

# DEVELOPING A DESIGN FRAMEWORK FOR LABORATORY VIDEOS IN MOLECULAR BIOSCIENCES

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## BACKGROUND

Video-based learning has become increasingly integrated into higher education (Fadde & Vu, 2014). In particular, use of laboratory video expanded for students unable to attend in-person instruction during the pandemic (Delgado, Bhark, & Donahue, 2021; Slade et al., 2021). However, there remains a paucity of standardised guidelines for designing laboratory-training videos.

## AIMS

This project aims to analyse student perceptions and engagement with laboratory video to inform future laboratory video design.

## METHODS

Nine videos were produced to teach core microbiology laboratory skills (e.g. aseptic technique) for a microbiology course (876 students). Video analytics were collected from *YouTube Creator Studio* between 11/08/2020 to 29/11/2021, with student perceptions on helpfulness of various video design features collected through a survey (7% response rate) and follow-up interviews.

## RESULTS

The percentage of students watching (audience retention) declined throughout a video, with sharp declines in initial and final 5% of video. Audience retention was significantly higher in scenes focused on technique demonstration or written explanations versus speaking instructor ("talking-head") ( $p < 0.001$ ), and in presence of supplementary text ( $p < 0.001$ ) or illustrations ( $p < 0.001$ ). Similarly, students rated 'demonstration' and 'writing' as more helpful than 'talking-head' ( $p < 0.001$ ), however a variety of design features were rated as helpful.

## CONCLUSIONS

We find a variety of design features are helpful, with student perceptions of helpfulness agreeing with differences in audience retention throughout laboratory-skill videos.

## REFERENCES

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