Design Features that Support Next Generation Learning

Unleashing Student and Teacher Agency In the 21st Century

Next generation learning strategies offer an enhanced educational experience for K-12 students through a more student-centered and teacher-supportive approach to the time, pace, place, and pathways for learning. Twenty-first century learning and teaching require a variety of physical spaces to support these future-focused goals wherein students gain capacity for critical thinking and problem solving, creativity and innovation, cultural competence, and global awareness. Four design features support an optimum fit between pedagogy and space, maximizing district's dollars and teachers' daily efforts within new school buildings and/or redesigned next generation learning spaces.

Features that attend to flexibility, collaboration, transparency and connectedness, promote agency within the space – the ability to make choices and take actions needed to attain goals. Student-centered and student accessible spaces facilitate independent navigation within the building, fostering feelings of safety and confidence. Students desire a sense of control within their learning environment. When students can "read" a school building, they feel self-regulated and self-assured and can learn to make successful choices. A sense of place improves a sense of self and learning. Moreover, teachers value their influence and control over the physical setting, and teacher-supportive spaces allow for the adjustments necessary to accommodate next generation learning strategies.

The Research and the Partnership

San Diego State University's National Center for the 21st Century Schoolhouse and the University of San Diego's Center for Education Policy and Law (CEPAL) collaborated on a research study of pedagogy-environment fit at an urban high school. The purpose was to explore the experience of a technology-rich, "blended" environment designed to support project-based and personalized learning.

Grounded in the findings from this initial research, four case studies undertaken by CEPAL's Learning Space Design Project, and extensive school-site study tours, with LPA Research + Education Design further informed the understanding of design features that support next generation learning.

National Center For the 21st Century Schoolhouse At San Diego State University

LPA red research + educational design

University of San Diego

LSDP LEARNING SPACE DESIGN PROJECT

FLEXIBLE

Flexible and adaptable spaces keep up with changing technology and support the wide variety of learning activities needed to foster future ready learners. Moveable furniture allows for ease of reconfiguration. This flexibility of design, and ongoing management of space, generates a sense of ownership and pride of place.

- Tables with flip tops and stackable chairs can be moved aside to accommodate the need for projects that require more open space.
- Fewer built-ins provide more space for collective activities.
- Presentation carts (mobile lecterns) and adjustable height chairs on casters allow for presentation to occur in different locations with the space.
- Furniture and features are designed for multiple uses.
    - Tabletops and windows serve as writing surfaces.
    - Moveable storage cubbies serve as activity zone boundaries.
    - Whiteboards serve as projection surfaces.
    - Presentation carts and adjustable height chairs on casters provide a presentation stage for both students and teachers.
    - Horizontal surfaces and tables are used by teachers, in lieu of teachers' desks that are infrequently utilized throughout the day. Removal of the teacher desk provides more space for room configuration.
    - Classrooms can be more easily reconfigured to accommodate lab-type environments tied to specific industry partnerships.
- Some level of classroom control over lighting, temperature, and acoustics manages the basic environmental needs of occupants; aids in the improvement of students' concentration, mood, and behavior; and better meets the diverse needs of all students.
- Window treatments allow for a variety of lighting levels.
- A variety of activity zones within the learning space provides choice for students and attends to the needs of a diverse set of learners.
- A variety in the size and enclosure of gathering spaces accommodate a spectrum of activities that range from quiet/contained/focused to loud/communal/collaborative.
- Mobile furniture allows for student-led reconfiguration of the space.
- Student chairs accommodate the need for productive movement that improves concentration.
- Flooring surfaces and zones allow for student activities that are both clean

"The area that presents the greatest challenge — and has arguably lagged behind in institutional planning across the world, is to consider how to create or transform the physical spaces so that they better support learning in a twenty first century environment of constant change." ~ Stephen Harris, 2010

COLLABORATIVE

Communally-oriented spaces help to cultivate a shared norm of student and teacher collaboration and team building. Collaborative spaces, arrangements, and comfortable furnishings provide opportunities for exploration, experimentation, demonstration, and peer review.

- Large writeable wall spaces encourage brainstorming, storyboarding, and student display of work in progress.
- Tables with writeable tops promote peer-to-peer learning.
- Different activity zones are created within a given space to provide a variety of grouping choices for student-led and teacher-led groups.
- Adjacent small "think tank" spaces allow small groups of students to engage in project work.
- Teacher collaboration or team areas provide opportunities for interdisciplinary planning.
- Teacher collaboration or team areas are accessible to students.
- Minimized "teacher-owned" areas and wall space emphasize a culture of

TRANSPARENT

Physical transparency in the space makes learning visible. Spaces that are visually connected to one another foster a collective spirit of learning and sharing among teachers and students. Student display areas highlight the process, progress, and evidence of learning.

- Interior windows and glass walls open learning spaces to one another for sharing practices among colleagues and for welcoming community visitors.
- Visual transparency allows students to develop as keen observers.
- Visual transparency into teacher collaboration areas provides student with ongoing role modeling of collaborative practice.
- Teachers can readily supervise student interactions and activities, affording the students access and freedom to move about and take full advantage of individual and group academic and social spaces.
- Glazing, different window sizes, and blinds allow for a spectrum of transparency to attend to specific learning activities within the space.
- Student display areas provide opportunities for showcasing both work-in-progress and completed projects to the peers and the community.
- Exterior windows and views open up the learning space to the outside and also provide visual rest and relief.
- The use of color, signage, furniture placement, and floor surfaces cue students to the choices available to them.
- Signage provides a direct and ubiquitous connection to the organization's vision and mission, emphasizing positive messages about learning.
- Walls and classroom spaces are uncluttered, providing opportunities for visual restoration.

CONNECTED

Spaces that are physically adjacent to one another foster interdisciplinary learning and teaching. Digital technologies provide virtual adjacencies to connect with other communities of learning, teaching, and industry. Resources are readily available for student access.

- Moveable partitions and adjacent spaces foster opportunities for interdisciplinary thinking and professional learning and the development of learning neighborhoods.
- Hallways are designed for circulation as well as for informal learning spaces with gathering nooks.
- Views to the outdoors nurture a sense of connectedness to the larger community.
- Adjacent outdoor learning spaces provide a connection to nature and an opportunity for informal learning during out-of-class time.
- Specialized labs provided "next step" environments connected to regionally -based industry.
- Display and mobile device technologies provide an interconnection to digital resources and the virtual community establishing a mindset that learning can take place both inside and outside the school.
- Presentation technology and furniture is accessible to the students.
- Resources and tools are visible and readily accessible to the student.
- Electrical outlets are plentiful—on walls, floors, and through ceiling drops—and charging carts provide power for mobile devices and allow students to take their learning anywhere within the school facility.
- Wi-Fi access inside and outside the building allows students to learn in multiple locations.
- Basic environmental needs are attended to including sound, light, air quality, temperature, and security and support a wide range of neurodiversity.
- The building is designed as a teaching tool with exposed architectural, engineering and sustainable energy features.
- Informative signage regarding the building design features connects the physical facility to the learning.

SDSU National Center for the 21st Century Schoolhouse:
http://go.sdsu.edu/education/schoolhouse/

USD Center for Education Policy and Law Learning Space Design Project:
www.sandiego.edu/lsdp

LPA Research + Education Design:
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