

Researchers recommend features of classroom design to maximize student achievement

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With so much attention to curriculum and teaching skills to improve student achievement, it may come as a surprise that something as simple as how a classroom looks could actually make a difference in how students learn. A new analysis finds that the design and aesthetics of school buildings and classrooms has surprising power to impact student learning and success. The paper is published today in the inaugural issue of *Policy Insights from the Behavioral and Brain Sciences (PIBBS)*.

Surveying the latest scientific research, Sapna Cheryan, Sianna Ziegler, Victoria Plaut, and Andrew Meltzoff outlined the current state of U.S. [classroom](#) design and developed a set of recommendations to facilitate student learning and success. Improvements to the structural environment could be especially beneficial for schools with students from lower income families. For example:

- **Lighting:** Students exposed to more natural light perform better than students who are not; however, according to the National Center for Education Statistics (2014), 16% of schools with permanent buildings and 28% of schools with portable facilities have unsatisfactory natural lighting.
- **Temperature:** The optimal temperature range for learning is between 68 and 74 degrees F. Sixteen percent of schools with permanent buildings and 12% of schools with portable facilities have unsatisfactory heating.

What a classroom looks like, including how it is decorated, can also make a difference in [student achievement](#). Symbols in the classroom can inadvertently signal who is valued. For example:

- Classroom objects that depict achievement of groups traditionally disadvantaged in education (e.g. photographs of women scientists) can improve performance for these groups.
- Classroom objects appealing to only some students (e.g. too many science fiction objects in a computer science classroom) prevent students who do not identify with those objects from enrolling in those courses.
- "Token" symbols that represent a group (e.g. American Indian mascots) can cause students from those groups to express lower self-esteem.

The researchers wrote, "For students to learn to their full potential, the [classroom environment](#) must be of minimum structural quality and contain cues signaling that all students are valued learners."

These findings were adopted by the University of Washington Computer Science & Engineering department to communicate a broadly welcoming environment. They redesigned their building and computer lab by repainting and selecting appealing art pieces. Students and faculty reacted positively to the new environment as a place where a greater diversity of [students](#) feel welcome and can be successful.

The researchers concluded with the implications of this research for policymakers and school administrators:

"This research should be used in developing and implementing education policy for state-level boards, local school boards, school and program administrators, and teachers. Organizations that promote standards for certification and accreditation might encourage training on classroom

environments. School administrators might provide venues for teachers to share information on school environments."

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