



Peer-Assisted Study Sessions: We Want You to “PASS” Pharmaceutical Calculations

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Background

- Ohio Northern University is a private 0-6 PharmD program in rural Ohio
- Students were 2nd year students enrolled in a pharmaceutical calculations course
- As numbers of students struggling with pharmaceutical calculations has increased, faculty were searching for creative ways to better assist students.

Objective

To improve student success and retention in a pharmaceutical calculations course.

Methods

- Two upper-level students were hired to serve as peer-assisted study session tutors for a course focused primarily on pharmaceutical calculations.
- The tutors attended lectures, developed topics for study sessions and facilitated two hour-long study sessions per week.
- The Peer Assisted Study Sessions (PASS) provided short intentional reviews of concepts and practice problems and assisted students in mastering pharmaceutical calculations.
- Students who were identified as “at-risk,” using an algebra-based pretest were required to attend PASS weekly. However, all students were encouraged to attend PASS.
- At the end of the semester students were surveyed to assess their use of the resource, the value of the resource, and subjective thoughts on the PASS program.

Program Results

A total of 82 students were enrolled in the course and all 82 answered the post-course survey. A total of 167 individual visits to the PASS sessions were recorded during the semester with 59/79 (74.7%) of students attending at least one PASS and 16/79 (20.3%) of students attending > 5 sessions

Student Learning Resources (n=82)	Did not use	No Value	Low Value	Moderate Value	High Value
	% of respondents	% of respondents	% of respondents	% of respondents	% of respondents
In-person individual faculty office hours	58.54%	2.44%	6.10%	18.29%	14.63%
Virtual individual faculty office hours	85.37%	0.00%	2.44%	7.32%	4.88%
Embedded Tutoring Sessions (PASS SESSIONS)	39.02%	0.00%	10.98%	25.61%	24.39%
TA individual office hours	84.15%	1.22%	0.00%	3.66%	10.98%
Being paired with a math mentor	86.59%	0.00%	0.00%	7.32%	6.10%
Asking older students I know in the pharmacy program	24.39%	1.22%	9.76%	31.71%	32.93%
Attending Pharmacy Tutoring Center hours	86.59%	0.00%	0.00%	6.10%	7.32%
Attending Math Tutoring office hours through the math department in person	75.61%	2.44%	6.10%	8.54%	7.32%
Working with peers/classmates on concepts	4.88%	1.22%	7.32%	31.71%	54.88%
Reading the textbook	24.39%	4.88%	17.07%	30.49%	23.17%
Rewatching math videos	43.90%	0.00%	14.63%	19.51%	21.95%
Studying alone	2.44%	0.00%	4.88%	18.29%	74.39%
Other sources of review outside of ONU (ie. Khan Academy or YouTube videos)	50.00%	1.22%	14.63%	13.41%	20.73%
Math Review Packets(300 problem packets with problems and answers)	7.32%	4.88%	8.54%	17.07%	62.20%
Virtual or In person Math Review Sessions	35.37%	2.44%	7.32%	15.85%	39.02%

Reasons for Not Utilizing Resources	%	Number of responses
I didn't have time	16.09%	37
I didn't want to take time	3.91%	9
I didn't know how to access resources	1.30%	3
I didn't want anyone to know I need help	4.35%	10
I don't typically need help	13.48%	31
These resources were for other students, not for me	1.30%	3
I'm was not doing "badly enough" to utilize resources	9.13%	21
Tutoring and other resources haven't been helpful in the past	7.39%	17
I know I would do OK on my own	14.35%	33
I don't like doing attending things virtually	7.83%	18
I don't like attending things in person	0.87%	2
The resources were not offered to me at convenient times	10.00%	23
I didn't have a need to access any resources	5.65%	13
Other	4.35%	10
Total	100%	230

Student Feedback

“I thought that the embedded tutors were nice to have as it were older students who were in the pharmacy program. Not only were you able to ask them questions about pharmacy math but you were able to ask them about the program overall. I wish I was able to use more of the resources, however due to personal and family issues, I did not have much time.”

“I loved the idea of the new, imbedded tutors! As I was doing the review packets that they created for us, I began to think of how well-prepared we all were and the unlimited resources that we were given throughout the whole process. I am very thankful that they were able to take the time out of their busy lives and create such well-thought our content for us.”

“I didn't personally use it but I really like the concept because it allows the tutors to know exactly what we are learning and how it is being taught in class.”

“I used the tutors because they could easily explain the problems that I was struggling in a way where I could better understand it and answer. Since they were in my shoes once they knew the best ways to read and answer the questions and that really helped me in the long run because of the tips they would give me.”

PASS Tutor Feedback

“I have absolutely loved getting the opportunity to tutor the Pharmacy Calculation students and help them along their journey with pharmacy math, and I would love to do it again in the future. It was an amazing opportunity to improve my confidence in pharmaceutical calculations, give back to my fellow students and learn about myself as a tutor. It was an invaluable experience.”

Conclusions

The implementation of Peer Assisted Study Sessions (PASS) in a pharmacy calculations course was well received by students and had high student-perceived value while not adding much extra workload to faculty.

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