

BRIDGING THE GAP: VIRTUAL LAB TOURS FOR TRANSITIONING BIOMEDICAL SCIENCE STUDENTS

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PROBLEM

Students transitioning from first-year to second-year undergraduate science laboratories often face a steep learning curve, particularly when moving into research-oriented laboratory settings. This shift requires a higher level of technical competence, confidence, and spatial familiarity. Limited class time further constrains the opportunity for hands-on reinforcement of foundational skills.

PLAN

To address this challenge, we developed a 360° virtual laboratory tour as a pre-laboratory resource for students enrolled in the *Advanced Bioscience Lab* subject at Bond University. This subject, offered to a small cohort of Biomedical Science students, marks the transition into a research lab environment. The tour aimed to build familiarity, introduce key laboratory skills and equipment, and reinforce links between practical work and course content. The design leveraged free software (H5P) and 360° imaging to keep costs minimal while ensuring pedagogical value. (Schweiker et al., 2020)

ACTION

The virtual tour, available online prior to the first lab class, included interactive embedded videos covering cell culture, chromatography, TLC, and HPLC—skills taught progressively throughout the course. Voluntary student engagement was encouraged, and the tour was introduced in the initial lecture. All nine students in the cohort engaged with the resource prior to week 3 lab sessions.

REFLECTION

Student feedback was highly positive. The resource was rated 4.78/5 for introducing the lab, 4.44/5 for equipment understanding, and 4.11/5 for skill acquisition. All students found the tour effective as a learning aid. Feedback highlighted strong visual design and ease of use but suggested enhancing navigation and interactivity. Future improvements include gamification, embedded assessments, and additional freedom of movement. The success of this proof-of-concept supported further expansion of virtual tours across other subjects and levels. This has led to the creation of the successful online resource, thevirtsci.com. (Levonis et al. 2020)

REFERENCES

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