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Effectiveness of Technology Enhanced Learning in Orthodontic Teaching

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Abstract : Aims Technological advancements in teaching and learning have made significant improvements over the past decade and have been incorporated in institutions to aid the learner's experience. This review aims to assess whether Technology Enhanced Learning (TEL) pedagogy is more effective at improving students' attitude and knowledge retention in orthodontic training than traditional methods. Methodology The searches comprised Systematic Reviews (SRs) related to the comparison of TEL and traditional teaching methods from the following databases: PubMed, SCOPUS, Medline, and Embase. One researcher performed the screening, data extraction, and analysis and assessed the risk of bias and quality using A Measurement Tool to Assess Systematic Reviews 2 (AMSTAR-2). Kirkpatrick's 4-level evaluation model was used to evaluate the educational values. Results A sum of 34 SRs was identified after the removal of duplications and irrelevant SRs; 4 fit the inclusion criteria. On Level 1, students showed positivity to TEL methods, although acknowledging that the harder the platforms to use, the less favourable. Nonetheless, the students still showed high levels of acceptability. Level 2 showed there is no significant overall advantage of increased knowledge when it comes to TEL methods. One SR showed that certain aspects of study within orthodontics deliver a statistical improvement with TEL. Level 3 was the least reported on. Results showed that if left without time restrictions, TEL methods may be advantageous. Level 4 shows that both methods are equally as effective, but TEL has the potential to overtake traditional methods in the future as a form of active, student-centered approach. Conclusion TEL has a high level of acceptability and potential to improve learning in orthodontics. Current reviews have potential to be improved, but the biggest aspect that needs to be addressed is the primary study, which shows a lower level of evidence and heterogeneity in their results. As it stands, the replacement of traditional methods with TEL cannot be fully supported in an evidence-based manner. The potential of TEL methods has been recognized and is already starting to show some evidence of the ability to be more effective in some aspects of learning to cater for a more technology savvy generation.

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