Online Patient Cases: A Study Combining Virtual and Live Cases in a Pharmacy Laboratory

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with Pharmacy students:
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Situated in downtown Kitchener, 7 km from rest of UW campus

First graduating class 2011

~ 115 students/year

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Professional Practice Curriculum

Professional Practice (PP) Courses/Labs are the only place where counseling skills are reinforced.

- with standardized patients and peer “patients”.
  - 1st year: PP1 and PP2 lecture and PP1 lab
  - 2nd year: PP3 lecture and PP2 lab
  - 3rd year: PP3 lab (spring** more than one year after PP2 lab**)
  - 4th year: PP4 course (spring)

Co-op

- The first co-op term occurs at the end of first year following (PP1 and 2 lecture and PP1 lab)
- 2nd year starts with the PP3 course and PP2 lab followed by another co-op term
- Students return for an academic term without any “skills” labs, then another co-op term before they return to PP 3 lab.
- It was felt that the co-op terms would be a sufficient way to ensure that the “skills” were reinforced.

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What happened?

Patient information gathering skills were lost ☹

BUT……

– A key core competency is the ability to safely and effectively conduct a comprehensive and accurate patient history.

What does the literature say?

- simulations such as virtual and standardized patients shown to be beneficial for the development of patient information gathering skills *(Chaikoolvatana& Goodyer, 2003) (Schittek Janda et al., 2004) (Yudkowsky, Downing, & Ommert, 2006) (Haist et al., 2008).*

- preliminary research also suggests that a blended model, using virtual and standardized patients, may be optimal *(Raij et al., 2007).*

➢ **however** little is known about the optimal use of these modalities.

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What do we see as the value of virtual patients?

- solidify in students' minds the essential information gathering questions
- immediate feedback → students learn as they go
- students can re-visit → reinforce the knowledge

Objectives

Determine if virtual patients will help our students improve their patient information gathering skills and what an optimal blend of VP and SP would be

To improve end of term OSCE (Objective Standardized Clinical Evaluation) scores

Ultimately to best prepare our students for the OSCE that is a requirement for licensure

Experimental Design

1. Baseline information gathering skills assessed (in PP1) ➡ pre-OSCE

2. 1st 5 weeks - students interact with cases in various blends

Group	Virtual patients	Standardized patients
1	5	1
2	4	2
3	3	3
4	2	4
5	1	5

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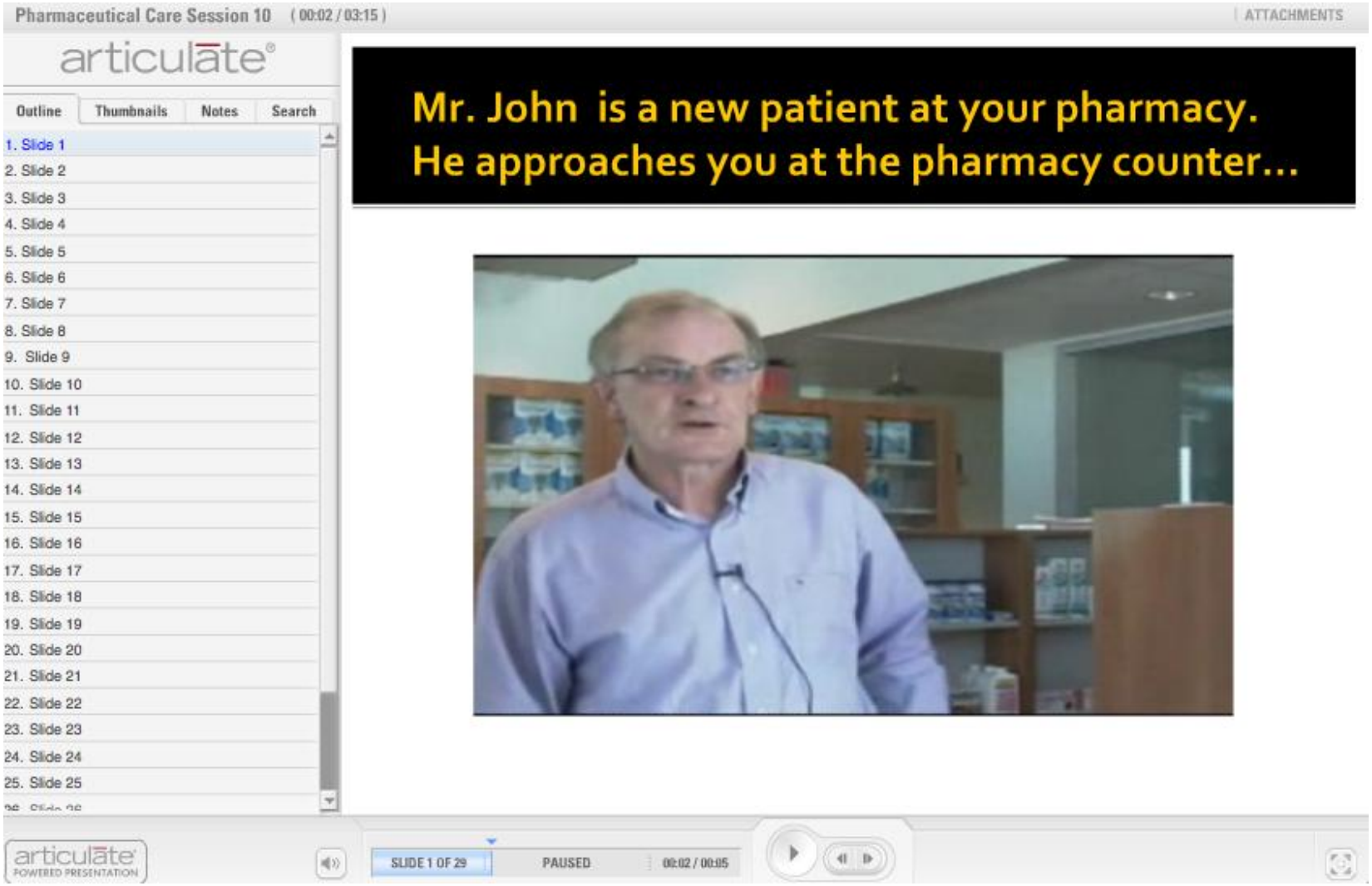
Experimental Design

3. 6th week information gathering skills assessed (post-OSCE) → assess change in rubric score

4. 2nd 5 weeks in lab- students interacted with reverse case blend scenario

5. final OSCE given and assessed → compared with previous years)

6. survey students to ascertain perceived value of virtual patient cases



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Information Gathering

What are your symptoms?

How long have your symptoms been present?

How bothersome are your symptoms?

Have you noticed anything that is making your symptoms better or worse?

Have you tried anything to relieve your symptoms?

I have finished gathering information

articulate

Outline | Thumbnails | Notes | Search

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What are your symptoms?

articulate POWERED PRESENTATION

SLIDE 7 OF 29 | PAUSED | 00:02 / 00:12

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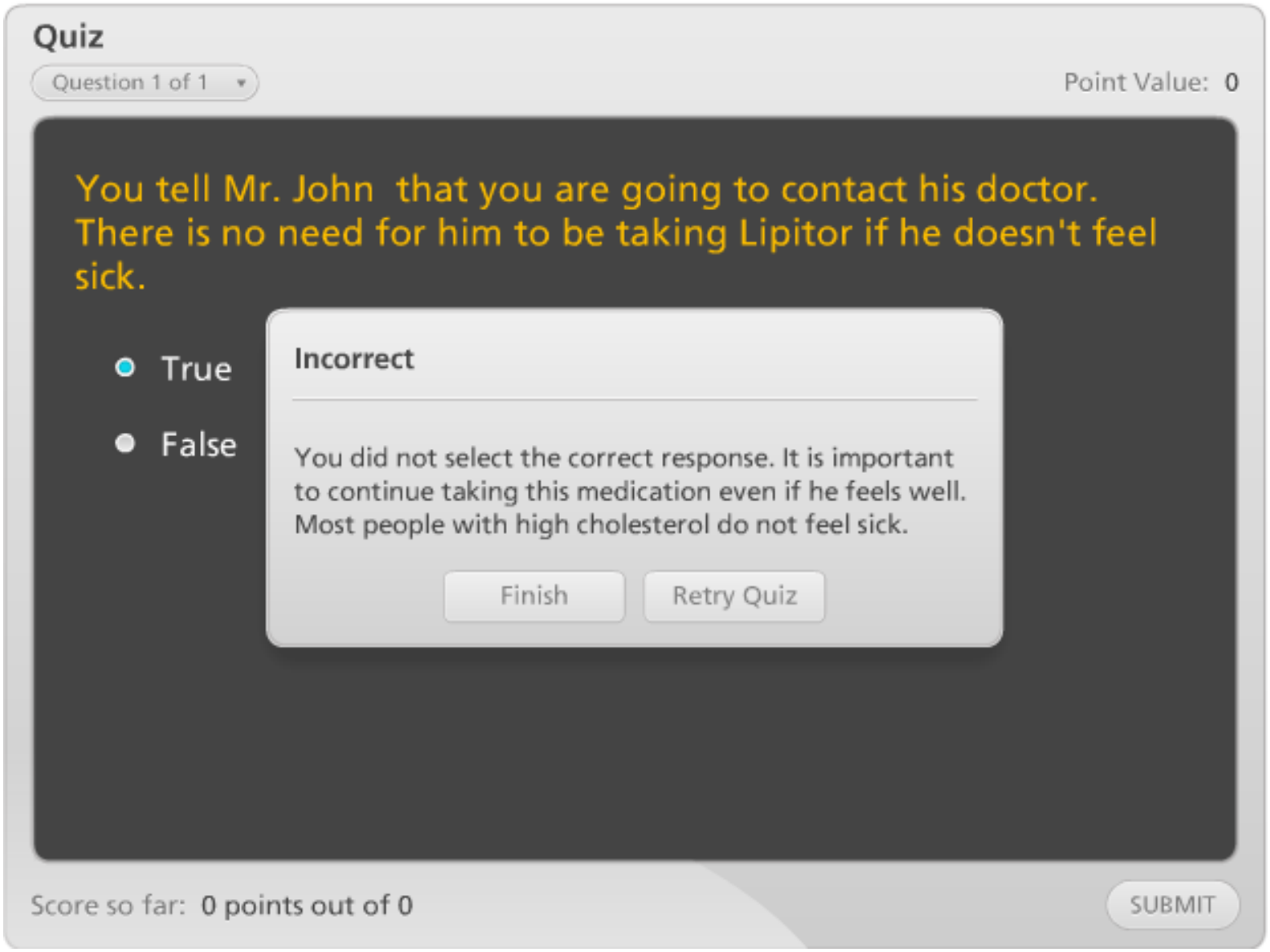

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Did VP# affect student learning?

# VPs	Pre-OSCE (avg)	Post-OSCE (avg)	Avg gain (+sd)
Five (n=17)	48%	52%	4% (±36%
Four (n =16)	54%	50%	-4% (± 22%)
Three (n=12)	48%	60%	12% (±22%)
Two (n=18)	44%	55%	11% (±28%)
One (n=10)	44%	54%	10% (±23%)

➡ No significant difference

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5VP gain
22%
78%
0%
12%
-45%
-56%
0%
-11%
-11%
-56%
12%
0%
22%
45%
56%
11%
-11%

Implementation flaws:

- inter-rater reliability
- grader training
- rubric too complex
- poor instructor buy-in

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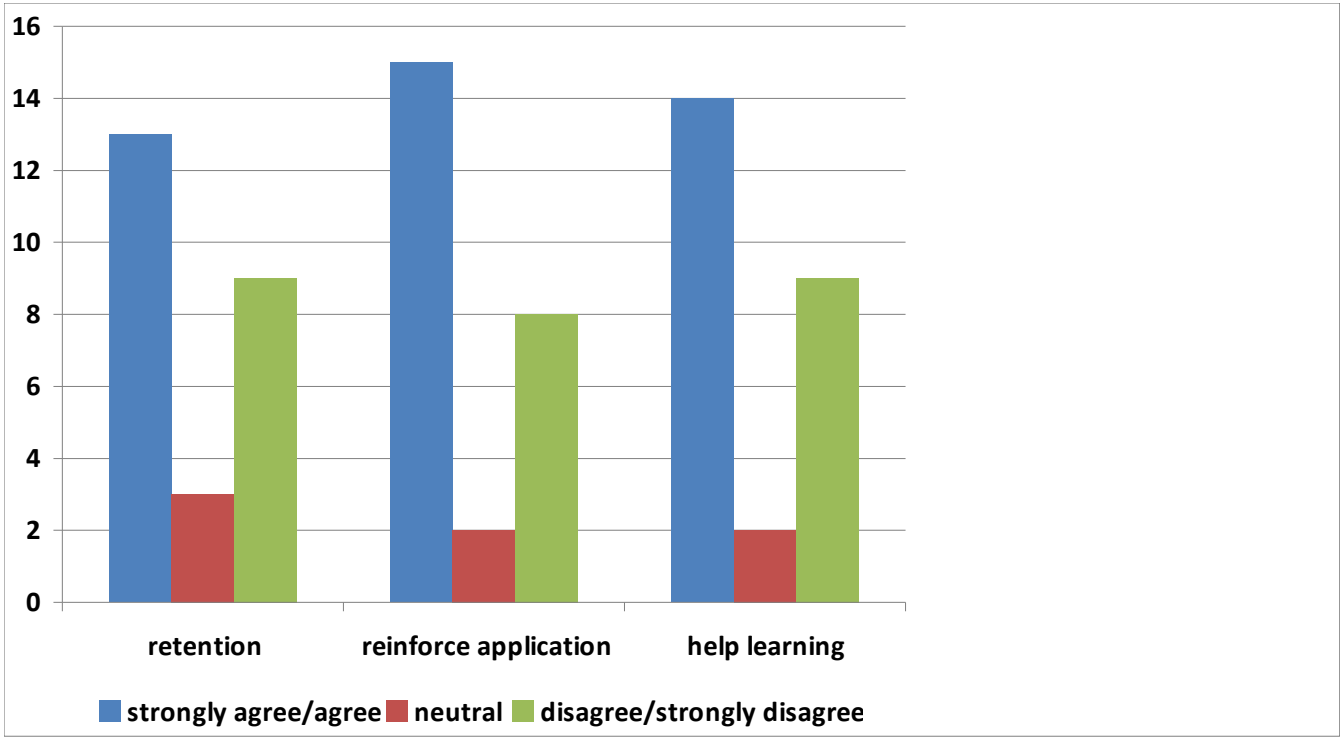
"Do you agree that virtual patients help in retention/reinforce application/help learning…." (n = 25)



- 6 respondents from 5 VP group → 5 disagree/strongly disagree for all three categories and one disagreed for all but retention question (agree)

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Do you agree that the virtual patient cases enhance your learning?

"I liked them because they helped me to learn the questions that I needed to ask real patients."

"While I definitely see the value in the use of Virtual Patients in Professional Practice Lab, I think it really important to recognize that they will NEVER replace standardized patients. They are great for "pre-practice", but at the end of the day, the standardized patients is much more similar to what we will be dealing with in real-life."

"Having 5 virtual patients during the first 5 weeks definitely hindered the progression of my line of questioning. I was basically clicking the questions I thought were right and they were already there for me so I didn't have to do any thinking."

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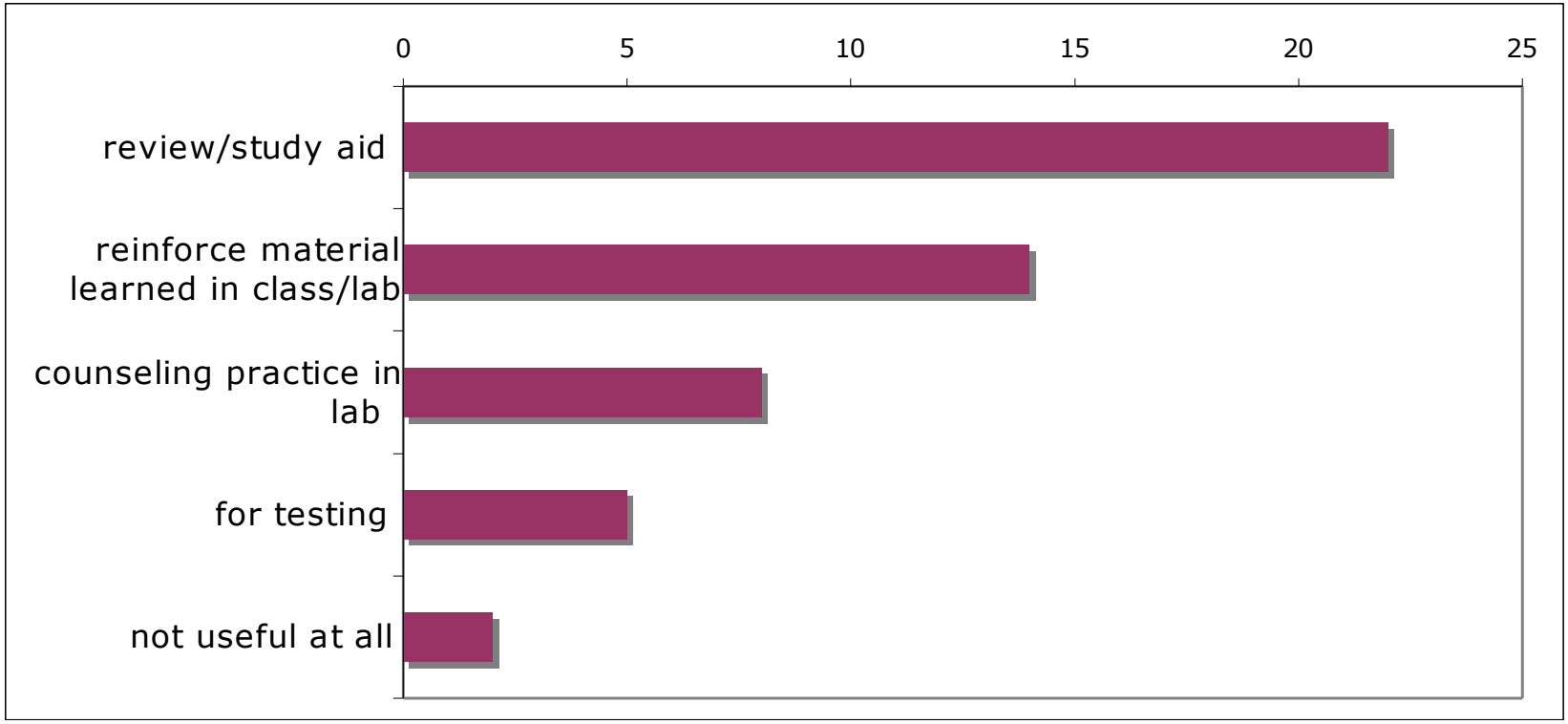
What do you see as the most valuable use of the virtual patients?



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Summary and Next Steps

Virtual patients do have value!

Students like virtual patients but not as replacement to SP

- This term we are using VPs in labs in PP1 (as reinforcement and review after a group information gathering session with SPs)

- PP3 using 3 virtual patient cases in 2nd week with SPs

Summary (cont..)

OSCEs:

- Consistent grading is essential
  - More training for graders required
  - Simplified grading scheme (checklist as opposed to rubric) has been designed

➢ For any project instructor “buy in” very important

A positive outcome of the VP story……

Peter Pagacz, Class of 2012

- Scotiabank Pharmacy Entrepreneurship Award
- University of Waterloo's Nicol Entrepreneurial Award Competition
- Nigel Stokes E-Launch Scholarship, Enterprise Co-op @ MBET Centre

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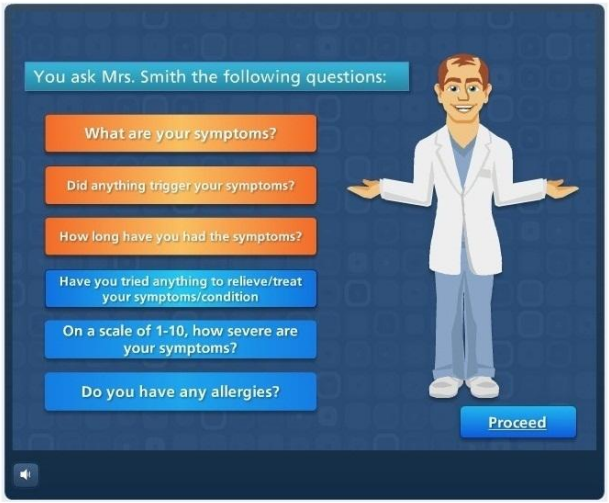
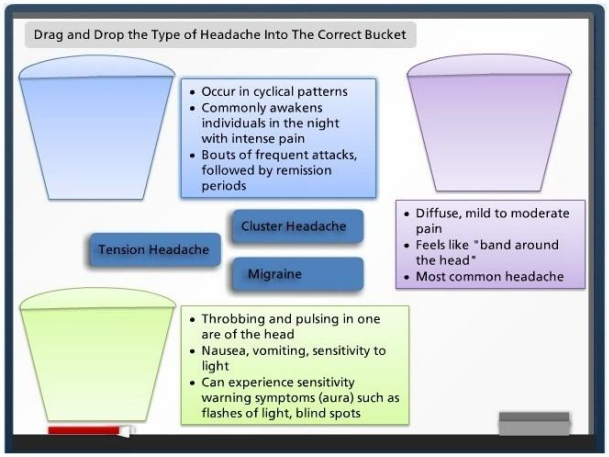
Interactive Virtual Patient Module

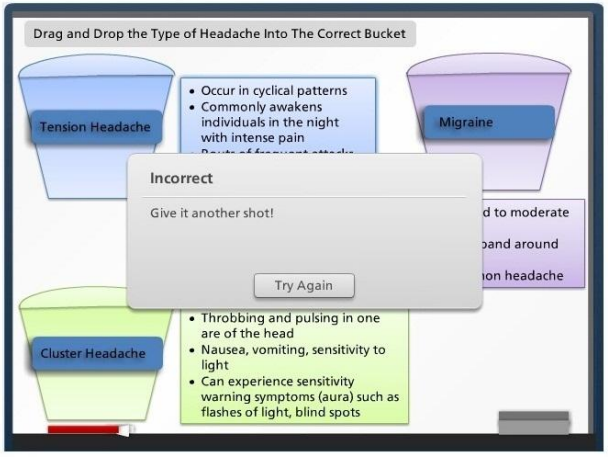


Virtual Patient Interaction

Drag and Drop Interaction



Instant Feedback



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Questions?