



FLEXIBLE LEARNING ENVIRONMENTS

School and classroom designs should facilitate modern learning methods that prepare students for college, careers, and citizenship in the twenty-first century. Students are expected to show what they know through problem solving and in-depth demonstration of subject matter. As districts move forward in building and modernizing California's school facilities, it is essential to provide flexible learning environments that support diverse teaching and learning needs.

To optimize twenty-first-century teaching methods such as project-based learning and personalized instruction, space should be adaptable to allow multiple learning activities to occur simultaneously. A flexible classroom is fundamental to an instructor's ability to adapt to various needs. The design must allow for a variety of learning environments and grouping formats that consider all learning-style profiles.¹

Learner-centered classrooms should be designed to accommodate different teaching and learning formats, including:

- Individual study and reflection
- One-on-one instruction
- Peer-to-peer discussion
- Small-group work
- Teacher-directed instruction
- Student presentation²

Students will often construct their own learning, and one way to understand flexibility is through five properties that support constructivist teaching pedagogy:

Fluidity represents the design of space for flows of individuals, sight, sound, and air.

Versatility indicates the property of space that allows for multiple uses.

Convertibility designates the ease of adapting educational space for new uses.

Scalability describes a property of space for expansion or contraction.

Modifiability is the spatial property that invites active manipulation and appropriation.³



Technology should be seamlessly integrated into the learning space with campus-wide Wi-Fi to allow students access to technology in spaces inside and outside the classroom.

Flexible schools also provide space outside the classroom for collaborative learning, such as:

- Learning studios with abundant daylight, flexible furniture, and space for group projects;
- Open areas, such as atriums and learning "streets"—instead of corridors—to encourage social interaction;
- Project rooms with high ceilings, work tables, and specialized equipment for inventing, creating, and building;
- Multiage rooms where students can mix and match according to interests and aptitudes;
- Outside learning where students work on community service projects and use community sites, such as museums and libraries as classrooms.⁴

Outdoor learning is integrated with standards-based academic subjects and should be utilized as more than a stand-alone learning option. Outdoor learning increases academic learning, and exposure to nature has social, emotional, and physical benefits for students.

In one study conducted for the California Department of Education, elementary students who participated in outdoor science school significantly raised their science scores by 27 percent. The increase in science knowledge was maintained for six to 10 weeks after program participation, with no significant loss in science scores.⁵

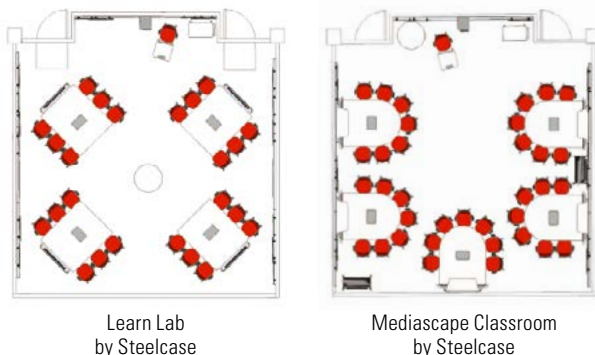
Flexible Furniture

Collaborative learning spaces call for flexible furniture to allow versatility and modifiability. Classrooms designed to support active learning increase student engagement on multiple measures, as compared to traditional row-by-column classroom seating.⁶



Mobile and flexible seating allow for cooperative learning and easy classroom transitions.

Implementing flexibility in smaller spaces may seem challenging, but with the right furniture configurations, a smaller classroom has room for flexibility when row-by-column classroom seating is modified.



Children have a developmental need for movement, and flexible school furniture allows students to shift position, rock, rotate, and roll. Chairs and tables with wheels and adjustable standing desks offer students the choice of sitting or standing during the school day and provide alternatives for various activities, learning styles, and special needs.

Easy access to materials and wireless technology are integral to creative, inquiry-based learning. Movable storage cabinets and mobile carts allow versatility and convertibility in science labs, shared commons, and other learning areas.

Flexible Design

In learning environments that are designed for flexibility, students may be observed learning while lying down on the carpet or sitting at low tables, on soft seating, or in beanbag chairs. Students may work alone or with a group. Areas with screens or glass partitions allow the instructor to have proximity to the various activities occurring simultaneously.

Innovative school designs may incorporate rolling or sliding doors and movable interior walls that allow linked classrooms to work in common areas or on outdoor learning projects. Shared learning spaces foster a sense of community as students work in teams for STEM (science, technology, engineering, and mathematics), career technical education, and other subjects.

Flexible learning spaces are attainable for existing school facilities as well as modernization and new construction projects. Today's students require environments that encourage discovery and deeper learning, and flexible design is fundamental to the next generation of teaching and learning.



A learner-centered environment with flexible furniture.
Randall Elementary School, Milpitas Unified School District

1. James Seaman, "Agile and Information-Rich Learning Environments" (*Michigan Association of School Administrators [MASA] Leader*, September 2010), 18–19; and Hanover Research, *School Structures That Support 21st Century Learning* (Washington, DC, 2011), 6.
2. Ibid.
3. Lawson Reed Wulsin Jr, "Classroom Design – Literature Review" (Princeton University, 2013), 15; and Torin Monahan, "Built Pedagogies & Technology Practices: Designing for Participatory Learning" (Rensselaer Polytechnic Institute, Proceedings of the Participatory Design Conference, 2000).

4. Hanover Research, *School Structures That Support 21st Century Learning* (Washington, DC, 2011), 6; and Susan Black, "Achievement by Design" (*American School Board Journal*, October 2007), 39–41.
5. American Institutes for Research, "Effects of Outdoor Education Programs for Children in California" (submitted to California Department of Education, January 2005).
6. Lennie Scott-Webber, Aileen Strickland, and Laura Ring Kapitula, "How Classroom Design Affects Student Engagement" (Steelcase Education, 2014).

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