

THE “HOW” OF LEARNING IN LABS: PHYSICAL VS VIRTUAL VS REMOTE LABS

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AIMS

To develop a better understanding of the processes by which students learn in laboratory classes (all modes) to help improve the design of remote laboratories.

SOURCES OF EVIDENCE

Much of the existing literature of both classroom and virtual/remote laboratories has focused upon the learning outcomes but not on the learning processes. Recent studies [1,2] have shown that different learning outcomes for the different access modes, however the reasons for these differences are yet to be fully investigated. For example students in remote laboratories are reported as more reflective than those in physical laboratories, but there has not been a study identifying what it is about the remote mode that makes them that way. We will present what is reported in the literature with respect to the pros and cons of each mode.

MAIN ARGUMENT

Our recently funded ARC Discovery Project involves the identification of student learning processes in classrooms for remote laboratory settings. This project aims to determine the mechanisms through which students learn in a laboratory setting and answer key questions such as:

- What is the nature of student interactions in the labs (i.e. with whom and with what do students interact)?
- How do the patterns of these interactions correlate to the students' learning and assessment outcomes?
- How can online interfaces in remote labs provide the essential interactions for successful learning?

These questions will be answered by observations of laboratory classes, surveys of students and video recordings of lab classes.

REFERENCES

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