

Virtual reality: The application of genomic technology in health sciences

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Background & Objectives

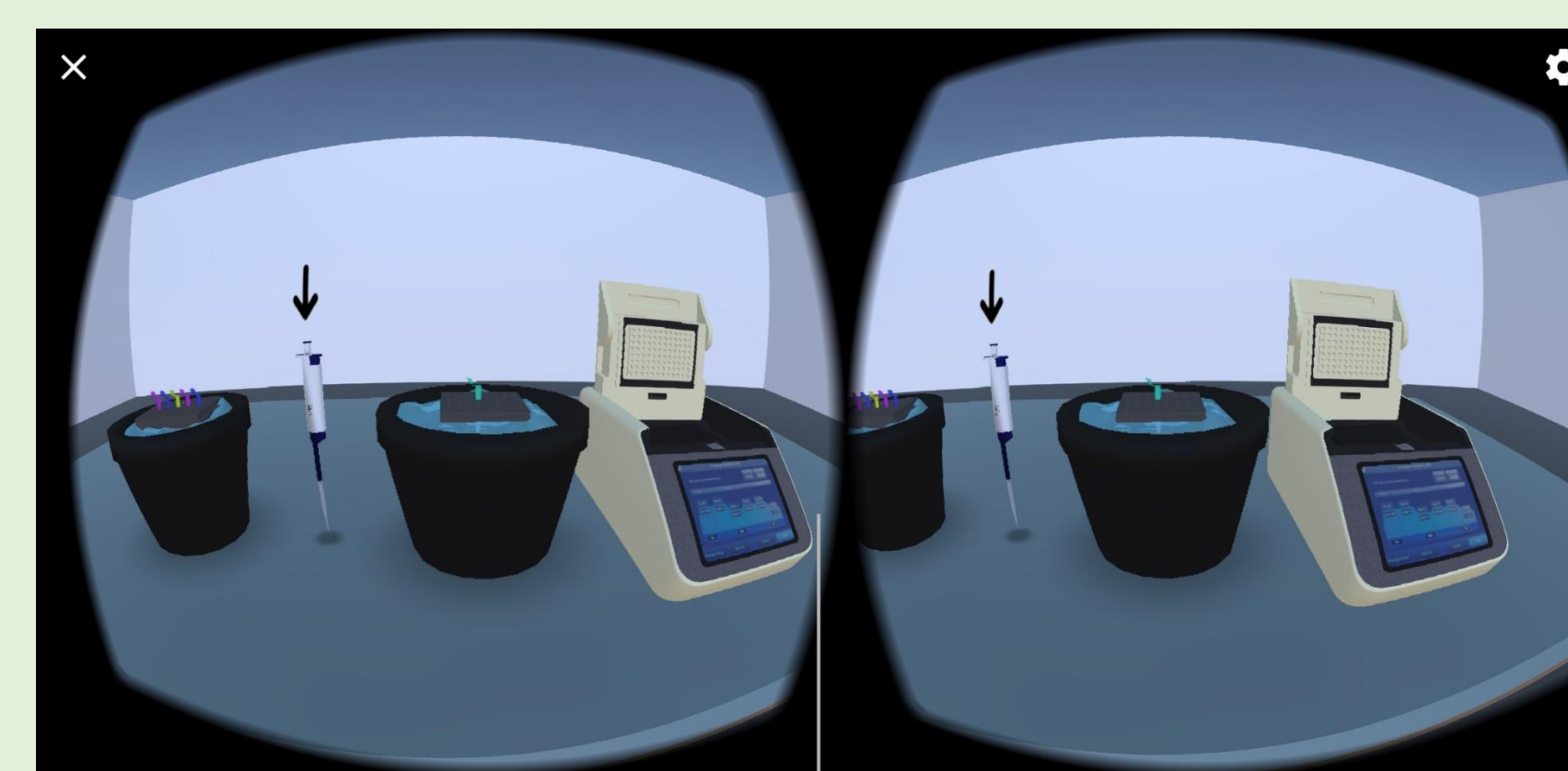
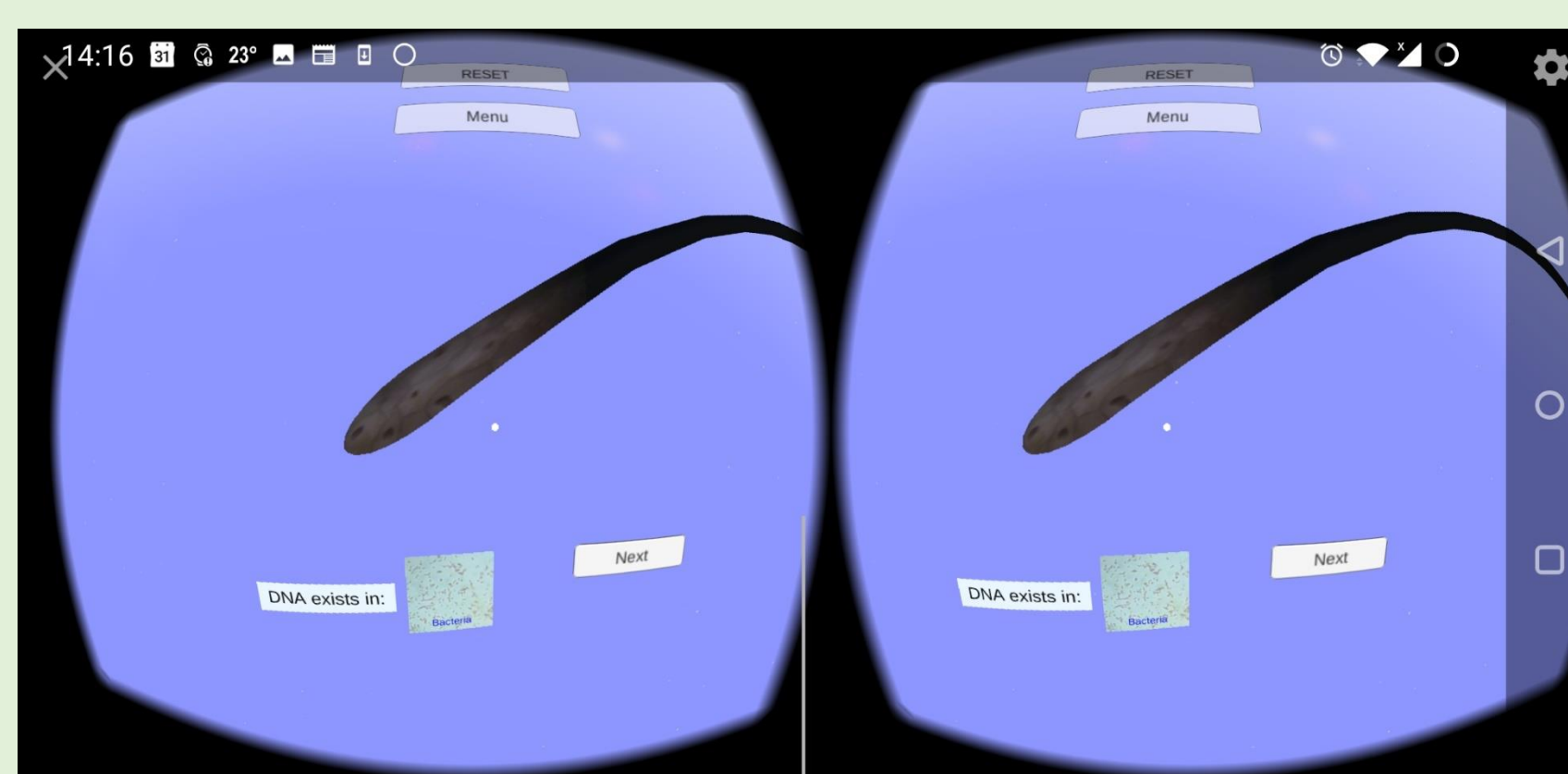
Modern genomic technologies have become one of the important tools in diagnosis and guidance in symptoms management. The technologies are commonly applied in identifying micro-organisms and viruses that further dictate specific therapeutic management or personal medicine.

In the nursing curriculum, our students will study laboratory identification of microbes. A number of modern genomic technologies have been discussed with their working principles and clinical applications. Most of our students found difficulties in understanding the principle of genomic technologies. Therefore, this project aims to develop tailor-made virtual reality games for explaining the complicated concepts and showing how the knowledge can be applied in some clinical examples.

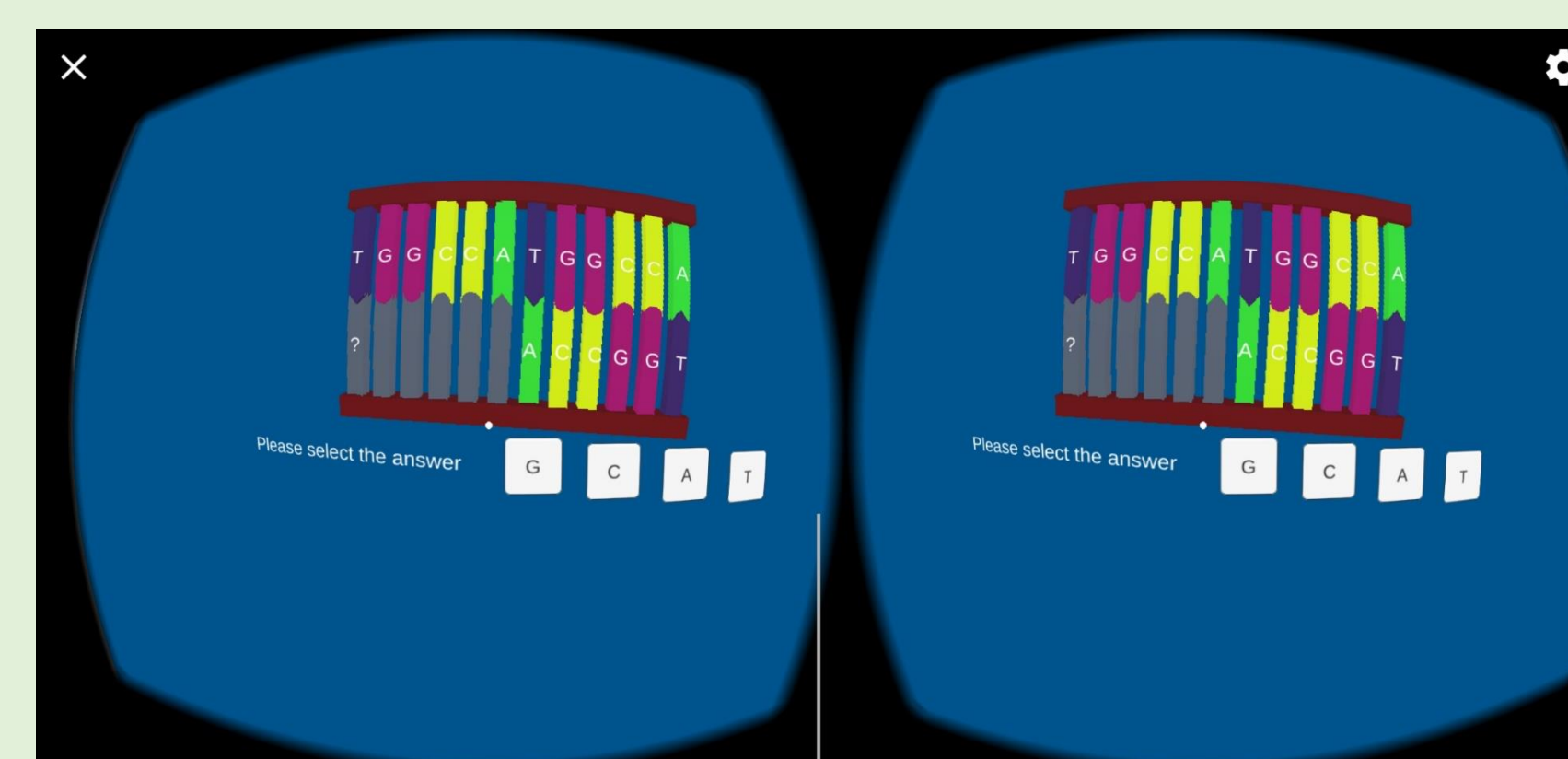
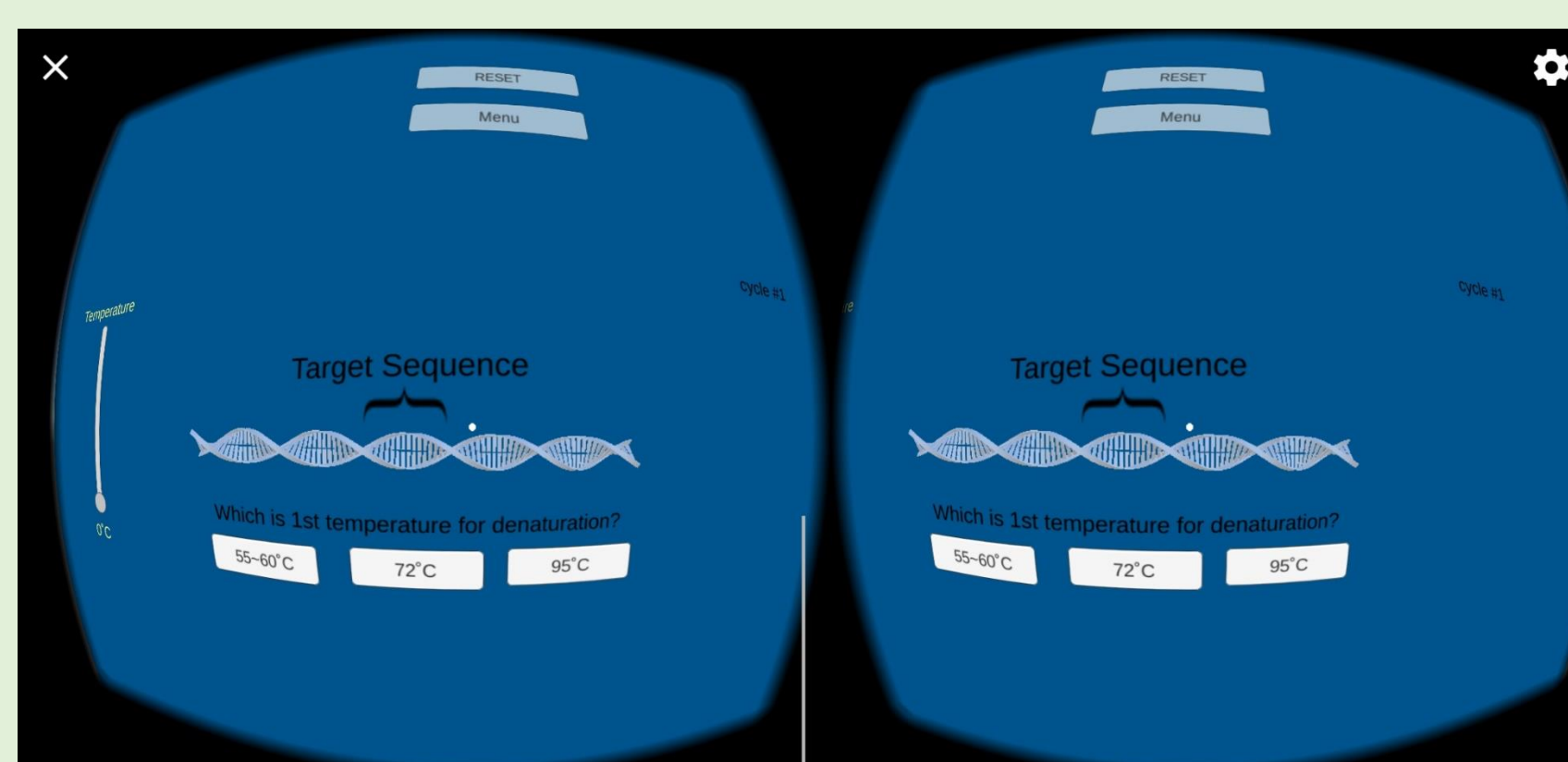
Methodology

A mobile app using virtual reality technology was designed and covered (i) 3D structures of key materials of genomic technology used in clinical applications and (ii) Working principles of genomic technology in 3D virtual reality environment. A quantitative survey was conducted to evaluate users' satisfaction based on eleven 6-point Likert-type questions.

Game 1 in the mobile app

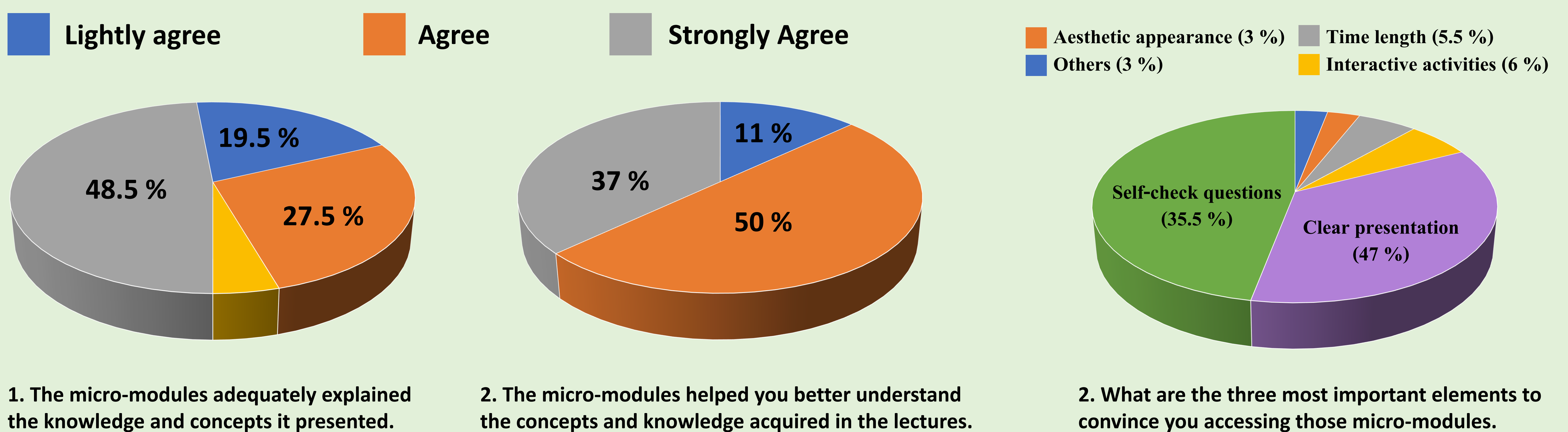


Game 2 in the mobile app



Findings

The results of the quantitative survey demonstrated that the students were satisfied with the clarity, depth and length of the content. They believed that those games were important in facilitating their learning in human genomics. Moreover, they appreciated the interactive exercises in each game. The present games were helpful to support student learning.



Acknowledgements

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