Abstract:
Concept maps have been used to promote meaningful learning and critical thinking. While these are crucially important in all disciplines, evidence for the benefits of concept mapping for learning in disciplines of medicine is limited. We utilised a randomised crossover study to assess the benefits of online testable pathogenesis (concept) maps for learning in Pathology by junior medical students at UNSW. Volunteer students (n=65) were randomly allocated into two groups, receiving access to either online maps or existing online resources for a two-week block of study on renal disease. Groups then crossed over for a second two-week block of study on liver disease. Outcomes were assessed by timed online quizzes, which included questions unrelated to topics in the pathogenesis maps as an internal control, as well as feedback questionnaires. In both blocks, the group with access to pathogenesis maps scored significantly higher on quiz questions related to topics covered by the maps than the control group (Block 1 p < 0.001; Block 2 p = 0.008), while scores for questions on topics unrelated to maps did not differ significantly between groups (p > 0.8 for both). In a third two-week block of study on pancreatic disease, both groups received pathogenesis maps, and collectively performed significantly better in quiz questions related to the maps than in unrelated questions. Questionnaire responses by both groups regarding pathogenesis maps were overwhelmingly positive. These results indicate that online testable pathogenesis maps are well accepted and can improve learning of concepts in Pathology by medical students.