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Design Pattern 1.11: Foster Interdisciplinary Blurred Boundaries in Specialty Classrooms

Problem:
In many schools, curriculum classes such as band, choir, science, art, and shop are often separated into individual spaces. These separated and often disconnected programmatic spaces such as band room, choir room, science laboratories, art rooms, or workshops not only increase the building footprint and the cost of the facility, but do not allow students to experience the connections that may exist between these areas of study (cross-disciplinary thinking and learning).

This trend not only creates wasteful space and unnecessary expenses but can also limit a school in selecting a site when considering building footprint/open space versus, site dimensions and capabilities. In existing schools, where space is currently limited, the sharing of specialty spaces can “free up” classroom space to be used for other needs. Space needs and cost issues along with budget crunches usually lead schools to discontinue or not introduce these special programs. Without these classes, students lose their ability to choose extra classes that give them the opportunity to express themselves or learn in different ways. In addition to space and expense, the blurring of specialty classrooms often helps students as they identify connections between classes or the melting of ideas/concepts while thinking and learning in this way.

Solution:
Integrate specialty classroom areas of science, art, music, and shop by allowing disciplinary boundaries to blur and come closer together. Construct or modify schools in order for programmatic spaces to hold several specialty classes. Storage spaces along with room dividers to separate spaces that might be needed for different classes at the same time will be cost effective. A divider wall can give classes their own privacy and aids as a sound barrier but can foster a very flexible and fluid space. Allow blurred boundaries to foster new ways of teaching and learning by thinking outside the “classroom box” which will encourage students to think outside their “mental box” and encourage cross-disciplinary thinking.

Best Practices

The Da Vinci Studio
- Expresses the enrichment of disciplines through “cross-pollination”.
- Creates a workable space that allows access to the outdoors, relaxation and work stations.
- A place where all ideas can melt into one.
- Blurring of boundaries can melt the left and right brain.
- Traditional hard lines between the arts and the sciences are blurred.
- In Da Vinci's world, the lines between the disciplines were absent. The works he did as a scientist, mathematician, and artist all informed the other efforts.
- A free-flowing interchange takes place and is accomplished in a workplace that is part artist's studio, part science lab, and part model-building shop.
- Encourages cross-disciplinary thinking in a way rarely seen within the four walls of traditional specialty separated schools.
- Provide a place with a lot of daylight and directed artificial light, connection to an outdoor deck through wide or rolling doors (for messy projects), access to water, power supplied from a floor or ceiling grid, a wireless computer network, lots of storage, a floor finish that is hard to damage, high ceilings, places to display finished projects, reasonable acoustic separation, and transparency to the inside and outside with the potential for good views and vistas.

The Jamie Oliver Studio
- A teaching kitchen connected to a cafe, with possible “edible gardens”.
- Fosters the connections between learning and working.
- Student participation as the centerpiece of its operations.
- Contains mirrored cooking station visible to the whole “class” and small, round cafe tables with comfortable chairs.
- Allows areas to spill out into outdoor spaces, especially in “edible schoolyard.”
The Einstein Studio

- A place that encourages creative reflection.
- An inspiring setting not sealed off from the world outside or from real problems and issues that must always have some place in abstract theorizing.
- Nurtures aspiration and inspiration.
- Creates zones of privacy that remain firmly connected to larger spaces.

Design Recommendations

- Strategically place programmatic spaces such as band and choir rooms along with wood shops in areas of the school where they can be less disruptive to other classes.
- Combine specific classrooms with the same specialty type - Band, Choir, General Music Education, and Dance.
- For best acoustics and durability choose floor surfaces that can be easily interchangeable - hard wood floors for dance or covered with a "rollout carpet" for band.
- Integrate walls with dual purpose rotatable mirrors - one side used for reflection, the other covered with a sound absorber material.
- Utilize roll out risers that are carpeted and sturdy for band equipment. When not in use, store them inside the walls.
- Allow classes such as Shop, Art, and Science to be located in one room. Integrate hard floors, hard table tops, plenty of table room for individual students to work, drains and showers in case of chemical spills, ovens for clay sculptures and areas for display.
- Incorporate storage spaces and closets for equipment when not in use. Safely store equipment to protect its value and security from the activity within the specialty classroom.
- Make rooms flexible with dividers. A divider can be opened for a large activity or could remain closed as different classes share the same room.
- Incorporate large viewing windows in rooms for students to observe and learn the possible connections between areas of study.
- Design classrooms to contain a main learning area where ideas can be gathered and melted into one. Adjacent to this area, have different pods for music (keyboard, CD's), shop (power and hand tools, rulers, building blocks), or nature (seeds, soil, planters).
- Consider a modern-day studio as a specialty classroom, a place with lots of daylight and directed artificial light, connection to the outdoors through wide doors, access to water, power supplied from a floor or ceiling grid, a wireless computer network, lots of storage, a floor finish that is hard to damage, high ceilings, places to display finished projects, reasonable acoustic separation, and transparency to the inside and outside. Places need to be provided for teachers and students to collaborate more, to work on real projects, and to encourage cross-disciplinary thinking.