

# 360-DEGREE VIRTUAL LAB AND FIELD TRIP INDUCTIONS FOR SCIENCE DISCIPLINES

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A significant part of learning in science disciplines requires participation in laboratory classes, field trips or clinical settings. These settings can be unfamiliar learning spaces, with instrumentation, equipment, OH&S requirements and instructions that are new to the user. They can be distracting for students who often become overwhelmed (Flaherty et al., 2022), reducing their ability to focus and attain the intended learning outcomes (Ural 2016). If students can become familiar with the space before attending in-person, this can help reduce and prevent overloading the working memory.

Interactive virtual inductions can help teach users, at scale, about the spaces, equipment and scenarios they will be using, and the associated OH&S requirements. These activities can be used before attending the location in-person, during the laboratory, field trip or clinical exercise, and even after. Such experiences have been shown to help students become more familiar with these spaces (Levonis *et al.*, 2020), which can reduce the cognitive and sensory load.

At RMIT University we have been developing virtual tours and inductions to better prepare students for in-person activities. Using 360-degree photos and videos, these experiences allow students to walk around the laboratory, field trip location or clinical setting, similar to Google maps street view, and discover information along the way. We have also included elements of gamification, where students score points for correctly identifying hazards and answering questions about how to manage them, within a timed framework (see Fig. 1). In this presentation I will present some examples of the 360-degree inductions and tours we have created. Feedback from these experiences has been very positive, with students commenting they like seeing the actual lab or field trip location, and the ability to personalise their learning.



Figure 1: Snapshots taken from the Virtual Chemistry Lab Safety Game

## REFERENCES

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