

University of Kentucky

UKnowledge

Pharmacy Practice and Science Presentations

Pharmacy Practice and Science

7-25-2016

Student Perception of the Impact of Audience Response Software in a Team-Based Learning Self-Care Course

Clark Kebodeaux

University of Kentucky, clark.kebodeaux@uky.edu

Leslie Woodyard

St. Louis College of Pharmacy

Golden Peters

St. Louis College of Pharmacy

Patrick Finnegan

St. Louis College of Pharmacy

Follow this and additional works at: https://uknowledge.uky.edu/pps_present



Part of the [Pharmacy and Pharmaceutical Sciences Commons](#)

Right click to open a feedback form in a new tab to let us know how this document benefits you.

Repository Citation

Kebodeaux, Clark; Woodyard, Leslie; Peters, Golden; and Finnegan, Patrick, "Student Perception of the Impact of Audience Response Software in a Team-Based Learning Self-Care Course" (2016). *Pharmacy Practice and Science Presentations*. 2.

https://uknowledge.uky.edu/pps_present/2

This Presentation is brought to you for free and open access by the Pharmacy Practice and Science at UKnowledge. It has been accepted for inclusion in Pharmacy Practice and Science Presentations by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.

Objectives

- To evaluate student perceptions of the audience response systems (ARS) technology
- To compare students' assessment of the use of ARS technology with their performance

Background

- An ARS allows students to electronically answer a question posed to the class with the use of “clickers”, remote electronic devices, or software that can be accessed online or installed as a smartphone app
- Although audience response systems have been utilized in medical education for decades, they have become more advanced and popular within the last 10 years¹⁻³
- A 2011 survey of schools/colleges of pharmacy showed 88.8% of pharmacy institutions use some type of ARS⁴
- Across multiple disciplines, instructors have reported ARSs to increase: student engagement⁵, class participation⁶, perception of learning material⁷, performance on examinations and interest in a course⁸
- Researchers have reported ARSs promote interactivity and initiation of discussion, thus enhancing traditional lectures⁹
- However, evidence evaluating audience response systems (ARS) used in team-based learning (TBL) compared to traditional classes is limited

Methods

- TBL was implemented in the required self-care course (PP2120: Introduction to Pharmaceutical Care: Non-prescription drugs) at St. Louis College of Pharmacy, and an audience response system was implemented in Fall 2015.
- The weekly course schedule was as follows:
 - The course administrator entered all case questions into the ARS prior to the class period.
 - Students would prepare responses to cases during the team based portion of the class. The students would then input their answers into the ARS system.
 - The students could then see how each group answered the question in real time.
 - Faculty could also see the variety of responses input by the students and identify teaching points based on student input.
 - This TBL approach using the ARS schedule was repeated weekly throughout the semester.
- At the conclusion of the course, a web-based survey was administered to students.

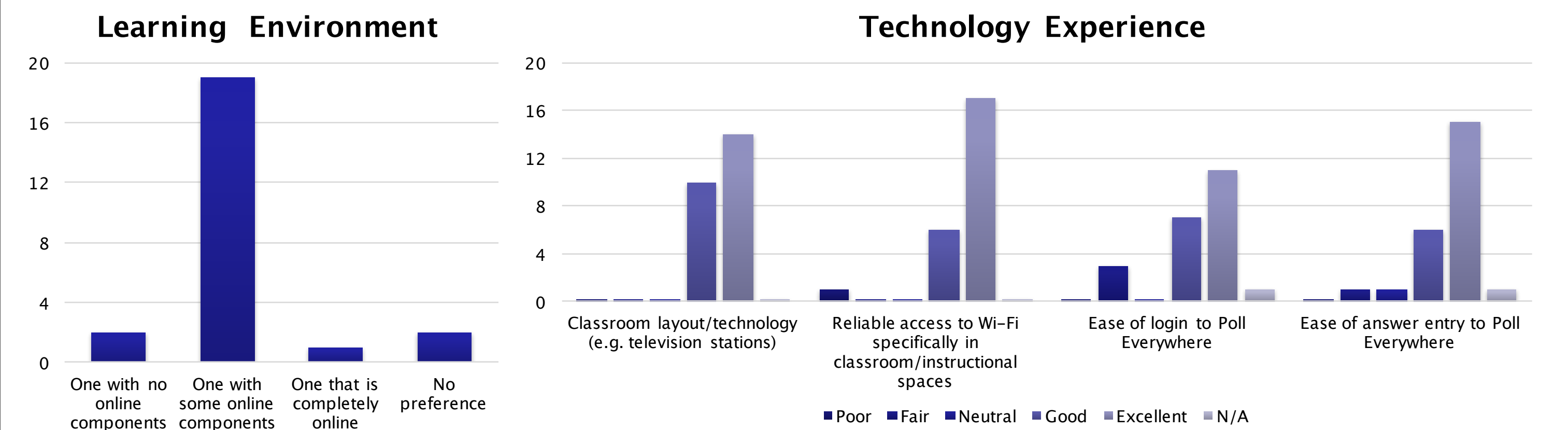
Participant Characteristics

- Of the 29 students who successfully completed the course, 23 (79%) completed the survey. Student response to the audience response technology was generally favorable.

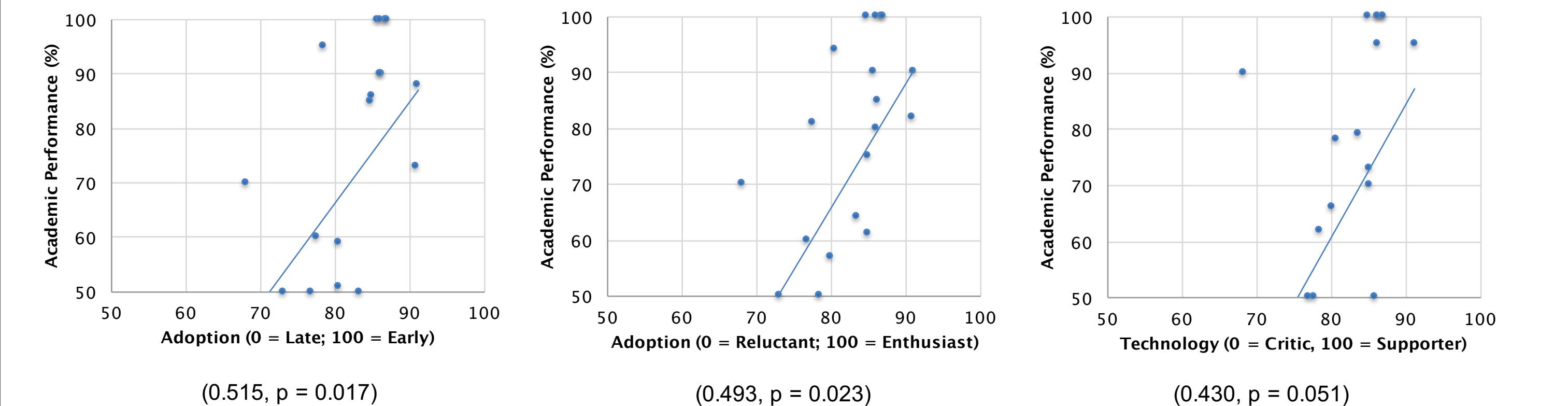
Participant Characteristics		All Respondents n(%) (n=24)	
Gender		Ethnic Background	
Male	10 (42)	White	17 (71)
Female	14 (58)	Hispanic	1 (4)
		Asian/Pacific Islander	6 (25)
Terminal Degree Goal		Other	1 (4)
Pharm.D.	23 (96)		
Other	1 (4)	Residence	
		On Campus	2 (8)
Academic Status		Off Campus	22 (92)
Full-Time	23 (96)		
Part-Time	1 (4)		

Results

Participant Reponses (n = 24)		Somewhat agree	Strongly agree	% Agree
1	I get more actively involved in the case response portion of class due to Poll Everywhere	11	10	87.5%
2	I get more actively involved in the muddiest points portion of class due to Poll Everywhere	7	11	75.0%
3	My learning was enhanced in the case response portion of class due to Poll Everywhere	6	11	70.8%
4	My learning was enhanced in the muddiest points portion of class due to Poll Everywhere	11	8	79.2%
5	Technology (e.g. Poll Everywhere) makes me feel more connected to what's going on at the college/university.	6	11	70.8%
6	Technology (e.g. Poll Everywhere) makes me feel more connected to my team members.	9	7	66.7%
7	Technology (e.g. Poll Everywhere) makes me feel connected to instructors.	7	11	75.0%
8	The faculty seemed to understand how to properly use the poll everywhere software	12	8	83.3%
9	The ability to respond to the polls using a device other than your laptop computer was a valuable feature of Poll Everywhere	2	14	66.7%
10	Poll Everywhere visuals made it easier to understand the entire classes' response to case questions	5	18	95.8%
11	Poll Everywhere would be useful in other pharmacy courses in the curriculum	8	14	91.7%



Technology/Academic Performance Relationship



Discussion

- This is the first study to measure the impact of ARS with TBL implementation in a self-care course.
- Understanding student perceptions of an ARS within a TBL course is vital.
- Study results are consistent with previous research showing increased student involvement, participation, and enhanced learning, when utilizing ARS.
- Academic performance is positively correlated with both early adopters and enthusiasts of technology and both were statistically significant.
- Limitations of this study include:
 - Small sample size
 - Limited external validity
 - The self-care course is team taught; Different faculty taught the class from week to week. However, the course coordinators (both investigators) attended each class session to ensure consistency of implementation

Implications

- ARS data can be used to help implement TBL in pharmacy school curricula.
- Further research can be performed to link student adoption of technology to performance in courses that implement ARS.
- Further research can also review faculty perceptions of ARS within TBL courses.

References

- Clauson KA, Alkhateeb FM, Singh-Franco D. Concurrent use of an audience response system at a multi-campus college of pharmacy. *Am J Pharm Educ.* 2012 Feb 10;76(1):6.
- Ludwig J. Medical school teachers-there is a message from an airline. *Mayo Clin Proc.* 1973 Apr;48(4):294-7.
- Ludwig J, Mitchell MM. The student response system: a 5-year Mayo medical school experience. *Mayo Clin Proc.* 1977 Sep;52(9):556-60.
- Monaghan MS, Cain JJ, Malone PM, Chapman TA, Walters RW, Thompson DC, Riedl ST. Educational technology use among US colleges and schools of pharmacy. *Am J Pharm Educ.* 2011 Jun 10;75(5):87.
- Hatch J, Jensen M, Moore R. Manna from heaven or “clickers” from hell. *J Coll Sci Teach.* 2005;24:36-9.
- Beekes W. The 'millionaire' method for encouraging participation. *Active Learning High Educ.* 2006;7:25-36.
- Johnson JT. Creating learner-centered classrooms: use of an audience response system in pediatric dentistry education. *J Dent Educ.* 2005;69:378-81.
- Preszler RW, Dawe A, Shuster CB, Shuster M. Assessment of the effects of student response systems on student learning and attitudes over a broad range of biology courses. *CBE Life Sci Educ.* 2007 Spring;6(1):29-41.
- Cain J, Robinson E. A primer on audience response systems: current applications and future considerations. *Am J Pharm Educ.* 2008 Aug 15;72(4):77.

Disclosures

The authors have no financial or any other conflicts of interest.