

## Hands-On Science Labs



**Brief #14**  
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Could it be that by improving the learning environment and providing students and teachers access to appropriately designed and adaptable science labs, improvements would also occur?

I remember high school biology vividly. I remember that it smelled funny and at times I was grossed out by the displays—some in pictures and some in jars. I recall hands-on activities, such as fermenting cabbage to create sauerkraut and then putting it on pizza, and dissecting small animals—thankfully not while eating pizza

Even though there were many benefits in this biology lab, my experiences in the physics lab at that same high school had a more significant impact on my future. I believe the instruction and hands-on experiments in that lab equipped me to become an electro-environmental technician in the Air Force. High school physics helped prepare me with engaging lessons in foundational electrical and mechanical concepts.

Studies have demonstrated that school buildings/classrooms affect teaching and learning (Earthman & Lemasters, 2011). Research also supports the idea that students who engage in active learning, such as hands-on projects and group science projects are prone to score higher on science achievement tests (NCES, 2012), and tend to have an increase in their enjoyment of science (Gilmore, 2013). How many of the students in our nation are in science classrooms that are not optimally constructed for such learning?

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### References

Earthman, G. I., & Lemasters, L. K. (2011). The influence of school building conditions on students and teachers: A theory-based research program (1993-2011). *The ACEF Journal*, 1(1), 15-36.

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