

Lights. Camera. Action. Debrief.

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VALORISATION

1. WHAT IS THE SOCIAL AND SCIENTIFIC RELEVANCE OF YOUR RESEARCH RESULTS?

Research in health professions education is my way to advance pharmacy practice. New drugs are constantly released on the market and therapies become more and more complex. Competent pharmacists ready to embrace their full scope of practice can provide better healthcare and ensure a safe use of these new medications. In a world where everything goes fast, with distractions coming from everywhere at once, immersive simulation aims to help students learn to deal with a fast pace and a demanding environment during their training, before they graduate and start professional practice in the real world. Simulation-based education, i.e. simulating professional activities for learning purposes, allows training under safe conditions, for both learners and patients. The learner is allowed to make mistakes, since they will not compromise the safety of simulated patients. However, during our research, we found that the simulated clinical environments in which students practice are so highly stimulating that they can cause some distractions. Those distractions, mistakes they may generate, will have certain consequences, such as learning a suboptimal solution for a specific problem.

From a scientific perspective, our research has helped us gain a better understanding of how to optimally design simulation training for undergraduate students with limited clinical experience without overwhelming them with too-complex situations. This research is embedded in a learning theory that supports gradually exposing learners to complex problems, starting with simple situations, then increasing complexity as they become more skilled. Our research provides insights into what students find complex in simulation, helping us plan this gradual exposure considering their background and readiness.

2. TO WHOM, IN ADDITION TO THE ACADEMIC COMMUNITY, ARE YOUR RESEARCH RESULTS OF INTEREST AND WHY?

In educational research, specifying interest “in addition to the academic community” must, of course, begin within academia. Our immediate target group is educators involved in designing and facilitating simulation-based training for undergraduates. When designing a simulation, educators must be careful not to overwhelm students with unnecessary distractions in the scenario and in the environment. Instructors who facilitate these simulations might also benefit from the insights of our research by ensuring that they address students’ needs during the simulation and during the debriefing. When students face complex problems, they often choose to focus on certain aspects of the task and ignore others, and these choices are strategic. When debriefing these situations, facilitators need to be aware of these rationales for these choices and adapt their line of questioning accordingly.

Students themselves are the next presumable beneficiaries of this research. Our studies attempted to understand how students react when facing complex problems in simulation. We found that students

are strategic when they struggle with elements of the simulation. They either focus their attention on things they have already mastered, to avoid losing face in front of their peers, or they challenge themselves and focus on aspects they have not fully mastered, from which they want to learn. This process occurs both consciously and unconsciously. Knowing how they react in these situations might help them deliberately pursue their learning goals according to their own educational needs, and might drive and focus debriefing discussions.

3. INTO WHICH CONCRETE PRODUCTS, SERVICES, PROCESSES, ACTIVITIES OR COMMERCIAL ACTIVITIES WILL YOUR RESULTS BE TRANSLATED AND SHAPED?

The dissemination of our results, and their practical consequences, has already started. Three studies (Chapters Two, Three and Four) are already available as published manuscripts in peer-reviewed journals and have already received citations. One study (Chapter Five) has been accepted in a similar journal. Our results have also been presented at several national and international conferences, either through posters or oral presentations. As a result of this dissemination and the interest it aroused, I am helping other Canadian pharmacy schools in building their own professional practice laboratories, and collaborating with nursing schools in the province of Quebec who are developing simulation in their undergraduate programs.

Findings from this research are already shaping the development of scenarios in the Doctor of Pharmacy program in Quebec. As mentioned earlier, the scope of practice in pharmacy has expanded greatly in Canada, which calls for the revision of the simulation curriculum and the development of new scenarios that comprise all professional activities pharmacists are now allowed to do. Over one hundred scenarios need to be reviewed to help students deal with complex clinical problems. The blueprint developed in Chapter Four is already guiding the development of these scenarios. In Chapter Five, we have focused on tools that can enhance the learning experience of students who are observing rather than being actively involved in the simulation. Our findings support the use of observation tools that align with the type of scenarios they are watching.

4. TO WHAT DEGREE CAN YOUR RESULTS BE CALLED INNOVATIVE IN RESPECT TO THE EXISTING RANGE OF PRODUCTS, SERVICES, PROCESSES, ACTIVITIES AND COMMERCIAL ACTIVITIES?

The context in which this research was conducted is innovative. Very little research had been conducted in simulation for undergraduate healthcare students, especially in fields such as pharmacy—that is, outside medical education strictly defined. Simulations that are highly realistic usually mirror the real setting in which healthcare is provided. These learning activities were mostly reserved for more

advanced learners who have previously been exposed to such complex situations. Nowadays, more undergraduate programs have integrated them in their curriculum to teach clinical skills. In pharmacy education, very few institutions are equipped to reproduce a pharmacy environment and conduct simulations for their students. Our results therefore are very innovative for educators who design simulations for novice learners, since little was known on how to adapt and design the scenarios to account for this inexperience.

Combining various ways to collect data (quantitative and narrative) was also innovative in the field of simulation. Most studies in the field of simulation measure the effectiveness of the trainings by assessing performance with numbers or by quantifying specific aspects of the performance. Our focus on the learning during the simulation rather than on the outcome and gaining insights from students themselves through interviews makes this research original.

5. HOW WILL THIS/THESE PLAN(S) FOR VALORISATION BE SHAPED? WHAT IS THE SCHEDULE? ARE THERE RISKS INVOLVED? WHAT MARKET OPPORTUNITIES ARE THERE AND WHAT ARE THE COSTS INVOLVED?

The valorisation of this research can be divided into different streams. First, dissemination of the findings has already begun. To date, three of the chapters are publications available online and the last one has been accepted by a journal and should be published in early 2023. Our work has already been presented in local and international conferences. To increase our visibility, reach, and effect, our results are presented in both English and French, and at conferences in both pharmacy education and health professions education. I plan to increase my presence on social media over the next year to promote the manuscripts. This thesis is scheduled to be published as a book in 2023.

The second area of impact is the practical uptake of our findings, including the redesign of our simulation curriculum in Quebec. The process has already started and should expand over four years. Moreover, Laval University (my institution) is hosting the Canadian Pharmacy Education and Research Conference in Quebec in 2024, as we celebrate the centennial of our School of Pharmacy. We are planning to invite faculty members from across the country to visit our unique facilities and to exchange practices.

