

Enhancing Real-World Competence

Training Patient-Pharmacist Interactions with Simulation-Based Learning at Ghent University

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Introduction

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Pharmacists as Co-Treaters play an increasingly vital role in patient care, taking on positions such as family pharmacist and clinical pharmacist. As healthcare becomes more complex, pharmacists are expected to go beyond their traditional roles and engage in **communication, teamwork, and decision-making** within interdisciplinary settings. These non-technical skills are crucial for effective patient care and collaboration with other healthcare providers.

However, traditional teaching methods like lectures and tutorials **fall short in developing these critical competencies**. To address these shortcomings, new approaches, such as those employed in the **Integrated Medication Counseling and Monitoring (IMCM) course**, are necessary—utilizing simulation-based training in order to enhance these competencies. This poster showcases how Ghent University is incorporating this innovative shift in pharmacy education.

Background

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What is Simulation-Based Training (SBT)?

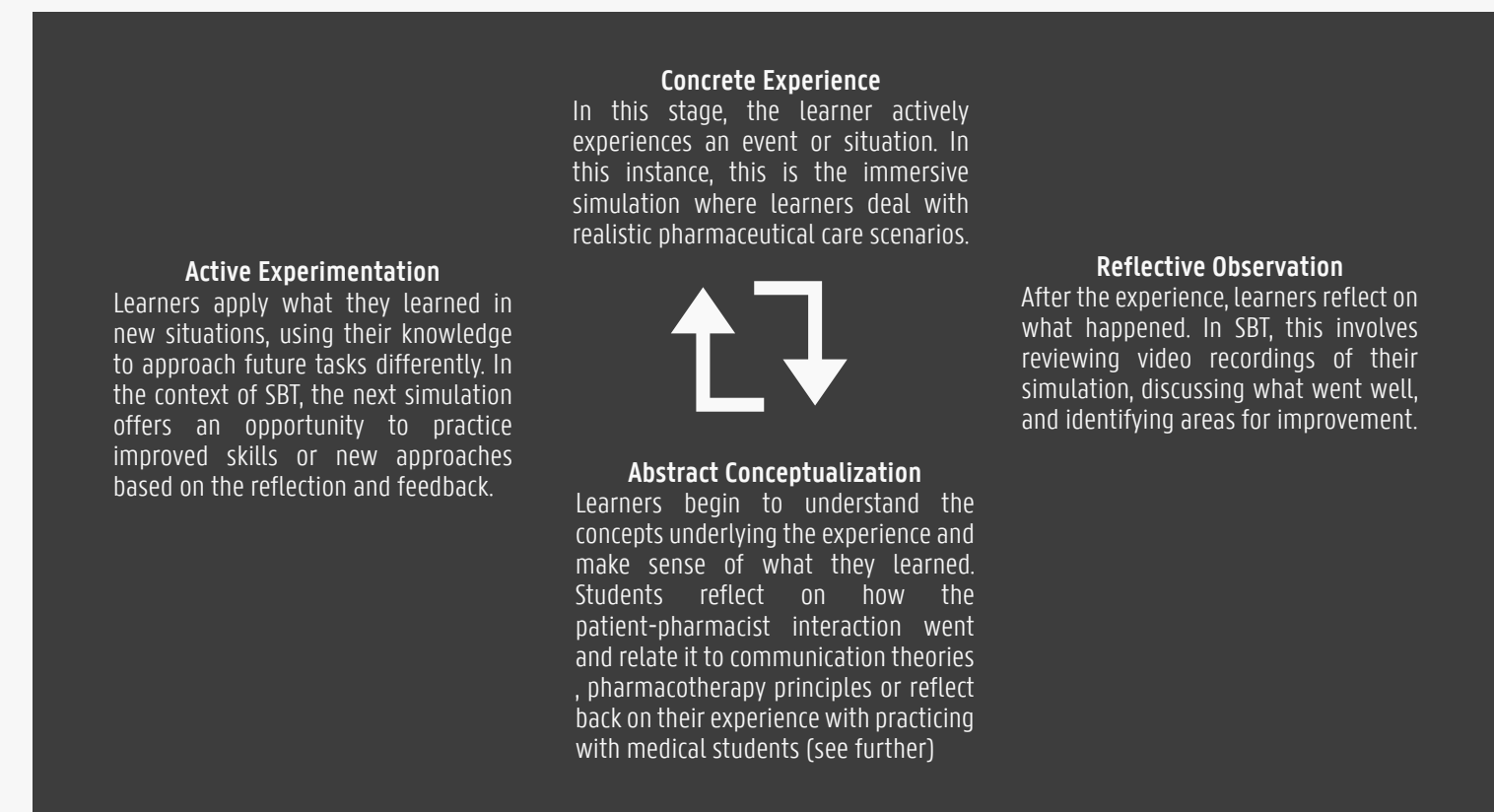
Simulation-Based Training (SBT) is an educational method that uses realistic scenarios and simulated environments to help learners develop both technical and non-technical skills. It has become especially popular in healthcare education because it allows students to practice in a risk-free setting, where they can make mistakes and learn without causing harm to real patients.

Experiential Learning Theory

David Kolb developed the Experiential Learning Theory (ELT), which outlines a four-stage cycle of learning based on experience. His theory emphasizes that learning is a process where knowledge is created through the transformation of experience. Kolb's model is often connected to active, hands-on learning environments such as SBT.

Kolb's Four-Stage Cycle and SBT

Figure 1: Kolb's four stage cycle in SBT.



Ghent University's Approach

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At Ghent University's Faculty of Pharmaceutical Sciences, the course Integrated Medication Counseling and Monitoring (IMCM, or Geïntegreerde Medicatiebegeleiding en Medicatiebewaking - GMBB in Dutch) is a core component of the Master in Pharmaceutical Care (Master in de Farmaceutische Zorg - MaFZ) program. The course is designed to deepen students' knowledge of pharmacotherapy and expand their ability to apply this knowledge in real-world clinical settings.

Course Context

IMCM (or GMBB) prepares students for the expanding role of the pharmacist as a central figure in patient care. The curriculum emphasizes the analysis of medication histories, performing medication reviews, and identifying and resolving medication-related problems. Through case discussions and practical exercises, students are trained to bridge the gap between theoretical pharmaceutical knowledge and its practical application in various settings.

The course covers diverse areas such as:

- Medication reconciliation and reviewing, with attention to detecting medication-related issues.
- Clinical case discussions covering general and specific populations (e.g., the elderly, children, pregnant women).
- Simulation of patient-pharmacist interactions, self-care advice, and managing drug interactions.
- Interprofessional collaboration, including working with medical students on complex cases like polypharmacy management.

IMCM's role in the curriculum reflects Ghent University's focus on shaping pharmacists who can act as vital contributors in patient-centered care.

Teaching Tools and Methods

The **Integrated Medication Counseling and Monitoring (IMCM)** course places a strong emphasis on Simulation-Based Training (SBT), allowing students to practice essential skills such as communication, decision-making, and problem-solving in a controlled environment. In a realistic setting, students simulate real-life patient interactions, conduct medication reviews, and tackle complex therapeutic cases.

The course benefits from a **state-of-the-art active-learning skills lab**, which was introduced in 2023. This lab is equipped with advanced video and communication tools, enabling students to record, review, and reflect on their simulated interactions. These tools facilitate deeper learning by promoting **self-assessment** and **instructor feedback**. The course design is rooted in Kolb's Experiential Learning Theory, which provides a solid foundation for the active-learning approach.

Students participate in SBT exercises in groups of four or five. One student role-plays as the pharmacist, another as the patient, while the rest observe and take notes. After reviewing the recordings and reflecting with the group, the role-playing students are given the opportunity to re-do the training and apply feedback. Roles are then rotated, allowing all group members to participate in both roles.

Interprofessional learning is also a key component of the IMCM course. Pharmacy students collaborate with medical students to explore complex healthcare challenges. This teamwork approach not only mirrors the collaborative nature of modern healthcare, where pharmacists work alongside other healthcare providers to ensure optimal patient outcomes, but also builds a solid foundation of knowledge and experience that students can later apply and retrieve during SBT exercises.

Results & Evaluation

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Student Feedback & Outcomes

Students have responded positively to the course, particularly appreciating the realism of the case-based exercises. They value the opportunity to train and practice interactions between pharmacist and patient, recognizing the importance of these simulations for real-life scenarios, including their internships, which occur in the same year as the course.

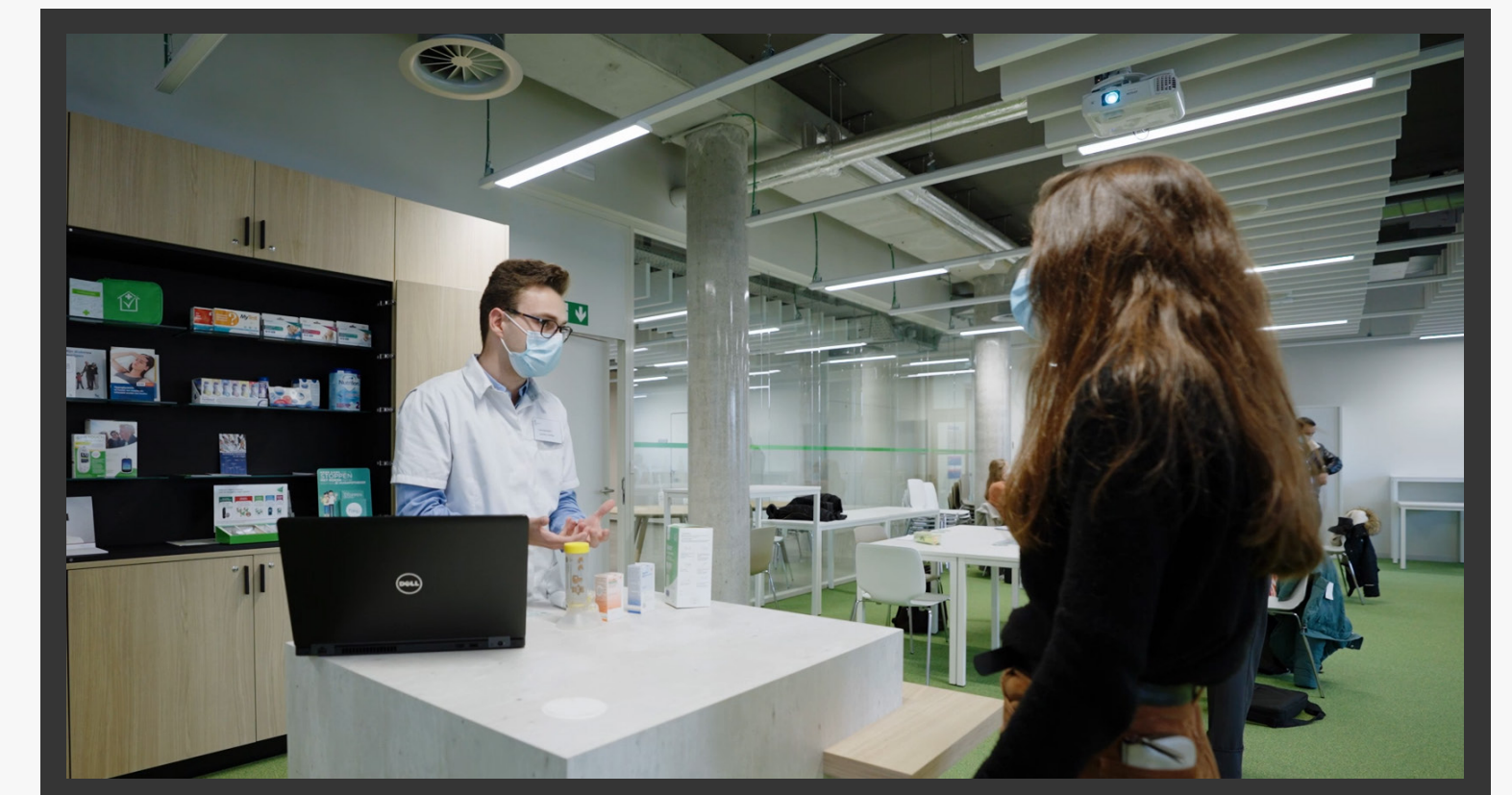
Students also highlight the benefit of practicing these scenarios independently, without direct supervision, as it allows them to feel more at ease. While the staff is available for technological facilitation, students prefer to manage the role-play interactions themselves. Interestingly, there is a split in preferences regarding the use of recordings: some students enjoy watching their own simulations to reflect and improve, while others prefer to rely on group member evaluation and feedback instead.

Although the full impact of the state-of-the-art studio introduced in 2023 is not yet measured, data from the student course evaluation of 2024 will provide insights into its effectiveness. In the future, there are plans to implement more comprehensive methods for measuring the deeper learning impact at various stages of the course.

Conclusion

Simulation-Based Training (SBT) has become a critical part of the curriculum at Ghent University, enhancing the way students learn and practice essential skills. Moving forward, there are plans to further develop active learning spaces and increase the use of technology to support Competency-Based Education (CBE). A key focus will also be on refining the learning impact measurement methods throughout the course, ensuring continuous improvement in student outcomes.

Figure 2: SBT in action: students practice real-life cases and roleplay as both pharmacist and patient.



Bibliography

- Rathinavelu, M., Reddy, S. N. K., Karanam, S., Jonnagadla, S. L., Jollireddy, S., & Bharambe, D. D. (2023). Case-based learning in pharmacy practice: Observations from an Indian pharmacy college. *Journal of Pharmaceutical Research International*, 35(23), 1-9.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.
- Lloyd, M., Watmough, S., & Bennett, N. (2021). Simulation-based training applications in clinical pharmacy. *The Pharmaceutical Journal*. Retrieved from <https://pharmaceutical-journal.com/article/research/simulation-based-training-applications-in-clinical-pharmacy>

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