



Factors to Consider While Implementing Spaced Repetition Software Applications Like Anki as a Learning Tool in Medical Education

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Dear Editor:

As the medical profession demands a wide range of knowledge and its timely application, it becomes invariably important that medical students have appreciable retention of knowledge and the ability to apply it in real-life scenarios. In light of this, there are several approaches to enhance the memory and long-term retention of medical knowledge. In this letter, the key factors that one should consider while implementing spaced repetition software applications like Anki as a learning tool in medical education have been briefed.

A recent article by Mehta et al. studied the implications of Anki—a spaced repetition tool to enhance the retention of knowledge of first-year medical students thereby leading to improved academic performance [1]. While supporting the potential benefits of Anki in medical education as substantiated in the article, there may be a few areas to consider while implementing Anki as a learning tool to ensure that the learning experience is holistic and directs the students in the path of improved comprehension, retention, and prompt application of knowledge and skills. The main concerns with the spaced repetition approach in learning are the time commitment for consistent reviews, reliance on technology, potential monotony leading to reduced motivation, risk of information overload from excessive flashcards, limited context hindering deep understanding, the temptation for passive recognition rather than active

recall, insufficient comprehension without complementary learning methods, and limited effectiveness for skill-based or hands-on learning.

Potential solutions to this can include creating hybrid flashcards for efficient use of time and technology. To overcome monotony and information overload, consider designing flashcards in problem-based and case-based styles, repetition of the same information but in a different manner that facilitates thinking over recognizing, classroom discussion and peer discussion on problem-based flashcards, periodic assessment in the learning application that tests the retention as well as application of the knowledge. It is also important to recognize that spaced repetition may be less effective for skill-based or hands-on learning. For such subjects, incorporate practical exercises, simulations, and hands-on practice. Thus, considering these factors and incorporating appropriate changes will enhance the quality of Anki-like applications and make learning more meaningful and comprehensive.

Declarations

Conflict of Interest The author declares no competing interests.

References

1. Mehta A, Brooke N, Puskar A, et al. Implementation of spaced repetition by first-year medical students: a retrospective comparison based on summative exam performance. *Med Sci Educ.* 2023. <https://doi.org/10.1007/s40670-023-01839-3>.

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