Optimizing Our Skills Labs to Improve Quality of Learning

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Background

Context
- Need to remodel our teaching and learning methods to adapt to **recent regulatory changes** granting **new activities** in pharmacists' scope of practice.

Objective
- To **optimize skills labs pedagogical model** and develop students' abilities and competencies to practice to their full expanded scope with confidence and efficiency.

Methods

- **Literature review :** to identify best practices in pharmacy skills labs.
- **Focus groups :** to identify competency enhancement needs (80 participants, including students, recent graduates, professors, preceptors, instructors, and other stakeholders).
- **Simulation labs visits :** to explore learning approaches in healthcare simulation labs.
- **interviews** with 9 simulation lab directors from Canada, United States and Australia: to discuss their practices, resource allocation and overall challenges.
- **Analysis of existing resources and implementation needs**

Current lab environment in the PharmD program
- 25 pharmacist-patient consultation rooms
- 3-5 students per room
- Supervision by 8 instructors and 1 professor per lab activity
- 2-4h/week for students from 1st to 3rd year: mostly role-playing

Potential space for expansion
- A large atrium in the center of the pharmacy building, from the 2nd to 4th floor, could accommodate new simulation facilities.

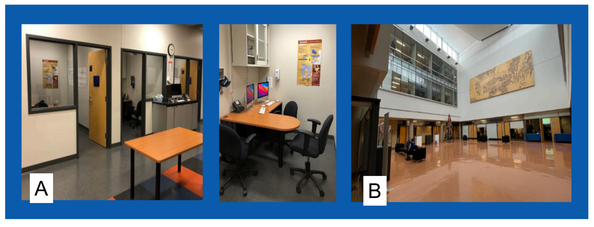


Figure 1
A) Current lab environment. B) Atrium (2nd floor).

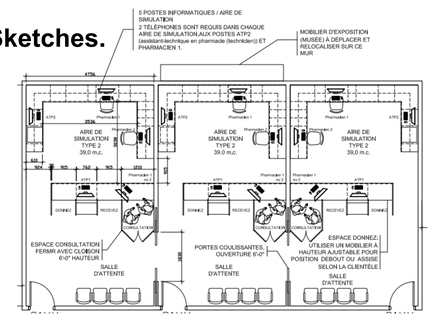
Results

- Based on discussions with the focus groups, interviews and simulation lab visits, **seven competency enhancement needs** were identified:
  1) Communication
  2) Teamwork and interdisciplinary collaboration
  3) Physical and mental assessments
  4) Supervision and management of pharmacy services
  5) Ethical practice
  6) Professional role
  7) Personal behaviour

- To meet these competencies, we identified **four new pedagogical approaches** to be incorporated in a future **Simulation and Virtual Reality Center**

Figure 2 - Sketches.

A) Mocked community pharmacy labs sketch.



B) Hospital environment discovery room sketch.

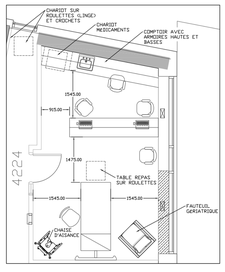


Figure 3
Mocked community pharmacies 3D model.

1) Virtual simulation

Description
- MyDispense, an open-source cloud software developed by Monash University
- Dispense, validation and OTC online exercises

Benefits
- Develop practice skills, such as prescription validation and dispensing
- Receive immediate personalized feedback

Action Plan
- Canadian adaptation and cases development

2) Interprofessional telesimulation

Description
- Use of an online videoconference platform with pharmacy, medical and nursing students, as well as standardized patients
- Instructor to supervise and facilitate discussions

Benefits
- Develop interprofessional collaboration skills
- Online platform to facilitate scheduling

Action Plan
- Scenario development with faculty members from pharmacy, medical and nursing simulation labs

3) Simulations in mocked community pharmacies (Figure 2A and Figure 3)

Description
- Role-play in a realistic community pharmacy environment followed by debriefing with an instructor
- Involve standardized patients

Benefits
- Controlled teaching environment similar to real-life community pharmacy experience
- Develop technical and non-technical skills: communication, teamwork, decision-making, task prioritization, leadership, self-reflection

Action Plan
- 3 new mocked community pharmacy lab facilities to be built

4) Hospital environment discovery room (Figure 2B)

Description
- Discovery room including a patient room and a nursing station

Benefits
- Familiarize with the hospital environment before clinical rotation (IPPE)
- Learn to find key patient information and ensure continuity of care

Action Plan
- 1 new discovery room facility to be built

Discussion

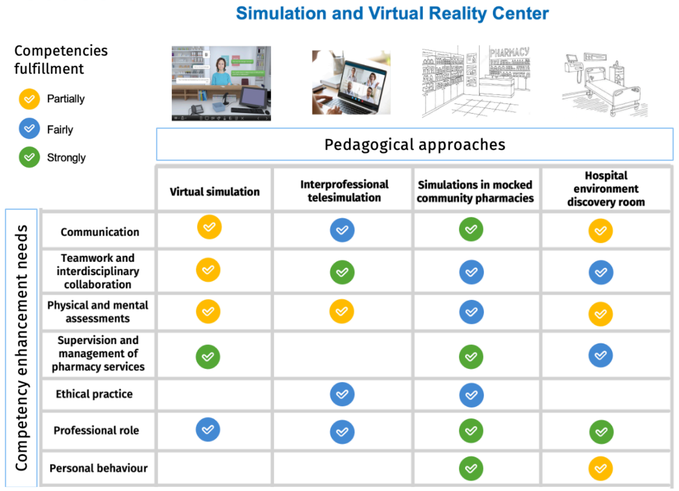


Figure 4 - Development of specific competencies according to different pedagogical approaches.

The new pedagogical approaches will contribute in a complementary manner towards the 7 competencies enhancement and development (Figure 4).

Comparison

Virtual simulation & interprofessional telesimulation
- Practical and readily available to students online
- Develop specific competencies in a simulated virtual environment

Mocked community pharmacies & discovery room :
- Enriching learning experience (6-7 competencies met)
- Specialized environment offering realistic experiences without compromising patients' safety.

Challenges
- Restructuring and expansion of the lab environment
- New infrastructures required and implementation of new technologies
- Recruiting and training lab instructors
- Funding to build new facilities and develop learning activities

Conclusion

Skills lab experience is central to pharmacy students' education and professional development.

The new skills lab educational model will:
- Provide a progressive learning atmosphere with **new technologies**
- Encourage **interdisciplinary collaboration**
- Fully prepare students to **use their full scope of practice**

Acknowledgments

Alice Girard, PharmD student, *Université de Montréal*