



## Research Boxes Can Improve Students' Understanding of Primary Literature and the Scientific Process

### What is this Research About?

The ability to analyze and interpret data is a growing focus in the life sciences. A Research Box assignment can be used to engage students with primary literature and facilitate an understanding of the scientific method. In a Research Box assignment, students read an assigned primary source research article, and write a one-page summary of the key findings of the experiment. The Research Box summary includes information about the research question, hypotheses, experimental design, and student results. In this study, researchers tested the effect of Research Boxes on students understanding of research articles and the process of science.

### What did the Researchers Do?

The researchers surveyed 195 undergraduate students in two Biology classes. The students had all written a Research Box summary of a primary journal article as part of their graded course work. Students rated whether the Research Box assignment aided their understanding of primary research, the scientific method, fundamental biological concepts, and experimental results.

### What did the Researchers Find?

The researchers found that most students agreed or strongly agreed that the Research Box assignment helped them understand primary research articles, the process of science, and fundamental concepts in biology.

# SoTL

## Snapshot

A synopsis of a scholarship of teaching and learning journal article

### ➔ How to Implement this Research in Your Classroom

A Research Box is an assignment in which students write a structured summary of a primary research article. This assignment allows students to become familiar with reading and interpreting primary sources. Research shows that the Research Box is an effective method of teaching students how to analyze and interpret research findings while also increasing their understanding of fundamental course concepts. A Research Box assignment can be used in face-to-face or online courses to increase students' understanding of the research method. Instructors can adapt Carmichael and Allison's (2019) Research Box assignment and rubric for their own courses.

### ➔ Citation

Carmichael J, & Allison L. (2019). Using "research boxes" to enhance understanding of primary literature and the process of science. *Journal of Microbiology & Biology Education* 20(2): doi: 10.1128/jmbe.v20i2.1743

### ➔ Keywords

primary literature,  
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writing assignment

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