic Medicine*, 89(2), 236-243. doi: 10.1097/ACM.000000000000086.

As accrediting organizations continue to call for more active learning in the curriculum for schools and colleges of pharmacy, faculty are increasingly using the “flipped classroom.” Historically, basic sciences courses are not considered as “flappable” as clinical coursework. However, this group of researchers chose to “flip” a pharmaceuticals course (the science of

pharmaceutical dosage formulations). All lectures were video recorded and posted for pre-class viewing. Class time was used for active learning exercises designed to enhance critical thinking skills (audience response and open questions, pair and share activities, student presentations, quizzes). Their outcomes showed enhanced student participation in the course (as measured by attendance), academic performance, and improved student attitudes about the course. This is one of the few research studies showing the positive impact of the flipped classroom in pharmacy education.

Educause. (2012, January 1). 7 Things You Should Know About...Flipped Classrooms.

Retrieved March 2, 2015, from <http://net.educause.edu/ir/library/pdf/eli7081.pdf>

This practical resource reflects on seven aspects of the flipped classroom that faculty need to be mindful of. Questions answered include what the flipped classroom is, how it works, who does it, why it is significant, any disadvantages, directions for the future and implications for teaching and learning. Faculty are often intimidated by change, and admittedly “flipping” a classroom sounds pretty extreme. This is a practical guide aimed at giving the straight scoop to faculty who are interested in considering adopting this teaching method.