



PIONEERING EDUCATIONAL PERSPECTIVES

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Preface

Pioneering Educational Perspectives: Series 2025 is a collection of thought-provoking insights and research contributions exploring contemporary educational trends and practices. This eBook presents a diverse range of perspectives on innovative teaching methodologies, digital learning strategies, and transformative approaches in education. Designed to serve as a resource for educators, researchers, and practitioners, it aims to inspire meaningful discussions and advancements in the field. Through carefully curated chapters, this publication offers fresh ideas and practical solutions to enhance learning experiences in an ever-evolving educational landscape.

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PHARMACOLOGY REIMAGINED: INNOVATING DRUG MECHANISM TEACHING WITH TEXT AND INTERACTIVE ANIMATION FOR AN ENHANCED UNDERSTANDING OF CLINICAL OUTCOMES FOR MEDICAL STUDENTS

Nafeeza Mohd Ismail^{1*}, Aida Lina Alias², Siti Norsyafika Kamarudin³, Noor Fahitah Abu Hanipah⁴ & Muhammad Huzaimi Haron⁵

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ABSTRACT

This abstract details the development of an animated self-learning package (SLP) to aid students in comprehending pharmacodynamics. Conventional lectures fall short of keeping students engaged and guiding them towards a complete understanding of concepts. The innovation lies in using animations to create a dynamic and captivating learning experience, allowing students to relate these concepts to real-life improvements observed in patients. It allows individuals with different learning styles to retain intricate drug mechanisms to the fullest extent possible. One of the advantages is that medical professionals gain a deeper comprehension of drug actions, resulting in improved patient care and a reduced likelihood of negative drug reactions. The development of a PharmEd Learning Platform, which aims to meet the pressing demand for health profession education, has the potential for commercialisation. This novel approach establishes a new standard in pharmacological education by bridging the gap between basic concepts and clinical outcomes—a direction towards modern educational methods. The societal benefits include an increased understanding of drug actions among medical professionals, which leads to better patient care and a lower risk of adverse drug reactions. The creation of a PharmEd Learning Platform, which addresses the significant need for health profession education, has the potential for commercialisation.

KEYWORDS: Pharmacology education, Self-learning packages, Animations, Pharmacodynamics, Patient safety.

PROBLEM AND OBJECTIVE

Pharmacology education has historically been regarded as challenging for students to acquire knowledge (Fasinu & Wilborn; 2024). The conventional approach to teaching pharmacology, where a lecturer imparts knowledge to students through unidirectional communication, has various constraints. This encompasses a deficiency in active participation and challenges in comprehending essential information. Traditional lectures frequently fail to actively engage students in the learning process, leaving them as passive recipients of information, resulting in shallow understanding, boredom, and disengagement. Didactic lectures may not encourage students to think critically or grasp concepts thoroughly (Panchasara et al., 2019). Instead of promoting a thorough understanding of the material, these lectures frequently emphasise rote memorisation of facts. Traditional lecture formats rarely emphasise the active processing and application of knowledge necessary for deep conceptual understanding. Aside from that, traditional lectures have limited interaction, which prevents students from asking questions,

discussing ideas, or collaborating with peers (John et al. 2014). This lack of interaction can impede students' ability to clarify misconceptions and gain a deeper understanding of the subject. Without interaction or participation, students are less likely to be interested and struggle to grasp the fundamental concept of the subject (Putman et al. 2012). Furthermore, understanding pharmacodynamics, or the mechanisms by which drugs cause biological effects, is a fundamental concept in basic pharmacology that requires understanding and imagination at the cellular and molecular levels. Some students have difficulty understanding how drugs affect the body intracellularly. The primary goal is to design a pharmacology self-learning package (SLP) on pharmacodynamics that will help learners better understand how drugs work and cause effects in the human body.

The SLP is composed of two main components:

1. A text-based guide that provides written information and explanations about drug actions.
2. Animations that dynamically illustrate the processes and effects of drugs on the body.

The package is particularly useful for the following target audience:

1. Visual learners, who learn best through images, diagrams, and other visual aids (Clarke III et al., 2006).
2. Any individual who may benefit from dynamic, moving representations, as they illustrate concepts better than static text or images alone.
3. Individuals who benefit from dynamic, moving representations grasp complex concepts better than they would from static text or images alone.

In summary, the SLP combines written information with animated visuals to make the learning process more effective and engaging, especially for those who prefer or need visual and dynamic forms of learning to understand complicated topics like drug actions.

DESIGN DESCRIPTION

We are aware that conventional pharmacology education sometimes depends on static materials, which might make it difficult knowledge to grasp. Even if modern techniques like animations are readily available, these technologies can lack enough connection with other learning tools. Our proposed animated SLP provide a flexible answer combining the benefits of conventional and contemporary methods. We aim to make the learning process more fun by including interesting animations in front of educational material. Using this method helps drug processes to be more approachable and familiar with clinical findings from real life. Moreover, our SLP supports diversity by allowing a variety of learning approaches, therefore enhancing the retention of important information. By adding colourful images and interactive components, our SLP transforms pharmacology instruction to the next level and increases student involvement, hence boosting the training of healthcare professionals (Rubaiy, H. N. .,2021).

VISUALS

The video is designed for medical students to easily grasp the fundamental aspects of pharmacodynamics. The illustrations and animations in this SLP help the viewers to understand the molecular aspects of pharmacodynamics, which are often difficult to explain by the lecturers and imagined by the students.



Figure 1: Introduction to an engaging animated SLP

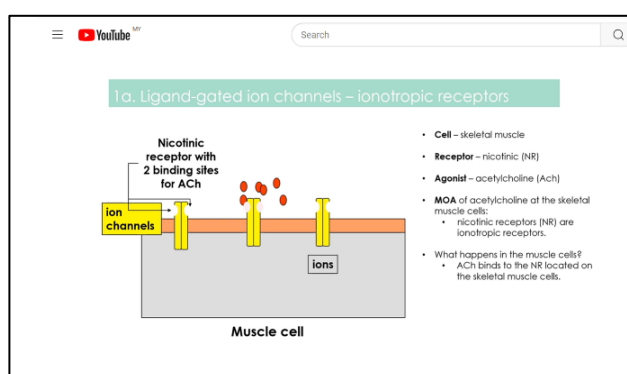


Figure 2: The basic mechanism of the ligand-gated ion channel and its clinical outcomes.

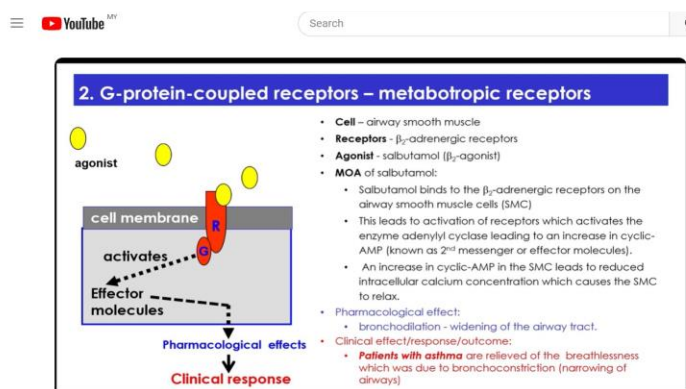


Figure 3: The basic mechanism of the G-protein-coupled receptors and their clinical outcomes.

NOVELTY AND UNIQUENESS

We recognise that conventional pharmacology education often depends on fixed materials, which might contribute to the difficulty in understanding complex ideas. Although the latest methods like animations are available, they sometimes lack sufficient connection with other educational resources. The animated SLP proposed offers a flexible solution that integrates the advantages of traditional and innovative approaches. We attempt to make learning more pleasurable by combining appealing animations with relevant text. By taking this approach, pharmacological mechanisms become more accessible and relevant to real-world therapeutic

outcomes. Furthermore, our SLP caters to a variety of learning styles, encouraging inclusion and enhancing knowledge retention and elevates pharmacology education by combining vibrant visuals and interactive components, hence increasing student engagement and boosting healthcare professional training (Karaksha, A et al., 2013).

BENEFITS TO MANKIND

The SLP provides a significant advantage to society by enhancing medical education and enhancing patient safety. With the SLP, students and junior doctors can enhance their knowledge of pharmacology and apply it in real-life clinical settings, resulting in a valuable and enduring learning opportunity. When information is given in an understandable style, treatment options are better considered. This means that patients respond better and there are fewer errors when medications are administered. Because of its flexibility, the SLP allows students to study at their own pace, which is convenient for busy people while ensuring comprehension.

Any healthcare provider worth their salt will be abreast of the latest research findings. Maintaining familiarity with current best practices is essential for patient safety. Continuous learning is facilitated by self-evaluation tools and progress tracking, which reveal areas for improvement. This ensures that students are always prepared to deliver exceptional care. The goal of making the SLP affordable and user-friendly is to increase the number of professionals who have access to its features. There are many multimedia features to enhance the learning experience, and the content is designed to be fascinating and enjoyable to interact with. This strategy simplifies complex pharmacological ideas for students, allowing for more effective and safer treatment options. When complex concepts are simplified, healthcare workers can enhance their abilities and understanding, resulting in improved patient care. The SLP plays a crucial role in improving pharmacology education and ensuring patient safety by providing future doctors with the essential knowledge and skills for accurate and effective treatment.

COMMERCIAL POTENTIAL

The PharmEd Learning Platform has significant market potential due to the growing demand for online education, a large target audience, global reach, and potential for institutional partnerships. Its competitive advantage lies in its comprehensive learning experience, personalization, cutting-edge technology, and community-building features. The platform's scalable design, supported by modular architecture, cloud-based infrastructure, continuous improvement strategies, and partnership opportunities, ensures its ability to grow and adapt to meet the evolving needs of the healthcare education market.

CONCLUSION

Overall, the development of a PharmEd Learning Platform aims to fulfil a crucial requirement in health profession education by updating learning techniques, improving involvement and retention, customising the learning process, connecting theoretical knowledge with practical application, enabling collaboration, facilitating ongoing professional growth, advocating for evidence-based practice, and meeting the demands of the workforce. The implementation of this comprehensive strategy guarantees that healthcare personnel have the requisite knowledge and abilities to deliver patient care of exceptional quality.

REFERENCES

- Clarke III, I., Flaherty, T. B., & Yankey, M. (2006). Teaching the visual learner: The use of visual summaries in marketing education. *Journal of Marketing Education*, 28(3), 218–226.
- Fasinu, P. S., & Wilborn, T. W. (2024, February). Pharmacology education in the medical curriculum: Challenges and opportunities for improvement. *Pharmacology Research Perspectives*, 12(1), e1178. <https://doi.org/10.1002/prp2.1178>
- John, O., Main, S., & Cooper, M. (2014). Student perceptions of online interactive versus traditional lectures; Or how I managed not to fall asleep with my eyes open. *Journal of Online Learning and Teaching*, 10, 405–405.
- Karaksha, A., Grant, G., Anoopkumar-Dukie, S., Nirthanan, S. N., & Davey, A. K. (2013). Student engagement in pharmacology courses using online learning tools. *American Journal of Pharmaceutical Education*, 77(6), 125. <https://doi.org/10.5688/ajpe776125>
- Panchasara, A. K., Patel, B. J., & Vora, M. B. (2019). A comparative study of problem-based learning versus didactic lecture as a teaching-learning method in pharmacology among undergraduate medical students. *Journal of Research in Medical Education & Ethics*, 9(1), 51–54.
- Putman, M. S., Ford, K., & Tancock, S. (2012). Redefining online discussions: Using participant stances to promote collaboration and cognitive engagement. *International Journal of Teaching and Learning in Higher Education*, 24(2), 151–167.
- Rubaiy, H. N. (2021). Strategies to inspire students' engagement in pharmacology courses. *Pharmacy*, 9(2), 70.