

Using e-portfolio tasks to identify threshold concept acquisition in dentistry

Edward Waters
Delyse Leadbeatter

Abstract

Background: In 2023, Sydney University commenced a new dental curriculum, based on programmatic assessment and using an e-portfolio system to collect and collate assessment results and reflections. Removable prosthodontics (RP - the provision of dentures) involves distinct laboratory and clinical stages, and is an area of dentistry that students often find challenging [1]. Threshold concepts have been described as milestones that transform the way in which a student learns, understands and practices, and have been previously proposed as a way to define student learning outcomes in RP [2]. This study aims to build upon threshold concept theory in RP by analysing student e-portfolio submissions in this field.

Summary of work: a set of e-portfolio forms incorporating knowledge generating, reflective and self-assessment tasks were developed to understand how students learnt and assessed themselves in laboratory tasks in RP, and how they linked laboratory and clinical aspects of RP. These submitted forms were analysed using grounded theory.

Results: At the time of submission, partial data analysis has identified one new potential threshold concept in RP - "align clinical goals and laboratory requirements during all steps of denture fabrication". Student submissions provided evidence of independent identification and navigation of this threshold concept.

Discussion: Preliminary data suggest e-portfolio forms can be a useful tool to focus student self-learning of new concepts, and to record this learning. Learning recorded in e-portfolios can help to identify threshold concepts in dental curricula and to document student navigation of these concepts. Future work with the whole data set will aim to identify further threshold concepts in RP and guide dental curriculum development.

Conclusions and take-home messages: Beyond e-portfolios being a record of attainment, they can be a source of educational theory and deeply rich data that should not be neglected in future research.

References (maximum three)

[1] Johnson, G. M., Halket, C. A., Ferguson, G. P., & Perry, J. (2017). Using standardized patients to teach complete denture procedures in second year of dental school. *Journal of dental education*, 81(3), 340-346.

[2] Hyde, S., Flatau, A., & Wilson, D. (2018). Integrating threshold concepts with reflective practice: Discussing a theory-based approach for curriculum refinement in dental education. *European Journal of Dental Education*, 22(4), e687-e697