Linking Architecture and Education

Sustainable Design of Learning Environments

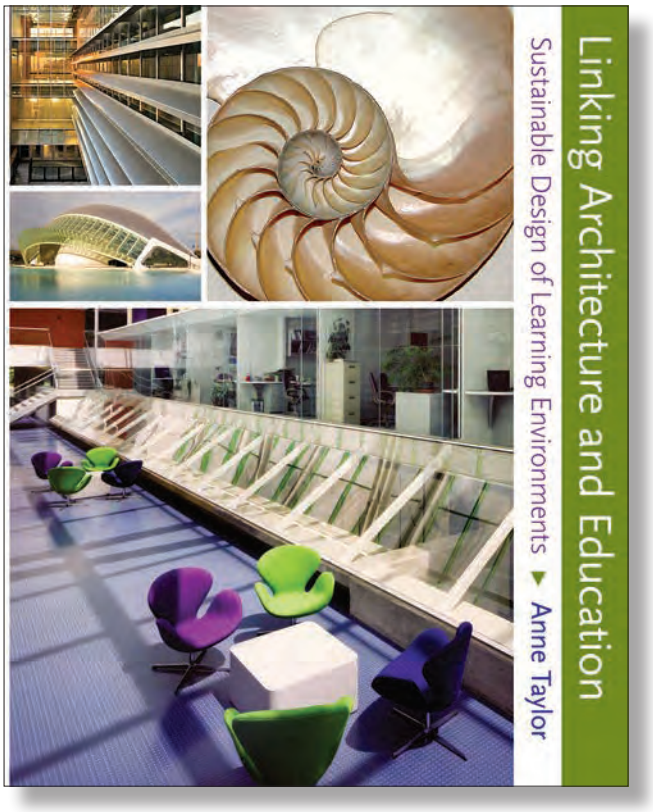
Anne Taylor

For the past forty years Anne Taylor has studied how schools, classrooms, playgrounds, homes, museums, and parks affect children and how they learn. As a result, she has developed a holistic, sustainable philosophy of learning environment design. She argues persuasively that architects must integrate their design knowledge with an understanding of the developmental needs of learners, while at the same time educators, parents, and students must broaden their awareness of the built, natural, and cultural environment to maximize the learning experience. In other words, schools and other environments can themselves become "three-dimensional textbooks." When architects are cognizant of newer models of education and educators view the environment as more than a box in which to teach prescribed lessons, the result is an informed architecture that enables children to discover the power of their own learning.

The book presents numerous examples of dynamic designs that are the result of interdisciplinary understanding of place. There are 35 pages of themed charts for architects to embed manifestations as cues for teachers and students to learn from, i.e. acoustics, plumbing, HVAC and more. Taylor includes designer perspectives, forums derived from com-mentary by outside contributors involved in school planning, and a wealth of photographs of thoughtful and effective solutions to create learning environments from comprehensive design criteria.

Because the concept of "school" is enlarged to a community campus, the book also spawns a new model of teaching and learning. This book is essential reading for educators, architects, and community members who are anxious to transform education in America and elsewhere.

"Anne Taylor is the most outstanding educator, leading proponent, and practitioner in the three-dimensional textbook field. Her work is the finest resource available for connecting students (young and old) to their learning environments, and visa versa." —Edward E. Kirkbride, NCARB, REFP



Anne Taylor, Ph.D., Hon. AIA, ACSA Distinguished Professor, is Regents Professor in the School of Architecture and Planning at UNM, where she was the founder and director, for many years, of the Institute for Environmental Education. She is also president of a non-profit School Zone Institute. She is the author of *Southwestern Ornamentation and Design* and *School Zone: Learning Environments for Children*, as well as several Architecture and Children curriculum documents and teacher guidebooks. www.schoolzoneinstitute.com

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SAMPLE SYLLABUS
Using "Linking Architecture and Education: Sustainable Design of Learning Environments" as the Text for An Integrated Course On Learning Environment Design

By Anne Taylor with Katie Enggass

"Anne Taylor and Katie Enggass have produced the definitive guide to creating magical learning places. This book is the culmination of a lifetime of research, teaching, and design, elegantly packaged to inspire architects, teachers, school administrators, community members, and most importantly students of all ages.

This book is intended to be not only a prescriptive guide for everyone involved - even tangentially - in school facility design but also to cultivate a very special kind of inquiry and discovery. Thinking outside of the box or classroom is what makes this work such a significant contribution to the literature."

Andrew Pressman
Fellow of the American Institute of Architects
Washington DC

"Linking Architecture and Education: Sustainable Design of Learning Environments", by Anne Taylor, PhD. with Katherine Enggass, is a key textbook to be used for an integrated undergraduate and/or graduate course on contemporary school design and learning environments including learning techniques.

Presently, the University of New Mexico is planning such a course between its College of Education and its School of Architecture, however other departments such as Landscape Design, Health Education (playgrounds) could use this as a textbook. The following outline is a sample syllabus for a 10–16-week course, as a seminar or discreet class spread out over a longer period of time. The syllabus can be adapted to individual life zones. The suggested class teaching format for each session is divided into Lecture Readings / Discussion / Studio.

COURSE TITLE:

Contemporary School Facility Planning, Learning Environment Design and Research Topics for the Next Century

PART 1

Topic: The Introduction and The Purpose - A note on the book's structure, the need for new thinking in Education and Architecture and School Design; The Knowing Eye and Visual Perception

Students Will: read Foreword, Introduction and Chapter 1 and discuss next class

Studio Activity: will learn schematic drawing techniques p.250-261

PART 2

Topic: The Informal Learning Environment – the use of the built, natural, and cultural environment (order in the universe) uses integrated science, technology, engineering, art, architecture and math (STEAM) (pg.32).

Students Will: Discuss climate change and how education must be modified for students of the future to understand and be knowledgeable about their environment.

Studio Activity: More Schematic drawing and visualization and visual thinking.

PART 3

Topic: Philosophy for Educators and Architects - This section addresses patterns for operating in the world of education and design, as it pertains to the educator, the architect, the student, curriculum content, the role of society or community, and the physical environment (pg.50-69).

- Ontology (what is real)
- Epistemology (what is true)
- Axiology (what is beautiful and aesthetic)

Students Will: examine and discuss philosophies of Idealism, Realism, Experimentalism, Existentialism and Ecoism with reference to the learner, the teacher, the curriculum, the community, design determinants and stewardship.

Studio Activity: Design a chart of philosophy on which to base school design today and in the future. Make your own charts or graphics for the architect, teacher, learner, community and more.

PART 4

Topic: The Sustainable Learning Environment - Our recommendation for 21st century demands present traditional classrooms to be transformed into student centered **studios** (pg.50-69)**.**

Students Will: present finished philosophy charts and present to class for further discussion and adaptation for their final project.

Studio Activity: Design a project of your choice pertaining to school and write a proposal for its execution. Include the goal, the need, the purpose, the method and the anticipated result.

PART 5

Topic: Taxonomy of Learning - a curricular organizing system for school facility planning (pg.91-113).

Students Will: understand and construct examples of interdisciplinary curriculum and design how concepts of science, technology, engineering, art, architecture, math (STEAM) can be embedded in the physical setting of a school.

Studio Activity: Work in Small groups to begin an interdisciplinary curriculum for a particular grade level taught through design. p.101-115 (See also your national and state standards.)

PART 6

Topic: The Habitability Levels and Programming (Planning) - the Learning Environment to optimally educate the client must have categories that are tangentially related to Maslow's levels of habitability and hierarchy of needs for body, mind and psychological and creative spirit. (pg.115)

- Health and Safety Supporting the Body – what can foster good health?
- Functionality Supporting the Mind – what can foster intelligence?
- Problem Solving and Aesthetics Supporting the Creative Sprit – what fosters creative problem solving?

Students Will: understand all habitability levels and give examples in each category of how an example could be embedded in architecture of the school – example: Post and Beam, Arches.

Studio Activity: create examples of Habitability levels in school settings such as the swing of a door as a fulcrum and geometry (degrees of the swing) that can be used as learning tools in hallways, entryways, doors, windows, walls, landscape, color, lighting and more (p.120-124).

PART 7

Topic: Manifestations for Learning - Translating Architectural Elements into learning Opportunities. How the architecture of a school can embed concepts from all disciplines so that the built and natural architecture becomes a teaching learning tool.

This section includes examples of manifestations for design potential (the architect), educational implications (the educator), and an active list of learning experiences from simple to complex.

For example, these manifestations include acoustics, walls, windows, doors, HVAC (pg. 238), plumbing and more.

See pages 217-219, 233 for examples of visual thinking about manifestations.

For architectural programming as an educational process see steps. (pg.190-215)

Students Will: understand how a manifestation for learning works as an embedded cue in the architecture of the school. (pg. 180-188)

Studio Activity: Students make their own charts with newer ideas for the designer, the teacher and students for ways to use the learning environment as a teaching tool tied to curriculum.

Include the outdoors and nature as a Learning Environment with Design Experiences from design in flowers (geometry, art), to branching of trees (math) etc.

PART 8

Topic: The Process of Designing Learning Environments – Bubble Diagram, Walls/Windows/Doors, Plan View, Elevation and Perspective, a simple method for non-architects to start thinking visually and becoming able to design with simple schematic sketches and thought-provoking programming. (pg. 261)

Students Will: understand how to use an east facing window as a learning tool for watching the sun cross the window seasonally.

Studio Activity: working in teams (an architect + a teacher) begin programming and sketching for a learning environment (classroom as studio) (plan and elevation).

PART 9

Topic: Home Learning Environment (pg. 298) Many homes have places for adults to do their work, every home could have a flexible place for children to do their work and be creative.

Students Will: think about and design a learning environment for children in a family home.

Studio Activity: In-class design session for home learning environments and/or a design center. (pg. 297-298)

PART 10

Topic: Learning Landscapes - Outdoor Learning environments are essential for schools. Students can use a Preference Interview and Frequency Count Assessment Tool to gather data for student preferences for learning landscapes. (pg. 323-372 + 398-399)

Students Will: do a visual analysis of a barren playground or space.

Studio Activity: design a place for gardens, games, nature study, active areas, greenhouse, nature trail and an outdoor studio.

(OPTION) PARTS 11, 12, 13, 14, 15 – Presentation of final projects. Set up an exhibition. Use your own evaluation system and student input as a metric for class success.

AFTERWORD

Along with school design, some of your students might want to create a Design Center as a learning environment for international cooperation and professional development of teachers to help them become design education experts. This could be a final project for some of your class.