EVIDENCE BASED DESIGN FOR ELEMENTARY & SECONDARY SCHOOLS

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Questions related to specific materials, methods, and services will be addressed at the conclusion of each presentation.

LEARNING OBJECTIVES

Evidence Based Design of Elementary & Secondary Schools: A Responsive Approach for Creating Learning Environments

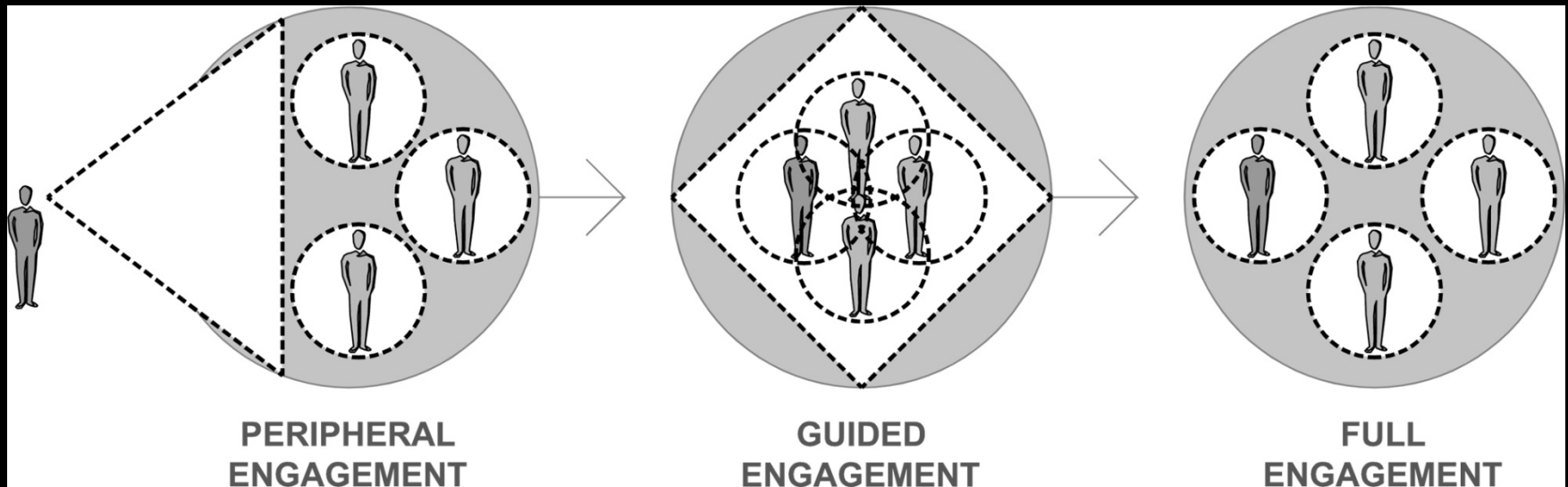At the end of this program, participants will be able to:

1. *Gain an understanding of educational theory and how it can guide design.*

2. *Gain an appropriate framework so that they can offer informed recommendation to their clients.*

3. *Understand how using sustainable elements (day-lighting, dimmers, control of mechanical systems, etc.) can positively influence learning.*

4. *Understand the salient features of the learning environments that support how people acquire knowledge.*
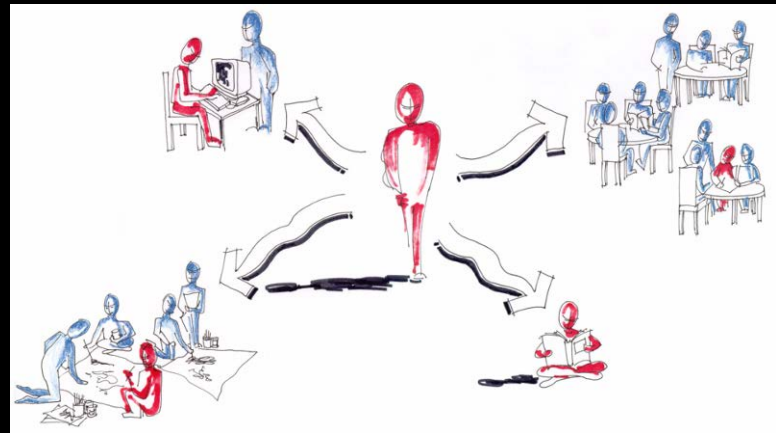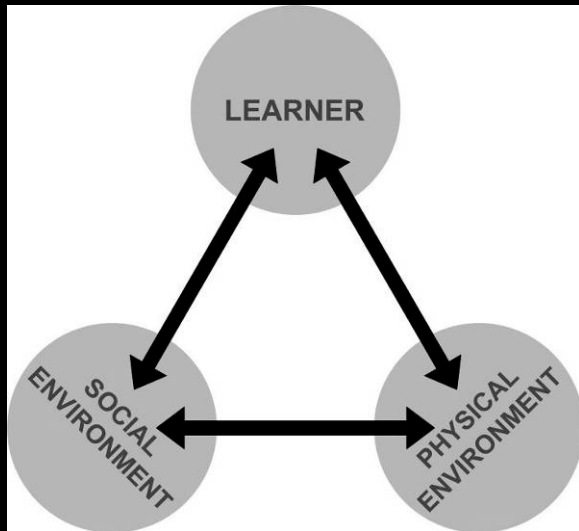
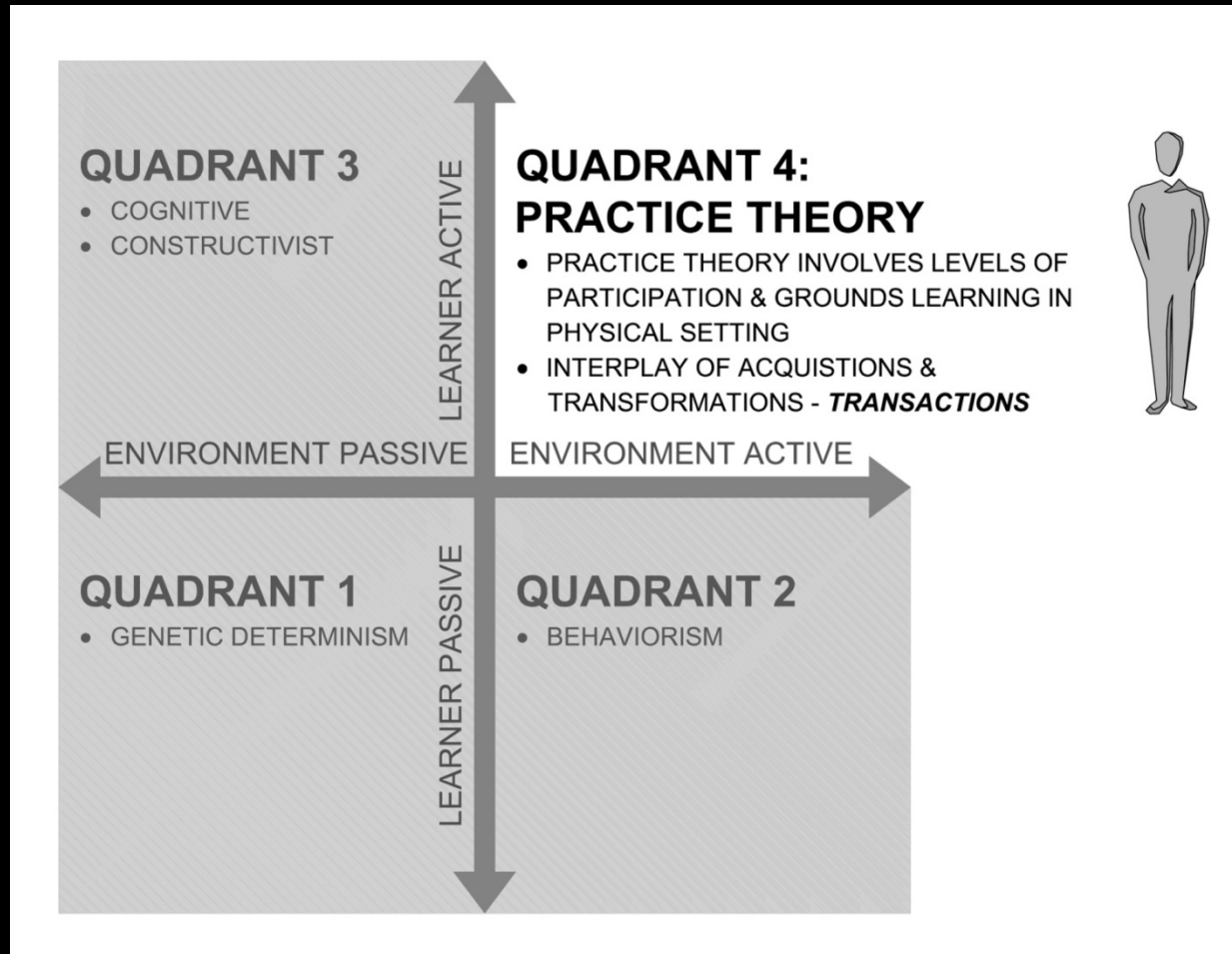# LEARNER-ENVIRONMENT RELATIONSHIP
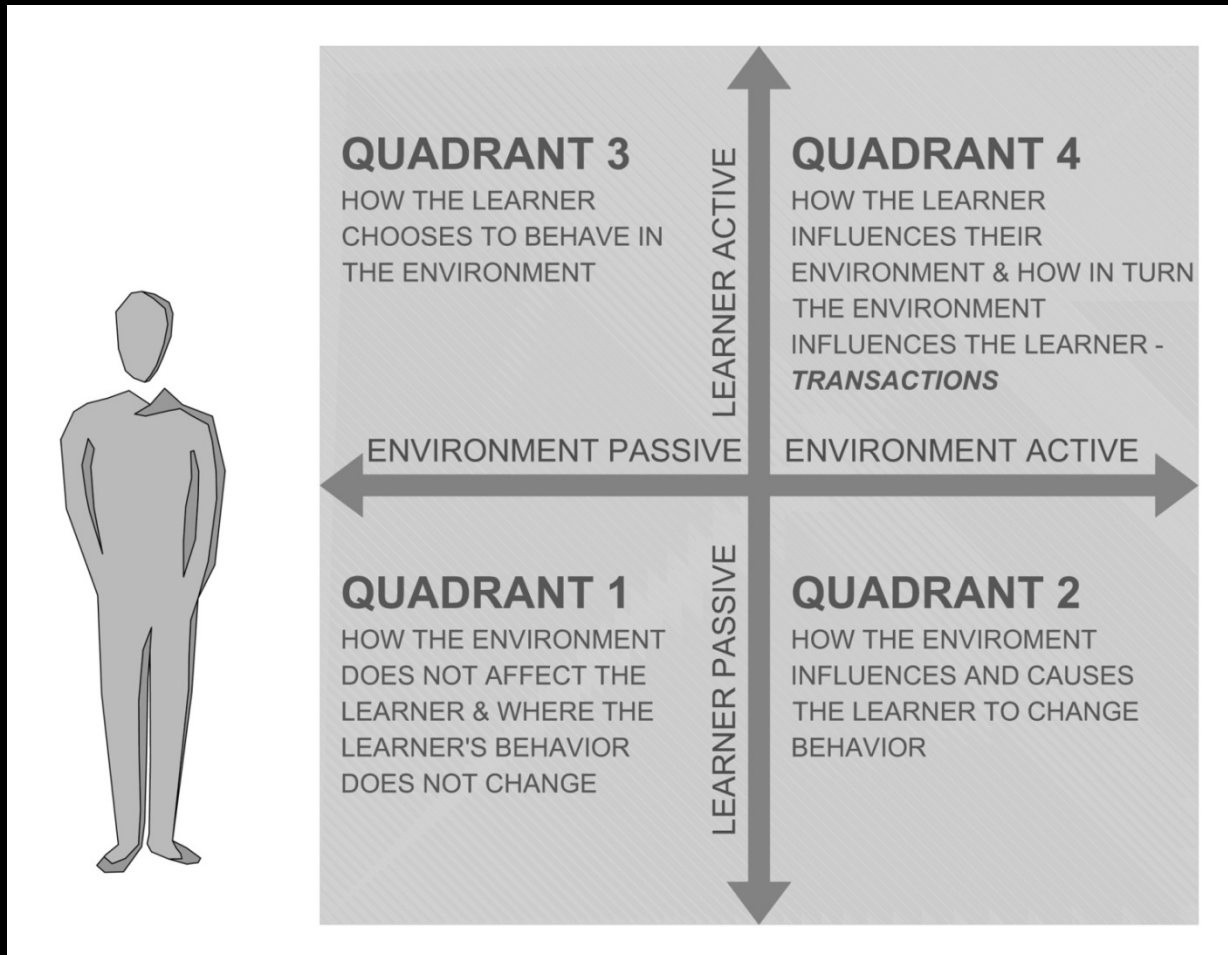
CONSTRUCTIVISM—20th Century
Active Learner – Passive Environment

PERIPHERAL ENGAGEMENT

GUIDED ENGAGEMENT

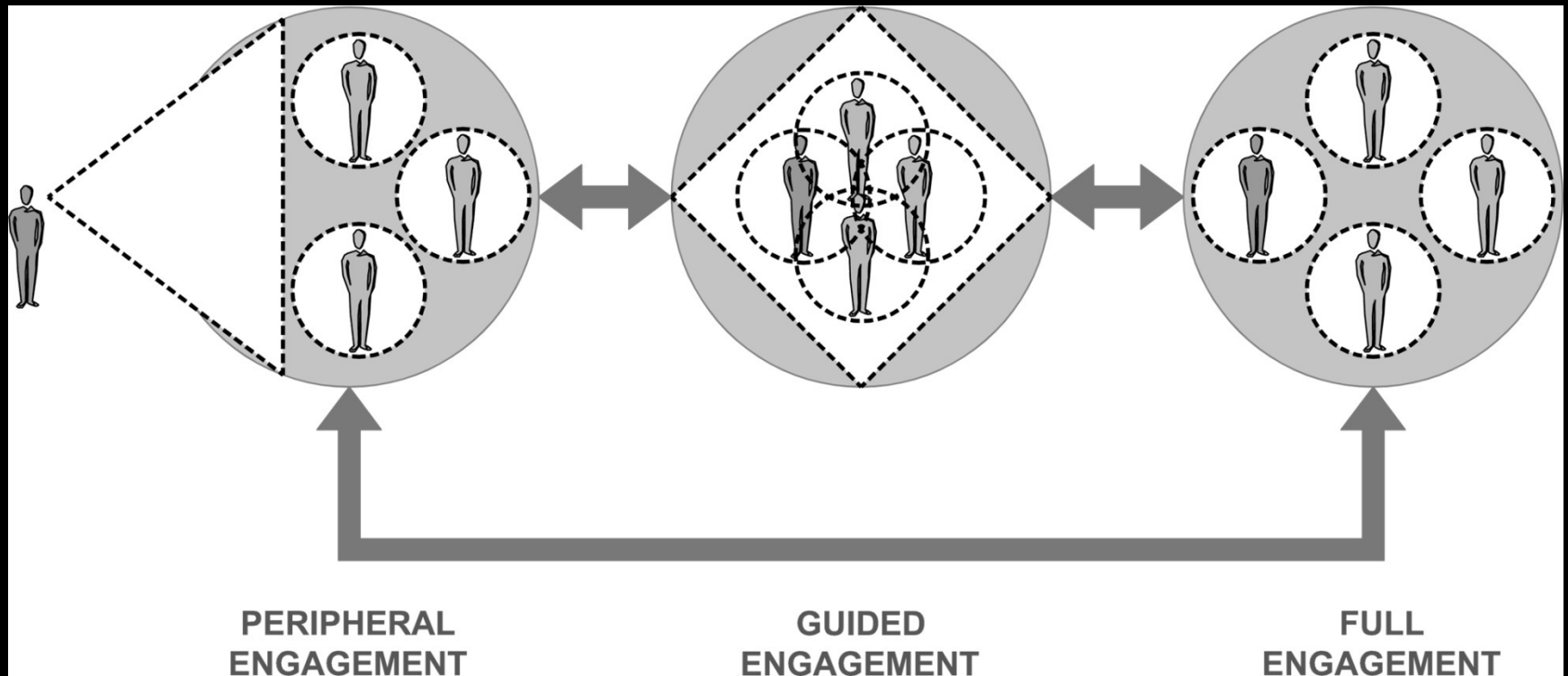FULL ENGAGEMENT

21ˢᵀ Century Learning--Transactionalism

21ˢᵗ Century Learning Environment: Practice Theory

PRACTICE THEORY
Active Learning Environments
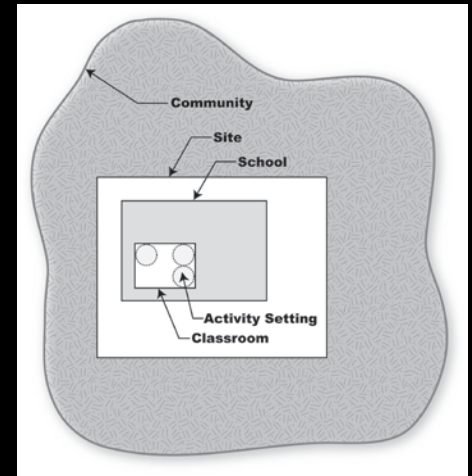

PERIPHERAL ENGAGEMENT

GUIDED ENGAGEMENT

FULL ENGAGEMENT
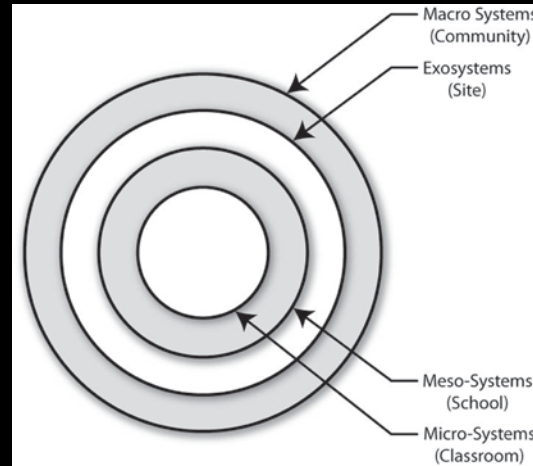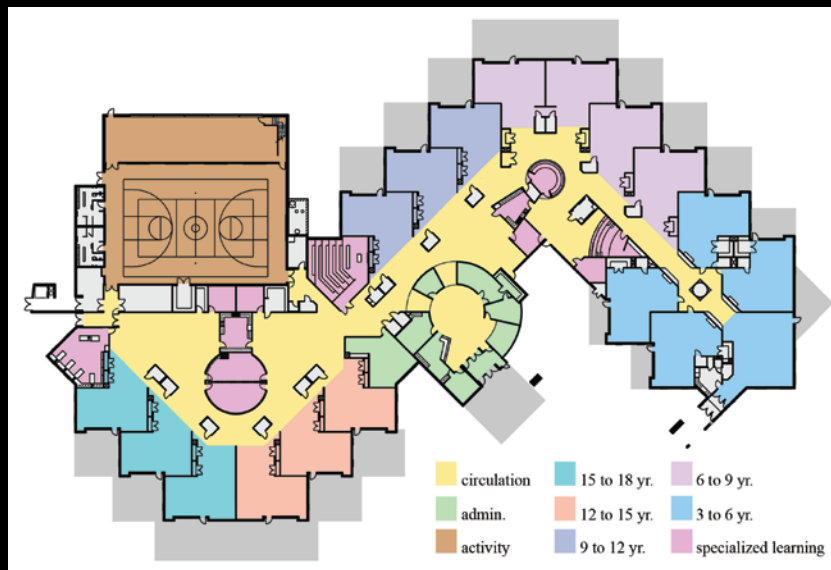
20th Century Pedagogical Models:
Reggio Emilia—The Learning Environment

- Community
- Learners
- The Third Teacher
- Project Based learning

20ᵗʰ Century Pedagogical Models:
Montessori—The Learning Environment

- The school is the community

- Guides

- Prepared Environment

- Project Based Learning

Past Trends in Classroom Design

1920

1960

2000

Current Trends….?

2010

What is EVIDENCE BASED DESIGN?

- Evidence Based design (EBD)
  - Rooted in design of healthcare facilities
  - Framework for programming & planning facilities

- EBD focuses on
  - building technology systems
  - information technology
  - building maintenance programs.

What is RESPONSIVE COMMISSIONING?

- Commissioning

- Educational Commissioning

- Responsive Commissioning
  - Participatory Action Research
 - Methodologies that can guide the programming, planning and design

RESEARCH:
Learning Environments

Barker, R.G. & Gump, P. (1964) Big School Small School.

Weinstein, C. S. (Autumn 1979). The physical environment of school: A review of the research. In, Review of Educational Research, vol. 49, no. 4, pp. 577–610.

Kennedy, D. & Moore, G. T. (1998). Transforming the Egg-Crate School: Remodeling Instructional Settings for Developmentally Appropriate Childcare.
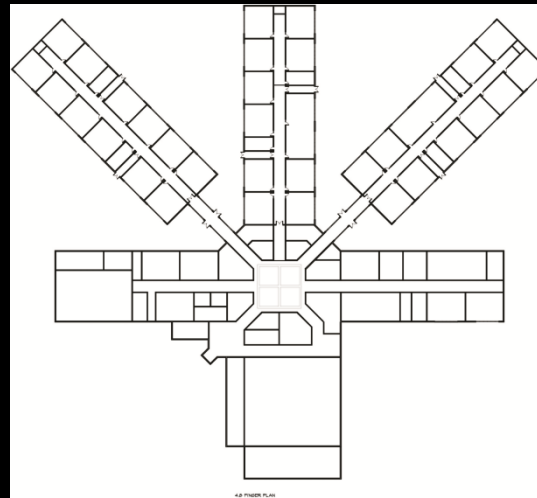
RESEARCH:
Learning Environments

Lippman, P. C. (1997,November/December). "It's a Work in Progress." Connect Magazine, 11 (2), 12 - 14.
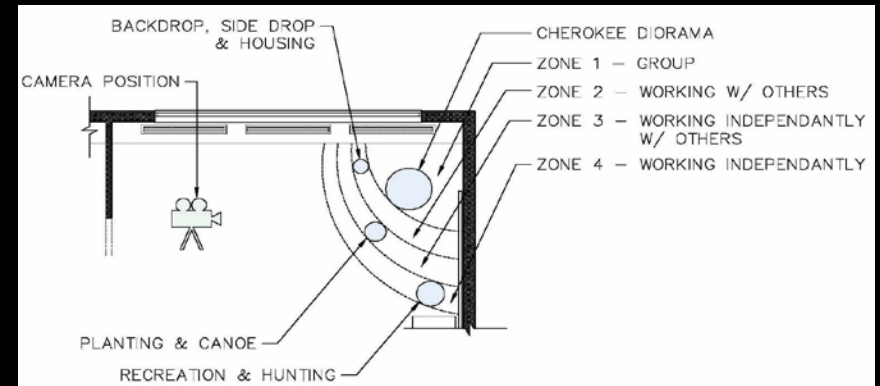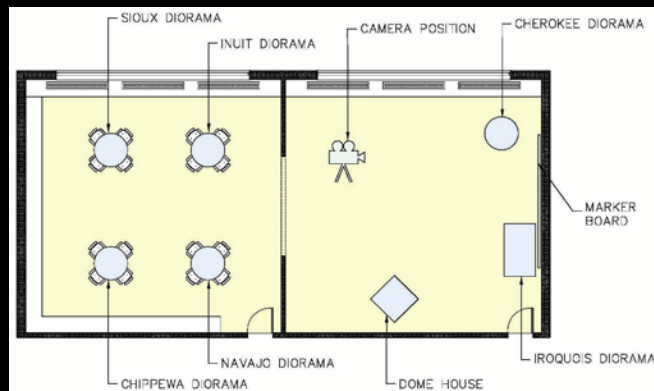
RESEARCH:
Learning Environments

Lippman, P. C. &
Allacci, M. A
(2010,
Research
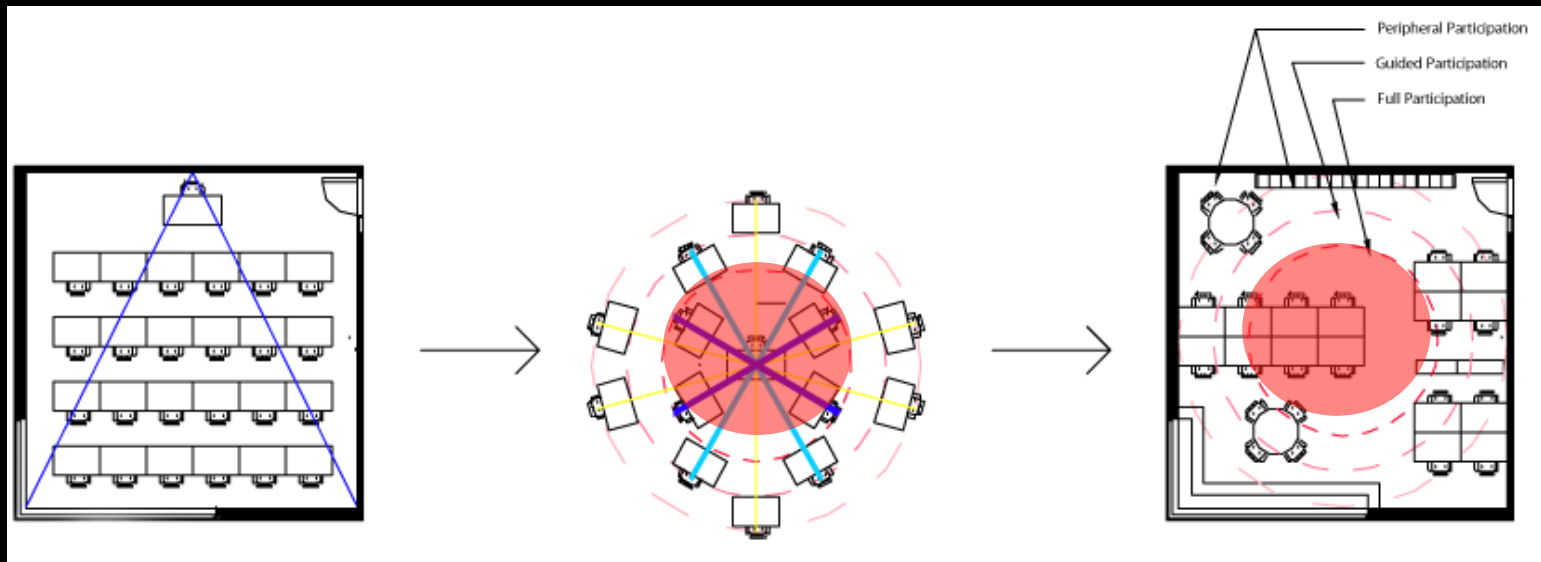Project)
The Gateway
School, New
York, NY

RESEARCH:
Technology & the Learning Environment

Oliver, C. & Lippman, P.C. (2007). Examining Space and Place in Learning Environments.

Lippman, P.C. & Allacci, M.S. (2010, Research Project). Building Community & Culture through the Physical Environment.

RESEARCH ISSUE:
Socio-Physical Structures

Teacher-Centered

Classroom Environment

Learner-Centered

Environment

Learner-Centered

Classroom Environment

ACTIVITY PRECINCT: The Neighborhood

"Contexts in which collaborative interaction, intersubjectivity, and assisted performance occur—in which *teaching* occurs—are referred to as *activity settings*" (Tharp & Gallimore, 1997, p. 72)

North Platte High School
North Platte, Nebraska
Designed by The Architectural **Partnership**

Meadowdale Middle School
Washington
Designed by INTEGRUS Architecture,

ACTIVITY SETTINGS within Activity Precinct

Definition of Activity Settings

access to peers of greater, equal, and lesser ability;

transactions between students and teachers, verbal and otherwise, that occur in the daily routine;

opportunities to investigate an array of activities permitted within the settings;

low levels of adult guidance, supervision, and considerable freedom for what students accomplish and how they accomplish it (Tharp & Gallimore, 1997).

GUIDELINES for Creating an Integrated Learning Environment

- Privacy

- Personal Space

- Access to Resources

- Manage Interactions

- Flexibility

- Prospect & Refuge

- Flow

- Place identity

GUIDELINES for Creating an Integrated Learning Environment

Privacy examines the zone(s) in the physical environment that provide the student(s) the capacity to focus on the project at hand.

Personal Space of work zone(s) affords administration, teachers, and students a space where the identity of the individual may emerge.

Access to Resources involves individuals being able to obtain, retain and use the variety of the tools in the learning environment to solve the problems at hand.

GUIDELINES for Creating an Integrated Learning Environment

Ability to manage interactions of group explores the ease to participate with others in the group

Flexibility is the ability of the learner and the learning environment to meet changing demands of the group process.

Prospect and Refuge:
Prospect are places with unimpeded opportunity to see;

Refuge are places of concealment

GUIDELINES for Creating an Integrated Learning Environment

1	lobby
2	administration
3	student lounge/breakout space
4	main theater
5	studio theater
6	dance studio
7	make-up classroom
8	drama studio
9	musical theatre studio
10	music studio
11	video studio
12	multi-studio

Flow between time and movement, fifth dimension, realm of experiential relationship between spaces, transaction.

Place Identity is a collaborative practice in which the learning environment builds together in the course of social activities. Place identity is the creation and institutionalization of the Community and includes the numerous Communities of Practice inside and outside of the learning environment.

1 lobby
2 administration
3 cafetorium
4 media center
5 gymnasium

100'

- Prospect & Refuge
- Managing Interactions

Catherine Kolnaski Elementary School
Groton, Connecticut
Groton Public Schools, Groton, Connecticut—2008
Designed by JCJ Architecture, Hartford, CT
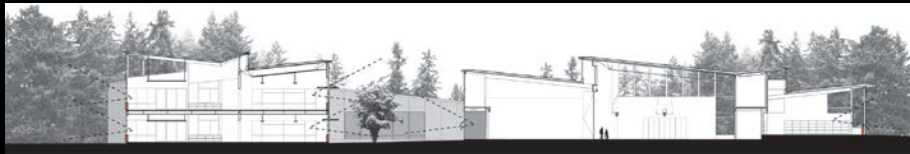Photographer: Robert Benson Photographer

- Prospect & Refuge
- Flow

Rogers Park Montessori School,
Chicago, Illinois – 2005
Designed by: OWP/P | Cannon Design, Chicago, Illinois
Photographer: ©OWP/P | Cannon Design / James Steinkamp
Photographer

Benjamin Franklin Elementary School
Lake Washington School District—2006
Seattle, Washington
Designed by: Mahlum, Seattle, Washington
Photographer: Benjamin Benschneider

LEGEND

1 LIBRARY
2 ADMINISTRATION
3 KINDERGARTEN
4 EARLY CHILD
5 GYMNASIUM
6 COMMONS
7 CLASSROOM
8 ACTIVITY AREA
9 FOOD SERVICE
10 MUSIC
11 RESOURCE
12 TECHNOLOGY
13 SCIENCE / ART

0' 8' 16'   32'

- Flow

- Managing Interactions

Benjamin Franklin Elementary School
Lake Washington School District—2006
Seattle, Washington
Designed by: Mahlum, Seattle, Washington
Photographer: Benjamin Benschneider

Rachel Carson Elementary School
Lake Washington School District—2009
Seattle, Washington
Designed by: INTEGRUS Architecture, P.S., Seattle, Washington
Photographer: Lara Swimmer Photographer

- Managing Interactions
- Place Identity

Rachel Carson Elementary School
Lake Washington School District—2009
Seattle, Washington
Designed by: INTEGRUS Architecture, P.S., Seattle,
Washington
Photographer: Lara Swimmer Photographer

- Place Identity
- Flow

Legacy Junior High School
Davis School District—2004
Salt Lake City, Utah
Designed by: VCBO Architecture
Photographer: Paul Richer

- Flow
- Managing Interactions

Bioscience High School
Phoenix Union High School District –2009
Phoenix, Arizona
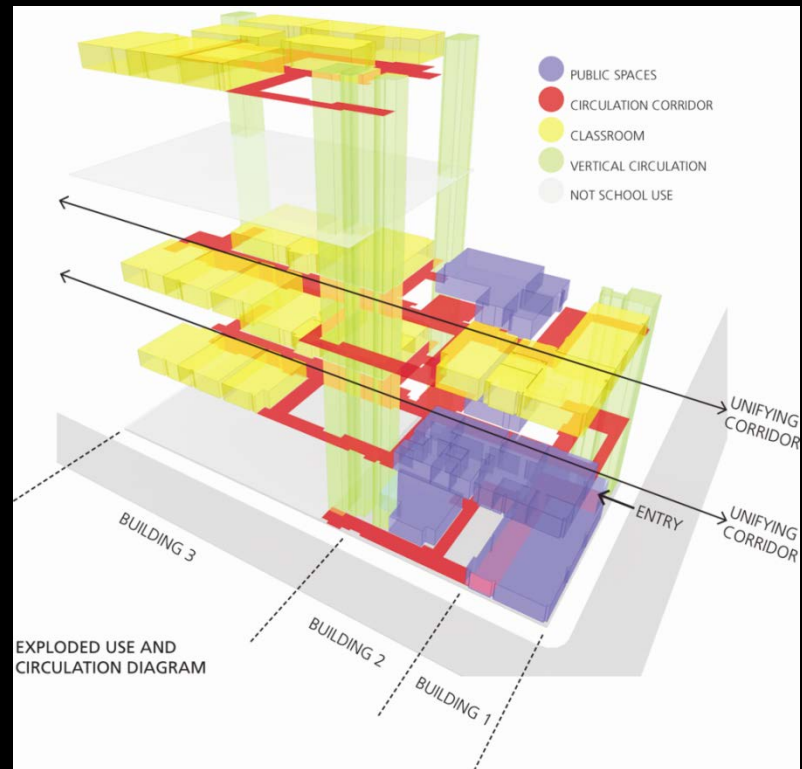Designed by: Orcutt | Winslow, Phoenix, Arizona
Photographer: Al Payne Photographic

- Manage Interactions
- Privacy

The Community Charter School of Paterson
New Jersey Community Development Corporation –2008
Paterson, New Jersey Designed by: Design Ideas Group, New Brunswick, NJ
Photographer: Halkin Photographer and Robert I. Faulkner
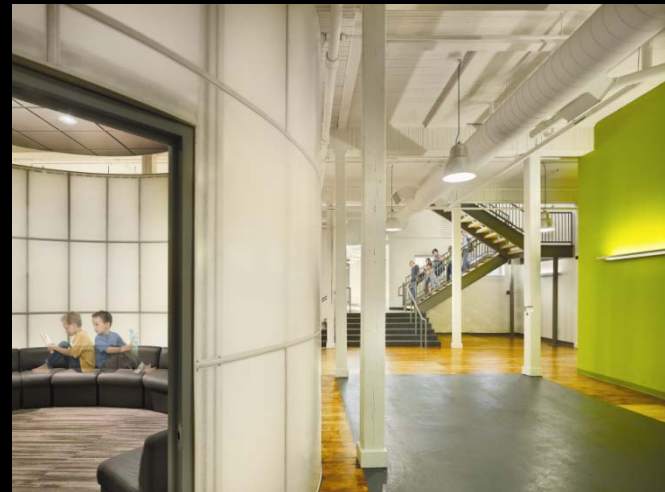
Science Leadership Academy

School District of Philadelphia –2006
Philadelphia, Pennsylvania
Designed by: Stephen Varenhorst Architects, Philadelphia, PA.
Photographer: Stephen Varenhorst Architects, Philadelphia, PA

FIFTH FLOOR

THIRD FLOOR

SECOND FLOOR

1 CAFE/ENTRY
2 FITNESS
3 OFFICE TENANT
4 ADMINISTRATION
5 LIBRARY
6 CIRCULATION CORRIDOR
7 TYPICAL CLASSROOM
8 SCIENCE CLASSROOM
9 ART
10 TECHNOLOGY
11 THEATER
12 OFFICES

FIRST FLOOR

PUBLIC SPACES
CIRCULATION CORRIDOR
CLASSROOM
VERTICAL CIRCULATION
NOT SCHOOL USE

UNIFYING CORRIDOR
ENTRY
UNIFYING CORRIDOR

BUILDING 3
BUILDING 2
BUILDING 1

EXPLODED USE AND CIRCULATION DIAGRAM

- Privacy
- Place Identity

Science Leadership Academy
School District of Philadelphia –2006
Philadelphia, Pennsylvania
Designed by: Stephen Varenhorst Architects, Philadelphia, PA.
Photographer: Stephen Varenhorst Architects, Philadelphia, PA.

The New Settlement Community Campus
Bronx, New York – 2012
Designed by: Dattner Architects - Edelman Sultan
Knox Wood / Architects, Associated Architects, New
York, NY
Images by: 3D-Win, Inc.

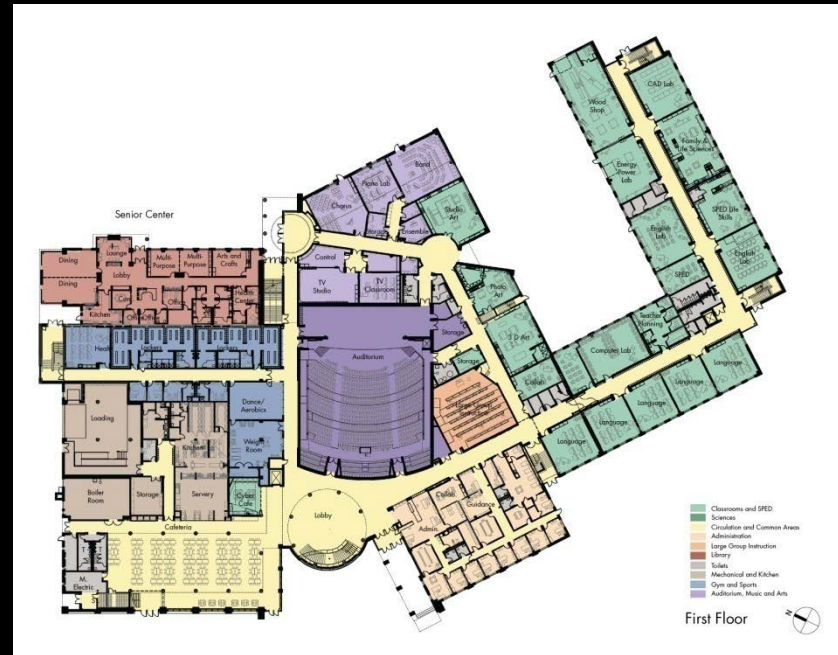- Place Identity
- Flow

Swampscott High School & Senior Community Center
Swampscott, Massachusetts – 2007
Designed by: Symmes Maini & McKee Associates, Cambridge, MA
Photographer: Symmes Maini & McKee Associates

- Personal Identity
- Flexibility

INTEGRATION OF TECHNOLOGY:
Creating Active Learning Environments at the University

School of ONE I: 1.0

INTEGRATION OF TECHNOLOGY:
Creating Active Learning Environments at the University

Chemistry Learning Lab at the University Melbourne

Designed by: Associate Professor Peter Jamieson with Bloomquist & Wark Architects

INTEGRATION OF TECHNOLOGY:
Creating Active Learning Environments at the University

Engineering School Classroom at the University of Melbourne
Designed by: Associate Professor Peter Jamieson with Cox Architects

INTEGRATION OF TECHNOLOGY:
Creating Active Learning Environments at the University

Graduate School of Journalism of the City University of New York
Designed by: Thomson Architects

CONCLUSION

General Electric 1927: Worker Efficiency
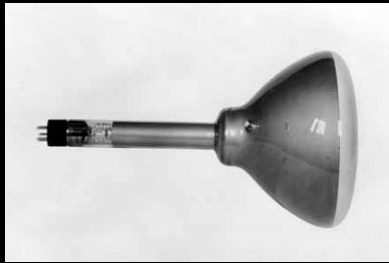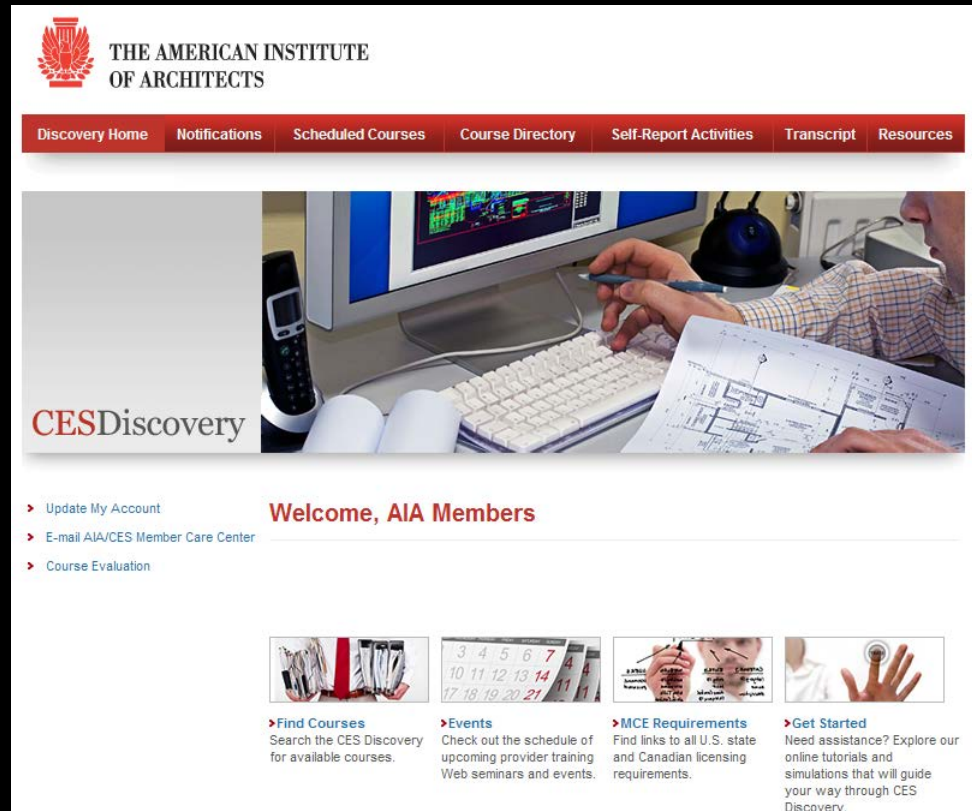
Research Question:
Will higher light levels promote worker productivity?
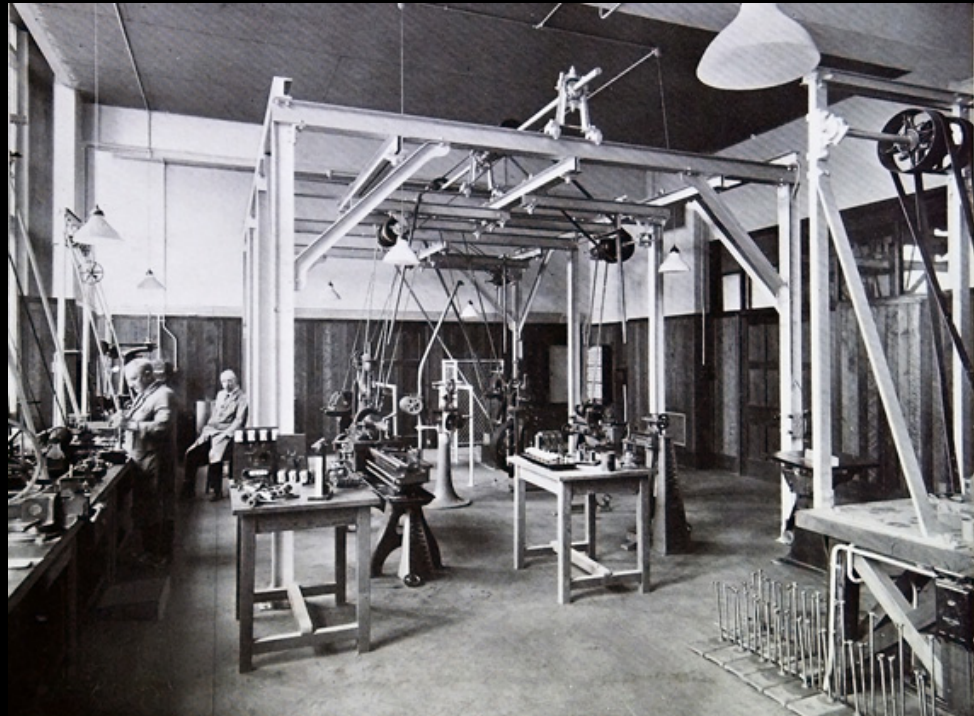
COURSE EVALUATIONS

In order to maintain high-quality learning experiences, please access the evaluation for this course by logging into CES Discovery and clicking on the Course Evaluation link on the left side of the page.

Thank you for your time!

QUESTIONS??

This concludes The American Institute of Architects
Continuing Education Systems Course

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