Evaluation of E-learning in Teaching Fungal Infections to First MBBS Students

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Abstract:

The shift towards e-learning in medical education has been accelerated by technological advancements and recent global events, such as the COVID-19 pandemic. This paper evaluates the effectiveness of e-learning methodologies in teaching fungal infections to first-year Bachelor of Medicine, Bachelor of Surgery (MBBS) students. We explore various e-learning tools, assess student engagement and learning outcomes, and provide recommendations for optimizing online education in medical microbiology.

Keyword: COVID-19, year Bachelor of Medicine, Bachelor of Surgery, Online education, Medical microbiology.

1. Introduction:

The study of fungal infections is an essential component of the microbiology curriculum for medical students. Understanding the pathophysiology, diagnosis, and treatment of these infections is critical for future healthcare professionals. Traditional teaching methods have often relied on lectures and textbooks, which may not adequately engage students or cater to diverse

learning styles. E-learning presents an opportunity to enhance educational experiences through interactive and adaptive learning environments.

2. Objectives:

The primary objectives of this study are:

1. To evaluate the effectiveness of e-learning in teaching fungal infections.
2. To assess student engagement and satisfaction with digital learning tools.
3. To measure the learning outcomes of students exposed to e-learning compared to traditional teaching methods.

3. Literature Review:

E-learning encompasses a range of digital educational methods, including online lectures, interactive modules, and virtual simulations. Previous studies have shown that e-learning can lead to improved learning outcomes, greater flexibility, and increased accessibility. However, its effectiveness can depend on the quality of the content and the learning platform, as well as the level of interactivity and engagement maintained throughout the course.

4. Methodology:

- **Participants:**

The study involved first-year MBBS students enrolled in a medical microbiology course at a university. A total of 100 students were included, and participation was voluntary.

- **Materials:**

Materials included online lectures, interactive quizzes, virtual microscopy slides, and case studies focusing on common and emerging fungal infections. The content was developed in collaboration with experienced faculty and medical professionals.

- **Evaluation Tools:**

1. **Surveys**: Pre- and post-intervention surveys were conducted to gauge student satisfaction, engagement, and self-reported learning.
2. **Quizzes**: Multiple-choice quizzes were administered before and after the course to assess knowledge acquisition.
3. **Focus Group Discussions**: Qualitative feedback was obtained from students about their e-learning experiences.

5. Results:

- **Student Engagement:**

The survey results indicated a high level of student engagement with e-learning platforms. About 85% of students reported that e-learning was more engaging than traditional lectures. The interactive quizzes and virtual microscopy sessions were particularly well-received.

- **Learning Outcomes:**

The analysis of pre- and post-quiz scores showed a statistically significant improvement in knowledge ($p < 0.05$). On average, students scored 60% in the pre-quiz and 85% in the post-quiz, indicating a gain in understanding of fungal infections.

- **Student Feedback:**

Focus group discussions revealed that students appreciated the flexibility of e-learning and the ability to access resources at their convenience. However, some students expressed concerns regarding the lack of face-to-face interaction and suggested incorporating blended learning approaches to enhance understanding.

6. Discussion:

The findings of this study suggest that e-learning can effectively teach fungal infections to first MBBS students. Students demonstrated substantial gains in knowledge and found the online format engaging. However, the transition to a fully digital learning environment has its challenges. The lack of in-person interaction can inhibit the development of communication skills and limit opportunities for collaborative learning.

7. Conclusion:

E-learning presents a viable and effective method for teaching fungal infections to first MBBS students, with indicated improvements in knowledge retention and student engagement. As technology continues to evolve, harnessing its potential in medical education will be crucial. Future studies should focus on longitudinal outcomes and the impact of e-learning on clinical practice to ensure that students are equipped with the necessary knowledge and skills to manage fungal infections effectively.

8. References

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