Can offering students opportunities for regular PRACTICE and FEEDBACK yield greater knowledge comprehension in Introduction to Plant Pathology? Plant Pathology is the study of plant diseases relative to plant health. In the past, students in the Introduction to Plant Pathology course (PP300) were given post-lab questions to answer, relating the lecture topics with the laboratory components. Challenge: Because answers were only graded for completion (mid-semester), students had less accountability. Strategy: In the Fall of 2017, we aimed to give students more opportunities for regular practice and feedback on post-lab questions by having them PEER-REVIEW each other’s homework. The purpose of this activity was to improve depth of responses and increase knowledge comprehension, while allowing students to take ownership for their own responses.

The Majority of Students Did Participate in Peer Review of Post-Lab Questions

![Figure 1: Coded responses to open-ended survey question, “Did students participate in peer-review of post-lab questions?”](image)

Timeline of Peer Review Relative to Semester Weeks and Quizzes

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Methods:

The Plant Pathology course:
- ~75 undergraduate students + 6 graduate students, attending 3 lectures per week (MWF) + 3-hour lab.
- There were 4 different lab sections, accommodating ~20 students in the lab at a time.
- This experiment was designed as a paired test, comparing quiz grades from weeks with a PEER-REVIEW preceding, against quiz grades from weeks with no peer-review beforehand.
- After 2 paired tests, a SURVEY of peer-review assessment was conducted.

Peer Review Did Not Significantly Affect Quiz Scores

![Figure 2: Box-plots of average quiz grades (across 6 quizzes) with and without peer review session (ANOVA: F(1,15) = 0.02, p-value= 0.88).](image)

Most Students Did Find Post-Lab Review Questions Useful for Lecture Exams and Quizzes

![Figure 3: Coded responses to open-ended survey question, “Did students find post-lab review questions useful?”](image)

Why did students like Peer-Review?

- “[Peer Review] holds me accountable. Good review & good way to start conversation/discussing about review.”
- “I feel as though we should do peer review every week to keep me on track.”
- “I like that it’s ungraded. It takes a lot of pressure and anxiety away.”

Lessons Learned:

Because the majority of students did appreciate the peer-review process, this activity is likely to be repeated in the future. More repetition of the peer-review process could yield greater success.

This research acknowledges the Delta Program, the efforts of Dr. Devin Wixon, and the 2017 cohort of interns.