Write-to-Learn Science

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Background

I conducted my capstone project at Sidney Middle School located in Sidney, Montana. 60 7th grade students were the subjects for this study. I chose this project because students had the notion that writing is mostly done in Language Arts. I also wanted to see if write-to-learn activities would increase conceptual change in students learning science.

Research Questions

Primary Question:

Will writing-to-learn activities in a science notebook enhance conceptual learning in science?

Sub-Question:

Will students be able to connect science inquiry activities more confidently to science content by using writing-to-learn activities?

Literature

Mason and Boscolo (2000) encourage students to view science writing as an important way to reflect, analyze, and compare ideas and also that writing is commonly used in science. Writing-to-learn is more concerned with assisting students in discovering science knowledge (Tucknott and Yore, 1999). Klein (2000) observed how writing contributes to learning and how different writing strategies affect the cognitive process in learning.

Intervention

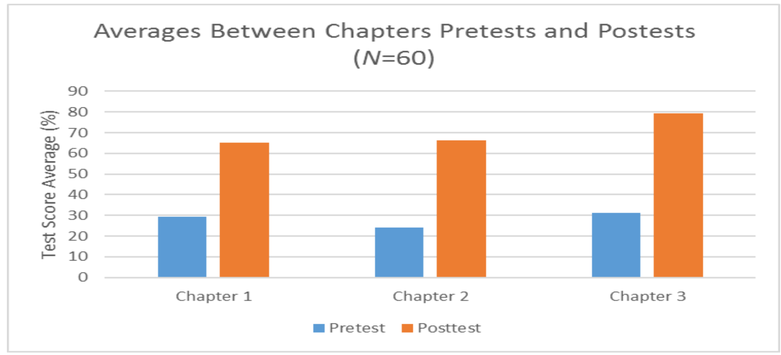
Students were taught science content from three chapters.

- Chapter 1(Introduction to Living Things): students were not given any supplemental write-to-learn activities. The lessons mostly consisted of readings, notes, and quizzes. Students participated in two inquiry activities during this chapter, which also did not include writing.
- Chapters 2 (Viruses, Bacteria, Protists, & Fungi) and 3 (Introduction to Animals): students were active in write-to-learn activities (vocabulary, reflections, opening/closing, etc.) Lessons were closely structured to Chapter 1 but included the writing activities. Inquiry activities were also used during these chapters and included prompt questions, which guided reflection post activity.

Data Collection/ Analysis Methods

Focus Questions	Data Source 1	Data Source 2	Data Source 3	Data Source 4
Primary Question:	Science Writing Survey	Chapters 1,2, and 3 Pretest and Posttest	Posttest Interview Questions	Post-Intervention Interview Questions
Sub-Question:	Science Writing Survey	Post Inquiry Prompt Questions	Post-Inquiry Interview Questions	Post - Intervention Interview Questions

Results



This study shows that write-to-learn activities improved students conceptual learning in 7th grade science. By the end of the intervention students were adding more content to their writing. Students expressed in interviews and survey that they felt like the writing helped them learn and remember science content. Writing after inquiry activities helped students connect the content taught to the inquiry activity they were doing.

Writing activities helped with connections because "they made it even easier to understand and remember."

References

Klein, P. D. (2000). Elementary students' strategies for writing-to-learn in science. *Cognition and Instruction*, *18*(3), 317-348.

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Tucknott, J. M., & Yore, L. D. (1999). The Effects of Writing Activities on Grade 4 Children's Understanding of Simple Machines, Inventions, and Inventors.

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