Research Summary

How Active Learning Classrooms Are Making A Difference

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Introduction

Interest in Active Learning Classrooms (ALCs) is strong and growing across many educational sectors. With this attention comes a common question: How are ALCs making a positive impact on learners, teachers and educational institutions?

To investigate the effects of ALCs, Steelcase Learning sponsored Grand Valley State University professor Robert Talbert and architect Anat Mor-Avi to conduct a review of published research on ALCs to date. Their findings were published in a paper, *A Space for Learning: A review of research on active learning spaces.*

Research Questions

Talbert and Mor-Avi focused their research on four key questions:

- What effects do ALCs have on measurable metrics of student academic achievement?
- What effects do ALCs have on student engagement?
- What effects do ALCs have on the pedagogical practices and behaviors of instructors?
- What specific design elements of ALCs contribute significantly to the above effects?

The research synthesizes results from 37 studies conducted with students in real-world classrooms.

Education Setting

32

Higher Education

5

Primary and/or Secondary

Location

27

United States

10

Other Countries

Common Themes

In ALCs, students demonstrate increased willingness to participate actively in class, accept new challenges and work beyond their comfort zone.

Talbert and Mor-Avi analyzed and summarized the studies to discern patterns of results, determine best practices and identify opportunities for further research. Four primary themes emerged. The first three themes each describe a single aspect of ALCs, while the fourth theme considers all observed results and their cultural implications.

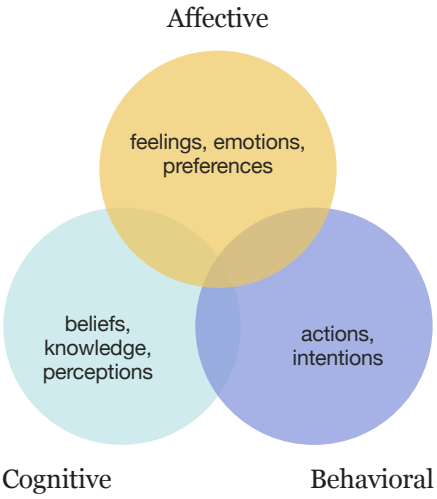
Theme 1: ALCs are connected with improved student learning outcomes.

ALCs are often associated with improved measurable student learning outcomes. These outcomes include traditional quantitative (course grades and exam scores) and the acquisition of 21st century skills (collaboration, creativity, critical thinking and problem solving). Studies report either improved outcomes for students in ALC sections, or no significant difference in outcomes when comparing ALCs to traditional classrooms. None report lower results for students in ALCs, while several show that results on learning outcomes are the most pronounced among low achieving and minority students.

Theme 2: ALCs are connected with improved student engagement, in several forms.

ALCs tend to provoke strong improvements in student engagement. Students typically report a preference for learning in an ALC compared to a traditional space, as well as increased motivation to attend class. In ALCs, students demonstrate increased willingness to participate actively in class, accept new challenges and work beyond their comfort zone. ALCs also lead to increased interaction among students, as well as deepened relationships with their peers and instructors. In this way, ALCs foster a sense of community and belonging.

A framework for understanding student engagement



Common Themes

Connectedness emerges as the common denominator in the larger cultural effects of ALCs and active learning on students and instructors.

Theme 3: ALCs have a positive connection with instructor practices and beliefs.

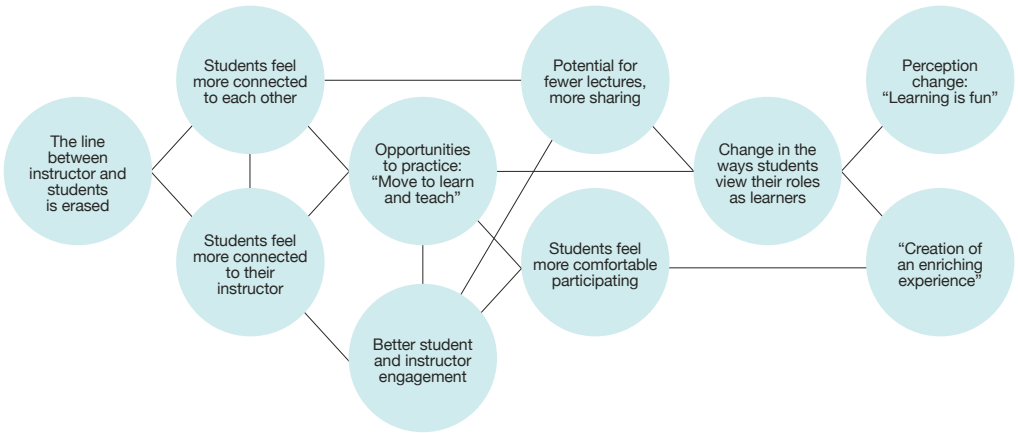
Instructors in ALCs tend to gravitate more towards using active learning techniques (such as classroom discussion and small group consulting) than they do when teaching in traditional classrooms. They integrate the special features of ALCs (reconfigurable tables, vertical writing surfaces, ubiquitous digital technology, etc.) into their teaching more readily and effectively. Several of the studies report that the experience of teaching in an ALC can drive fundamental reconsiderations of instructors' teaching goals and philosophies. However, self-reported data from instructors can be highly influenced by pre-existing beliefs about learning.

Theme 4: ALCs are a potential tool for the evolution of a new culture of learning.

The evidence suggests that the synergy between active learning and ALCs can create significant, system-wide impact on the social and cultural patterns in schools. Studies demonstrate that students find learning in ALCs to be more comfortable, enriching and fun than in traditional spaces. This suggests the early stages of a large-scale culture shift in the way students consider their own roles as learners, and how they think learning should look and feel. Similarly, instructors are beginning to rethink their own roles within the profession.

Connectedness emerges as the common denominator in the larger cultural effects of ALCs and active learning on students and instructors. For example, classroom designs that promote freedom of movement and physical/visual access to content can help students feel more connected to their peers and instructor. Classroom layouts that deemphasize the "front" of the room can erase the line between student and instructor – creating a more cohesive community of learners. Accessible analog and digital tools can enable students to connect class concepts to their own interests and related ideas.

From the Findings:
The Influence of ALCs on the New Culture of Learning



Conclusion

Evolving our understanding of ALCs is essential to help the promise of active learning reach its full potential.

Talbert and Mor-Avi's research reveals a strong connection between the use of ALCs and improved student outcomes and engagement, as well as positive changes in instructor pedagogy motivation and behavior. The authors also note the exciting potential of ALCs to transform the norms, practices and beliefs held by students, instructors and learning institutions.

The findings also highlight an increasing need to understand space as a third component of effective learning experiences, complementing pedgagogy and technology. Evolving our understanding of ALCs is essential to help the promise of active learning reach its full potential.

To explore the research further, read the full paper: https://osf.io/preprints/socarxiv/vg2mx/.

About the Authors

Robert Talbert is a professor and the assistant chair of the Mathematics Department at Grand Valley State University in Allendale, Michigan. He is the author of *Flipped Learning: A Guide for Higher Education Faculty.* During the 2017–2018 academic year, he served as Scholar-in-Residence at Steelcase Learning.

Anat Mor-Avi is an architect, artist and a Ph.D. candidate at the Illinois Institute of Technology, the College of Architecture in Chicago. Over the past 20 years, she has designed learning environment facilities in the US and Israel. She is a consultant to governmental organizations and the owner of WE LEARN, an organization working to bridge the gap between learning and space.

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