

# FACTORS AFFECTING STUDENT ENGAGEMENT IN SELF-DIRECTED ONLINE LEARNING MODULE

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## Background

In education delivered through an online self-regulated learning mode, students' ability to learn and engage varies with different factors. Considering the absence of teacher supervision and opportunities to provide direct feedback, students may lack opportunities to control and interact with a learning environment, which might lead them to less engagement with learning activities (Krause & Coates, 2008; Tuckman, 2007).

## Aims

The objective of this study is to investigate how students engage with and apply their effort to complete the tasks in the module. The study objective also includes the cognitive engagement to understand the concepts and how engagement has been demonstrated in the activities. Further investigated is the student enthusiasm towards task completion and student choice to engage with different learning tools like simulations and videos.

## Design and methods

This study investigates student engagement with two online learning modules. These modules address the concepts of introductory science topics 'Phase Changes' and 'Heat'. The modules are comprised of simulation models, videos with textual information and pictures. The learning models have been developed for self-paced independent study incorporating the extensive use of the Predict, Observe and Explain (POE) pedagogical strategy (White & Gunstone, 1992).

The modules are designed to occupy students for about 50-60 minutes. The total number of participations is 30 from the first year science students of an Australian university. The researchers used observational notes, recorded video, and interviews to collect and analysis the data. At the beginning, the students were given a brief introduction and then left to work independently with the online learning module. The researcher observed the student's computer screen activity in an adjacent room using VNC software. The researcher then monitored the student progress of the investigation and noting points for discussion. Echo360 software ran in the students' computer to record the student activity on the screen. Once students finished the activity, the researcher conducted a stimulated recall interview using the recorded student activity as the stimulus (O'Brien, 1993).

## Results

The study revealed that student engagement with the video activities is high, compare to the simulation models, due to less cognitive load required in the learning process. Several students demanded systematic instructions and guidance for improved engagement with the simulations. However, the simulation with the tactile perception attracted greater student engagement. Comparatively, student engagement was less when the task required explaining their understanding in response questions designed to check a concept. Nevertheless, the feedback sections produced high engagement as the students wanted to clarify their understanding during the learning process.

## Conclusions

This study brings forward the issues concerning the student engagement in self-directed online learning with possible suggestions. The findings will contribute to change the practice of the teachers and educators in developing the online module.

## References

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