

Seeking Responsive Forms of Pedagogy in Architectural Education

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Seeking responsive forms of pedagogy in architectural education, this paper responds to some of the negative tendencies that continue to characterize the delivery of knowledge content in lecture-based courses. Such tendencies are identified under the headings of: a) science as a body of knowledge versus science as a method of exploration, and b) learning theories about the phenomena versus getting the feel of the behaviour of the phenomena. The paper underscores the shift from mechanistic pedagogy to systematic pedagogy and the characteristics of each. Building on critical pedagogy and the hidden curriculum concept transformative pedagogy was introduced as a form of pedagogy that can be intertwined into mainstream teaching practices. Translating the premises underlying systemic and transformative pedagogies, inquiry-based, active, and experiential learning were identified as learning mechanisms amenable to work against the two identified negative tendencies. These mechanisms were implemented through a series of exercises in a lecture-based course, I have taught in spring 2010 and 2011: ARCH 313- Community and Neighbourhood Design Workshop, offered as part of the core architecture professional program at Qatar university. The exercises involved a) critical reflection as a form of in-class active learning, b) a walking tour-PLADEW as an experience-based mechanism for learning from the environment, and c) a design game as form of collaborative learning for students' active engagement in a classroom setting. While each exercise has its own contribution, they offer students multiple learning opportunities while fostering their capabilities to shift from passive listeners to active learners, from knowledge consumers to knowledge producers, while engaging in a wide spectrum of mental activities.

Two critical points in architectural education teaching practices

Architecture students are typically encouraged to engage in site visits and walkthroughs in a city spaces in order to observe different phenomena. Unfortunately however, literature indicates that these visits and exercises are not structured in any form of rigorous investigation or critical inquiry.¹ Moreover, in large classes or studios, the proposition of a site visit is often met with logistical difficulties, and with little opportunity for individual student mentoring. Two major critical points can be envisaged in the context of this critical view based on reviewing the literature on architectural education and professional practice.² They continue to characterize teaching practices of lecture based modules in architecture, and can be labelled under the headings of: a) *learning theories about the phenomena versus getting the feel of the behaviour of the phenomena*, and b) *the real versus the hypothetical*.

Learning theories about the phenomena versus getting the feel of the behaviour of the phenomena: When teaching any body of knowledge, there is a tendency to present it as a body of facts and architectural theories and as a process of criticism. The processes that led up to these outcomes are always hidden and internalized. Knowledge is usually presented to students in a retrospective way where abstract and symbolic generalizations used to describe research results do not convey the feel of the behaviour of the phenomena they describe.³ The term retrospective here means extensive exhibition of the performance of the work of an architect over time.

The real versus the hypothetical: Educators tend to offer students hypothetical experiments in the form of hypothetical design projects where many contextual variables are neglected. In this respect, learning from the actual environment should be introduced. Typically, educators focus on offering students ready-made interpretations about the built environment rather than developing their abilities to explore issues that are associated with the relationship between culture and the built environment. If they do, they place emphasis on one single culture, which is their own.

In the context of discussing the preceding points, it should be noted that recent years have witnessed intensive discussions on the value of introducing real life issues in architectural education. This is based on fact that real life experiences can provide students with opportunities to understand the practical realities and different variables that affect real-life situations.⁴ However, while published experiences have debated innovative practices in the studio; little emphasis has been placed upon how structured experiences could be introduced in theory and lecture modules. Seeking new forms of pedagogy in architecture has become a necessity.

¹ Ashraf M. Salama, *New Trends in Architectural Education: Designing the Design Studio* (Raleigh, NC: Tailored Text and Unlimited Potential Publishers, 1995).

² Tom Fisher, *In the Scheme of Things: Alternative Thinking on the Practice of Architecture* (Minneapolis, MN: University of Minnesota Press, 2006); Ashraf M. Salama and Nicholas Wilkinson (eds.) *Design Studio Pedagogy: Horizons for the Future* (Gateshead: Urban International Press, 2007); Martin Symes, J. Eley, and Andrew Seidel, *Architects and Their Practices: A Changing Profession* (Oxford: Butterworth, 1995).

³ Donald A. Schon, 'Toward a Marriage of Artistry and Applied Sciences in the Architectural Design Studio', *Journal of Architectural Education*, 41(4) (1988): 16-24.

⁴ Ruth Morrow, 'Creative Transformations: The Extent and Potential of a Pedagogical Event', in A. M. Salama and W. Wilkinson (eds.), *Design Studio Pedagogy: Horizons for the Future* (Gateshead: Urban International Press, 2007), pp. 269-284; Ombretta Romice and David Uzzell, 'Community Design Studio: A Collaboration of Architects and Psychologists', *CEBE Transactions – Journal of the Centre for Education in the Built Environment*, 2(2) (2005): 73-88; Henry Sanoff, *Democratic Design: Participation Case Studies in Urban and Small Town Environments* (Düsseldorf: VDM Verlag Dr. Müller, 2010).

- ⁵ David Nicol and Simon Pilling (eds.), *Changing Architectural Education: Towards a New Professionalism* (London: Spon Press, 2000); Ernest L. Boyer, Lee D. Mitgang, *Building Community: A New Future for Architectural Education and Practice* (Princeton, NJ: Carnegie Foundation for the Advancement of Teaching, 1996).

Shifting from mechanistic to systemic pedagogies

There is strong evidence that a shift in architectural education does exist.⁵ Such a shift is best expressed from ‘mechanistic’ to ‘systemic’ pedagogy. Following the mechanistic mode, the process of educating future professionals is reduced to a large number of disconnected components. Education in architecture is decomposed into schools, curricula, design studios, grades, subjects, modules, courses, lectures, lessons, and exercises. In this respect, I argue that formal education in architecture has not been treated as a whole, nor has it been appropriately conceptualized as part of a process much of which takes place within society; a characteristic of the systemic pedagogy.

The mechanistic orientation of pedagogy results in the treatment of students as if they were machines with the combined properties and characteristics of recorders, cameras, DVD players, and computers. The student is evaluated with respect to his/ her ability to reproduce what he/ she has been told or shown. In turn, examinations are tests of the ability to reproduce material previously presented to the examined. They are designed to serve the system’s purposes rather than the students’ needs. In the mechanistic mode, educators make little effort to relate the pieces of information they dispense. In most cases, a course or module in one subject does not refer to the content of another. This reinforces the notion that knowledge is made up of many unrelated parts, and thereby emphasis is placed on hypothetical assignments rather than real-life issues. Contrariwise, the systemic mode focuses on grasping the relationships between different parts of bodies of knowledge.

In systemic pedagogy alternative concepts are introduced and can be exemplified as follows:

- some subjects are best learned by teaching them to oneself,
- some subjects are best learned by teaching them to others,
- some skills are best learned through demonstration and instruction, and
- some fundamentals are attained in seminar discussions guided by one specialized in the relevant area.

While mechanistic pedagogy is based for the most part upon showing-telling modes of communication, the systemic pedagogy places emphasis on learning by experience, learning by exploring and doing. I argue that while the mechanistic mode still prevails in most higher education institutions worldwide, current discussions reveal that there are strong moves toward adopting systemic pedagogy.⁶ Yet, the objective here is not to replace the mainstream modes of knowledge transmission and knowledge construction, but complement them in an effective manner.

- ⁶ Ashraf M. Salama, *Transformative Pedagogy in Architecture and Urbanism* (Solingen: Umbau-Verlag, 2009).

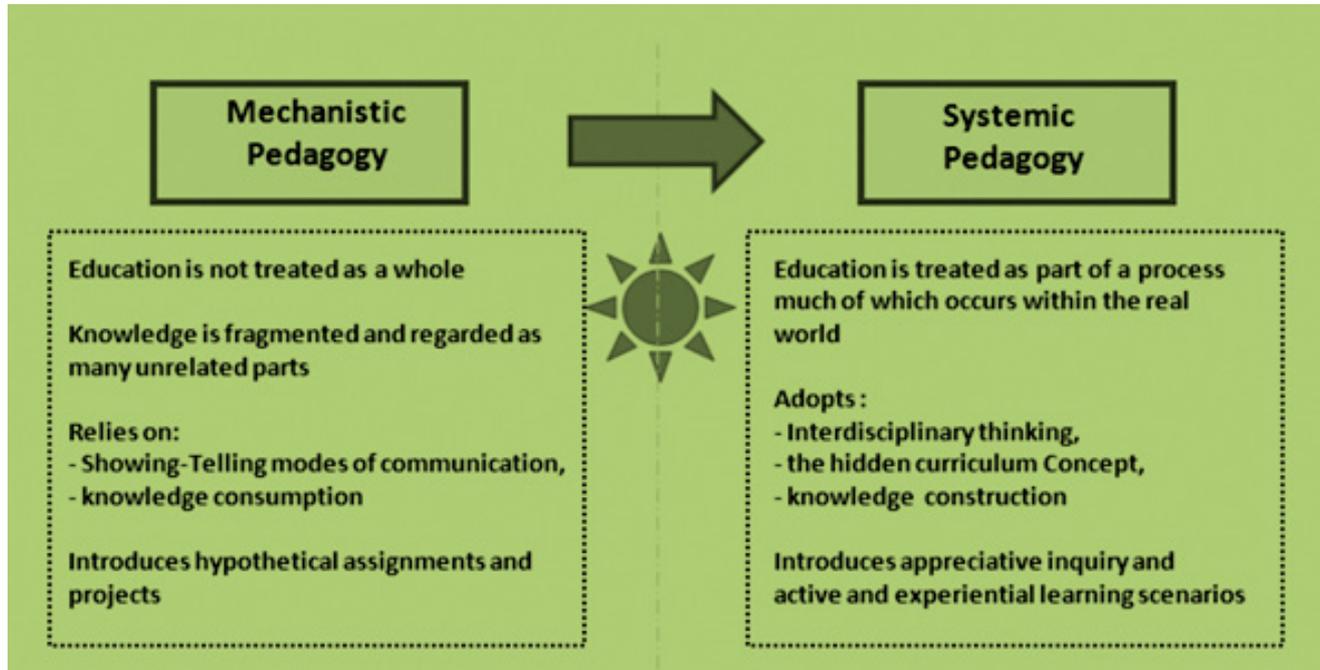


Fig. 1. Characteristics of mechanistic and systemic pedagogies (based on Salama, 2005).

Transformative pedagogy: Building on critical pedagogy and the hidden curriculum concept

While architectural educators strive to impart the requisite knowledge necessary for professional practice, the way knowledge is transmitted has significant professional and social implications. Therefore, there is an urgent need to confront issues that pertain to the nature of reality “what” and the way in which knowledge about that reality is conveyed to future professionals ‘how.’ Transformative pedagogy addresses the potential gaps of ‘what’ and ‘how.’⁷

Transformative pedagogy refers to interactional processes and dialogues between educators and students that invigorate the collaborative creation and distribution of power in the learning setting. As a concept, it is based on the fact that the interaction between educators and students reflects and fosters the broader societal pattern.⁸ Transformative pedagogy in architectural education is about harmonizing the act of creating ideas and solutions with the social and environmental responsibilities that should be embedded in this act. While transformative pedagogy is not confined to a static definition, it builds on the perspectives of critical pedagogy and its underlying hidden curriculum concept.

⁷ Ashraf M. Salama, ‘Incorporating Knowledge about Cultural Diversity into Architectural Pedagogy’, In William O’Reilly (ed.), *Architectural Knowledge and Cultural Diversity*. (Lausanne: Comportements, 1999), pp. 135-144.

⁸ Biren A. Nagda, Patricia Gurin, Gretchen E. Lopez, ‘Transformative Pedagogy for Democracy and Social Justice’, *Race Ethnicity and Education*, 6 (2) (2003): 165-191.

Critical pedagogy aims at reconfiguring the traditional student/ teacher relationship, where the teacher is the active agent—the knowledge provider—and the students are the passive recipients of the teacher's knowledge. Grounded on the experiences of both students and teachers new knowledge is produced through the dialogical process of learning. Paulo Freire, the initiator of the concept, heavily endorses students' ability to think critically about their educational situation; this way of thinking allows them to "*recognize connections between their individual problems and experiences and the social contexts in which they are embedded.*"⁹ In essence, critical pedagogy is viewed as an approach to teaching, which attempts to help students question and challenge domination, and the beliefs and practices that dominate.

⁹ Paulo Freire, *Pedagogy of the Oppressed* (New York, NY: Continuum Publishing Co, 1970).

The hidden curriculum concept is thus concerned with questions that pertain to the ideology of knowledge and the social practices that structure the experiences of educators and students. According to Tomas Dutton, the hidden curriculum places emphasis on those unstated values, norms and attitudes which stem tacitly from the social relations of the learning setting in addition to the content of the course.¹⁰ Based on the writings of theorists of education, one would conceive a number of issues imbedded in the hidden curriculum:

¹⁰ Thomas Dutton (ed.), *Voices in Architectural Education: Cultural Politics and Pedagogy* (New York, NY: Bergin and Harvey, 1991); Henry Giroux, *Pedagogy and the Politics of Hope: Theory, Culture, and Schooling* (New York, NY: Westview/Harper Collins, 1997).

- The everyday experiences of the learning setting (classroom, laboratory, studio).
- The structure of the teaching/learning process.
- The modes of producing and reproducing knowledge.
- The routines of students and educators.
- The rules that govern the relationship between students and teachers.

Pedagogues assert that these practices are equally as influential as any structured curriculum. Therefore, adopting transformative pedagogy can help educators interpret the relationship between knowledge and power, between themselves and their students. The assumption here is that knowledge in any educational setting always reinforces certain ideologies, values, and assumptions about the real world so as to sustain the interests of some groups and their values at the expense of others.¹¹ In this respect one must admit that educational settings—whether studios, laboratories, lecture halls, or classrooms—are not neutral sites; they are integral to social, cultural, and political relations that can be found in real life.

¹¹ Patricia Cranton, *Understanding and Promoting Transformative Learning: A Guide for Educators of Adults* (San Francisco, CA: Jossey-Bass Publishers, 1994).

The preceding discussion suggests that transformative pedagogy is about understanding how knowledge is produced, what the components of such knowledge are, and what are the learning processes and social practices that can be used to transmit it. Transformative pedagogy is centred on critical inquiry and knowledge acquisition, assimilation, and production

in a manner that encourages students and educators to critically examine traditional assumptions and to encounter social and environmental issues.

Responsive learning mechanisms in architecture

The translation of systemic and transformative pedagogies can be witnessed in a number of learning mechanisms that were generated by education psychologists and tested by many pedagogues in various disciplines. Yet, three responsive learning mechanisms can be introduced as part of the learning process in architecture; these are inquiry-based, active, and experiential learning.

It is argued that education begins with the curiosity of the learner. With inquiry-based learning-IBL, students reach an understanding of concepts by themselves and the responsibility for learning rests with them. The famous dictum of Confucius—said to be stated around 450 BC “*Tell me and I will forget. Show me and I may remember. Involve me and I will understand*” clearly reflects the essence of IBL. Inquiry implies involvement that leads to understanding. In turn, involvement in learning implies acquiring skills and attitudes that permit students to seek resolutions to questions and issues while they construct new knowledge. According to CILASS, IBL¹² is a term used to describe approaches to learning that are based on a process of self-directed inquiry or research. Students conduct small or large-scale inquiries that enable them to engage actively and creatively with the questions and problems of their discipline, often in collaboration with others.

Inquiry based learning can be seen as a research-based teaching strategy that actively involves students in the examination of the content, issues, and questions surrounding a concept, or a curricular area relevant to architecture. Here, activities and assignments in a classroom can be designed such that students work individually, in groups of two, or in larger groups to explore issues both in-class work and fieldwork. Instruction in IBL is a student-centred and a teacher-guided approach that engages students in exploring answers to questions selected from a wide spectrum of theme-based issues.

As an instructional method, inquiry based learning was developed in response to a perceived failure of more traditional forms of instruction, where students were required to simply memorize and reproduce instructional materials. Active and experiential learning can be regarded as sub-forms of inquiry-based learning-IBL, where students progress is assessed by how well they develop experiential, critical thinking, and analytical skills rather than how much knowledge they have acquired. The major characteristic of active learning is that students are engaged in individual or group activities during the class session including reading, discussing, commenting, and exploring. In essence, students must

¹² CILASS: Centre for Inquiry-Based Learning in the Arts and Social Sciences <http://www.sheffield.ac.uk/cilass/ibl.html> (accessed 15 March 2010).

talk about what they are learning, write about it, and relate it to past experiences. Experiential learning on the other hand, is contrasted with learning in which the learner only reads about, hears about, talks about, writes about these realities but never comes into contact with as part of the learning process.¹³

Contextualizing the integration of learning mechanisms

While I have been continuously endeavouring to introduce and experiment various techniques that translate new forms of pedagogies into learning experiments amenable to achieve transformative learning objectives,¹⁴ the context described here is limited only to my recent teaching at Qatar University. Putting inquiry based, active, and experiential learning into a teaching practice, the course ARCH 313- Community and Neighbourhood Design Workshop offered as part of the core architecture professional program was selected as a context for integration. Learning mechanisms were integrated into the delivery of the course in the spring semesters of 2010 and 2011. The course includes introduction to community design theories and techniques, participatory design; collaborative design processes; community involvement in decision making; understanding community needs and resources; housing types; new understandings on neighbourhood planning and design theories; gated communities; housing design; housing types; community support. This is coupled with a series of exercises that support the delivery of these topics.

In Community and Neighbourhood Design Workshop course, students are introduced to community design as a movement, a discipline, and a design paradigm. As a movement, it has emerged from a growing realization that the mismanagement of the physical environment is a major factor that contributes to the social and economic ills of the world. According to Sanoff (2010), advocates for this movement come from the professions of architecture, landscape architecture, planning, and facility management. As a discipline, it acknowledges the importance of user needs, preferences, cultural behaviours and attitudes.¹⁵ However, it should be noted that community or participatory design does not assume the community ability to design a physical environment or to replace what an architect or a planner does, but the direct input of the participants can simply inform the process. In essence, the designer evaluates the input of those for whom he/she is designing and therefore seeks out appropriate tools to elicit the information required.

The broad objective of this course is to provide a comprehensive understanding of the role of community design/community participation in shaping responsive environments. The underlying objectives of the course include:¹⁶

¹³ Ashraf M.Salama, 'Delivering Theory Courses in Architecture: Inquiry Based, Active, and Experiential Learning Integrated', *Archnet-IJAR – International Journal of Architectural Research*, 4, (2-3) (2010): 278-295.

¹⁴ See earlier work of the author referred to in this paper. Note that some of the ideas presented here are developed based on a grant received from the Centre for Inquiry-based Learning in the Arts and Social Sciences at the University of Sheffield (CILASS Subject Centre IBL Grant Scheme – 2009-2010).

¹⁵ Henry Sanoff, *Democratic Design: Participation Case Studies in Urban and Small Town Environments* (Düsseldorf: VDM Verlag Dr. Müller, 2010).

¹⁶ Community and Neighbourhood Design Workshop Course Package, Department of Architecture and Urban Planning, Qatar University (Doha: Qatar University, 2010).

- **To establish** students' sensitivity in understanding community design as a critical approach to architectural practice that goes beyond mainstream approaches, and as an interactive/collaborative process that integrates research into design.
- **To acquaint** students with particular knowledge of a wide spectrum of issues that pertain to community design, including benefits and approaches to community design, lifestyle theories, sense of community, community diversity, user preferences, etc.
- **To enhance** students' understanding of the core concepts, methods, and techniques that pertain to community design as they relate to different phases of the design process (programming, design, post occupancy evaluation), and as they relate to different types of environments.
- **To develop** students' critical thinking abilities about the role of community involvement in different phases of the design process.

While the course involves lectures, readings, discussions, in-class exercises, and a research project, the expectations and learning outcomes were spelled out to the students as illustrated below:

Upon successful completion of this course, you should be able to:

- *Infer the nature architecture as a social service touching every aspect of human activity.*
- *Appraise the role of the architect in the design of the built environment.*
- *Understand the core concepts regarding community design and participation and how these concepts vary and alter with political, cultural and socio-economic variables.*
- *Estimate the importance of involving actual users in the decision making process pertaining to the built environment.*
- *Comprehend the effects and consequences of decisions with respect to all parties involved in the design process.*

Fig.2. List of expectations and learning outcomes of the course: ARCH 313- Community and Neighbourhood Design Workshop offered by the Department of Architecture and Urban Planning, Qatar University (2010, 2011).

Integrating the three learning mechanisms required paying attention to students' capacity in grasping the concepts learned in the lecture and the way in which such concepts can be transformed into course activities and

pedagogical events. A series of exercises was developed by the author to integrate the three learning mechanisms while complementing different types of knowledge offered to students in a typical lecture format. While the course involved a delivery of 10 lecture presentations, it included several exercises and a term research project. All exercises were explained to the students, and how they are linked to the knowledge and experiences they have already gained. While some exercises were performed in groups of two, others were individual exercises based on the nature of each and the type of issues involved. As a standard teaching practice, each exercise was typically followed by a class discussion moderated by the instructor/author where all students have opportunities to voice their thoughts to the whole class. What follows is a set of three examples selected from a wide variety of examples utilized as responsive learning mechanisms.

Critical reflection as a form of in-class active learning

What do we know about community and participatory design?

As part of the course delivery, this exercise adopts the premise that reflection is a critical part of any teaching/learning practice. In this sense, reflection should underpin all learning activities in architectural education, as it is a vital part of future professional practice. Reflection involves a “looking back” on own experiences and/or those of others so as to learn from them. In essence, it is viewed as a means of constructing knowledge about ones’ self and the world. As a process, it includes analysing, reconsidering, and questioning experiences within a wide spectrum of issues relevant to the course materials including community aspirations, social justice, cultural norms, and the role architects and planners should play in these issues.

Following a lecture delivered on concepts and paradigms of community design, a critical reflection exercise was introduced. In this exercise, students were required to carefully watch three video clips relevant to community design, which represent concepts and case studies. These were community design on the front line, Cameron Sinclair’s open source architecture, and the refugees of boom and bust (Figure 3).¹⁷ The duration of the clips combined is 35 minutes while the duration of the whole exercise including watching the clips do not exceed 75 minutes. Students were required to write position essays that would not exceed two pages, with a range of 800-1000 words, and to be performed in-class.

¹⁷ Video Clips introduced as part of the Community and Neighbourhood Design Workshop included:

Community Design on the Front Line (8:29), by Kathleen Dorgan and Olivia Stinson, Co-production by Dan Etheridge, Filmed and edited by Soup factory Digital, New Orleans, LA http://www.di.net/videos/community_design_on_front_line/; Cameron Sinclair – Open Source Architecture

http://www.ted.com/talks/cameron_sinclair_on_open_source_architecture.html; Cameron Sinclair – The Refugees of Boom and Bust http://www.ted.com/talks/cameron_sinclair_the_refugees_of_boom_and_bust.html

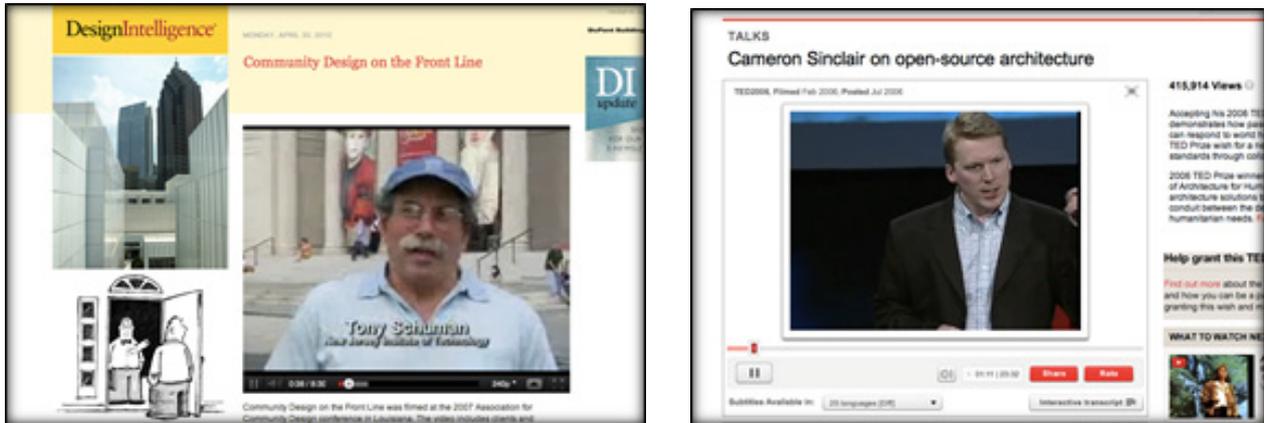


Fig. 3. Covers of video clips introduced to students as part of the critical reflection exercise.

In guiding the students to structure their essays, a number of issues were presented to them, as shown in figure 4.

You are to take notes while watching the three clips and write a critical statement that represents:

- *Your understanding of community design and what it is about?*
- *Who are the community designers and their role?*
- *What are the typical projects/building types that community design addresses?*
- *What are the typical issues addressed in the community design process?*
- *Your position toward community design, do you see it as an alternative way of designing for architecture and communities*

Fig. 4. List of issues utilized as a guidance for students to structure their critical essays.

On students' feedback: In a discussion with students on the value of introducing these types of exercises, they commented that the exercise was a good vehicle that enhanced their understanding of community design and fostered insights into the role of architects in a specific context. As well, some students commented that the exercise extended a deeper insight into the development of personal positions about participatory architecture. Excerpts from one of the student essays reveal the merits of critical reflection and that students can develop personal positions and articulate them (Figure 5).

I believe that the prosperity of any country lies through the empowerment of its citizens. People are the promising devices and in order to activate these devices, they have to be part of a community that takes their decisions and thoughts into consideration. Community design has solved many problems because of the people's involvement in figuring out these problems. Architects are the ones who aid in advocating solutions because they are the professionals. And since the world is getting smaller day by day, this approach is a grass-root movement towards solving problems that shouldn't have generated in the beginning. Advocacy, instigation of ideas along with the community and implementing them summarizes all that has been said. Yet, this approach isn't an alternative to other design approaches.. I believe that it has to work along with other means that are being conducted nowadays. An architect is without a doubt a person who facilitates things, but at some positions and concerning some projects pragmatic decisions should dominate. Either ways this approach shouldn't be questioned for it has been the aid to many issues.

Fig. 5. Excerpts from the essay of student Heba Al-Ghawi on her position on community design and the role of architects (Spring 2010).

The Walking Tour-PLADEW: An experience-based mechanism for learning from the environment

Collaborative Impressionistic Assessment and Understanding a Learning Community

This exercise was introduced to students to offer a structured learning experience while adopting the concept of 'the built environment as an open text book' and as an inquiry based learning (IBL) mechanism. The exercise places emphasis on impressionistic assessment. It focuses on specific features of an environment/building that accommodates a specific community. The environment under investigation in this assessment is the newly designed and built Female Engineering Building at Qatar University Campus. Involving a structured walking tour in the building utilizing checklists and questions under specific factors, students were required to work in groups of two. Among the several factors introduced to students to conduct the assessment, there were four major factors forming an assessment tool: PLADEW: that focuses on the sustainable

design characteristics--Planning and Zoning; Landscaping; Designing; and Energy and Waste.

PLADEW is a tool devised to facilitate a deeper understanding of the built environment and the community associated with it through self-guided tours. Notably, each of the four factors involves checklists and a scoring system and structured in a manner that allows students to take a structured walkthrough in and around the building. The evaluation strategy in this sense is considered to be impressionistic which increases the understanding by focusing on specific factors. Checklists are phrased in the form of questions underlying each factor. Questions are designed in a generic manner that reflects the essence and the issues underlying the factor (Table 1). Numerical scores are assigned to the questions to represent the degree of appropriateness underlying each factor using a five-point scale method. Scores are averaged and an overall score for the building is then computed.

The overall set of procedures that students were required to perform can be outlined as follows:

- Conducting a self-guided tour, starting by the site and the surrounding context then interior spaces (students may inquire about some technical aspects and get feedback from personnel in charge of the utility system and maintenance)
- Numerical scores from 1 to 5 are assigned to each question underlying the factors (1= highly Inappropriate, 5= very Appropriate)
- Responding to each question underlying each factor
- Analysing the numerical ratings by computation of average scores for each factor, then computation for the overall scores of the building
- Developing concluding comments based on the overall appraisal, while highlighting positive and negative aspects

Factor 3: LANDSCAPING							
<i>Highly Appropriate</i>	1	2	3	4	5	<i>Highly Inappropriate</i>	<i>Score</i>
1.	How effectively are the site features kept? (Consider levelling, excavations, and land filling).						_____
2.	Does the landscape design integrate the site with the surrounding environment? (Is the site surrounded by fences, if so, consider the materials used for fence treatments).						_____
3.	How effectively does the design of landscape items avoid the use of synthetic materials? (Consider the materials used for walkways and the asphalt pavements of the parking area)						_____
4.	Does the project introduce soft-scape elements (natural plants and shrubs)? If so, how effective? (Consider their harmony with the existing natural environment).						_____
5.	How effectively are the site furniture items (seats, pergolas, garbage boxes) installed in and distributed within the site? (Consider their location, materials, and manufacturing).						_____
6.	How well are the routes around and within the site marked? Are the markings clear and easily understood? (Consider directional signs, their location, content, and material).						_____
7.	Are there any signs for environmental education purposes? If so, how effectively they convey messages about appropriate behaviour?						_____
8.	Are the pedestrian paths and other hard-scape elements made of natural or recycled materials?						_____
9.	Does the site have a re-used water system (grey water)? If so, How effective? (Consider capturing rain water-if any and re-using it for irrigation, or other purposes)						_____
10.	How effectively does the project introduce native plants that require least amount of watering?						_____
Average Score (total/10)							_____
Photographs or other forms of illustrations that represent issues underlying sustainable landscape design.					A Summary paragraph should be written describing how well landscape design has sustainability related issues.		

Table 1. Example category utilized in the walking tour as an experience-based mechanism.

On students’ feedback: The findings point out that the students were able to make judgments about the built environment and to give reasons for those judgments. Yet, students’ analyses revealed shortcomings in their abilities to comment, where a few students could not express their concerns verbally and could not write an understandable reporting statement. Also, a fewer number of students were not able to recognize similarities and differences between the questions. However, they commented that checklists and survey tools for investigating the built environment helped them recognize exactly what to look for in the building, and to understand relationships between different factors, while comprehending the impact of one factor as opposed to others (Figure 6).



Fig. 6. Examples of posters developed by the students Al-Dana Al-Sulaiti and Fatma Al-Thawadi (Spring 2011) as part of the outcomes of implementing the Walking Tour-PLADEW (Spring 2011).

The Design Game: A collaborative learning mechanism for students' engagement in a classroom setting

Collaborative Design Thinking and Understanding a Learning Community

The design game exercise was introduced as a collaborative active learning mechanism in the classroom. A design game, developed initially to interact with client and user representatives, is utilized for engaging students in a dialogue about learning environments for children, acting as a powerful generator of dialogue among students, and a catalyst for effective communication. Theorists argue, and rightly so, that a game is a simplified slice of reality and in this exercise it is utilized to abstract the essential characteristics of a design situation. Games are of particular value to architecture students. Such a value lies in their ability to encourage full

participation by a group whose members are willing to share their ideas in a situation, which may not be intimidating. Working in groups of four or five students, the procedures of the game are multi-layered as outlined in the following discussion.

Exploring classroom cluster typologies

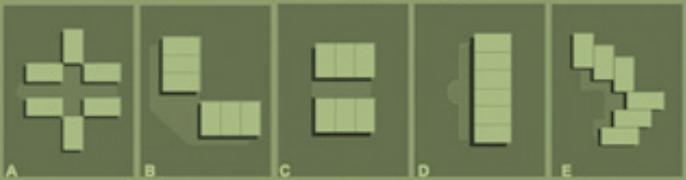
As an integral part of the game, students were given a form that includes a list of questions and a number of cluster typologies. Questions combined educational and environmental goals. The images were selected to represent variations of different classroom clusters that support the achievement of these goals. The main objective is to stimulate student thinking about how the cluster types may achieve certain goals. In a group discussion format, students were required to discuss these clusters. Issues related to mixed age groups, promoting interaction between children, opportunities for outdoor play, reflecting a welcoming school building entrance, were among the issues students were required to explore (figure 7-a).

Beauty contest: Debating a school building identity

An important step of the game was to understand identity of a school building. This is based on the notion that building images can have different meanings that depend on our ways of looking at objects. The meaning of school building image goes beyond its function. In many cases, we can identify who uses the building and what happens inside. We often feel emotionally triggered by a building image.¹⁸ Our first impression is to either like it or dislike it, but if we look more carefully we may find relations between present feelings and past experiences. Issues of visual qualities, conveying an inviting feeling, and school identity were among the issues students were required to explore (figure 7-b).

Henry Sanoff, Visual Research
Methods in Design (New York, NY:
Van Nostrand Reinhold, 1991).

Classroom Cluster Typology.....



Cluster
Double Loaded

Enclosed
Single Loaded

Linear
Double Loaded

Linear
Single Loaded

Staggered
Single Loaded

Please select the best classroom cluster arrangement that would satisfy one of the following aspects (please check one only)

	A	B	C	D	E
- Allows for mixed age group.....					
- Promotes interaction between children					
- Allows for indoor-outdoor integration					
- Achieves the most welcoming entrance					

Please comment on the reasons for your choices

IMAGE BEAUTY CONTEST

School building images can have different meanings that depend on our ways of looking at objects. The meaning of school building image goes beyond its function. In many cases, we can identify who uses the building and what happens inside. We often feel emotionally triggered by a building image. Our first impressions is to either like it or dislike it, but if we look more carefully we may find relations between present feelings and past experiences.

Mark with "L" the image of the school building that best fits your idea of a Pre-School?

Briefly describe the reasons and the characteristics of the image that influenced your choice.

.....

.....

Which of the images conveys a welcoming feeling?
---A ---B ---C ---D ---E

Why?
.....

.....

Which of the images reflects a unique identity for a Pre-School?
---A ---B ---C ---D ---E

Why?
.....

.....

Discuss the choices on the above questions with your colleagues and submit this form at the end of the class session.



Left: Fig. 7-a. Classroom cluster typology worksheet.
Right: Fig. 7-b. Beauty contest worksheet.

Understanding objectives and activities

- This step is based on the assumption that objectives generate activities and in turn activities generate spaces and places.
- Students are involved in a process of identifying the objectives of the learning environment. The result of this step is a list of objectives developed by the students.
- The second step involves defining different types of activities that might occur. Again, a list of activities is developed to achieve the objectives.
- Students are involved in a process of listing all the possible spaces that may accommodate the activities.
- The groups are asked to choose a number of activities that support each objective they have chosen in the previous step. The group members are given the opportunity to add activities that are not in the list.
- Once they reach consensus about the objectives and activities, they are asked to fill in the record sheet, and mark the spaces that they think appropriate for the selected activities.

Developing spatial layout diagrams

- Students are involved in a process of developing graphic symbols that represent all the activities of the building to be designed. In this case, it is a learning environment for children.
- Students draw game boards that include grids. The size of a grid should correspond with the size of activities symbols.
- Working in groups students are involved in a process of exploring design issues. Each activity symbol should be placed in a vacant grid. Rules included that activity symbols should not overlap and that they should be located on the basis of their requirements for privacy or accessibility to each other.
- After going through this planning process, students gained a better understanding of the problems related to the learning environment and on this basis, they were requested to develop an adjacency diagram. The diagrams resulting from this process represent alternative design concepts that provide a knowledge base before starting the task of design.

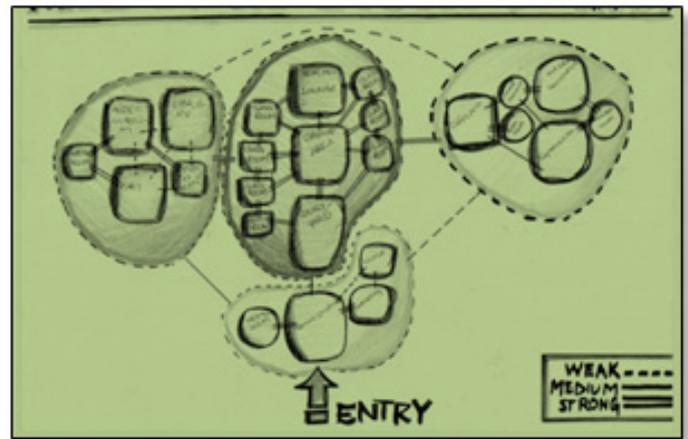
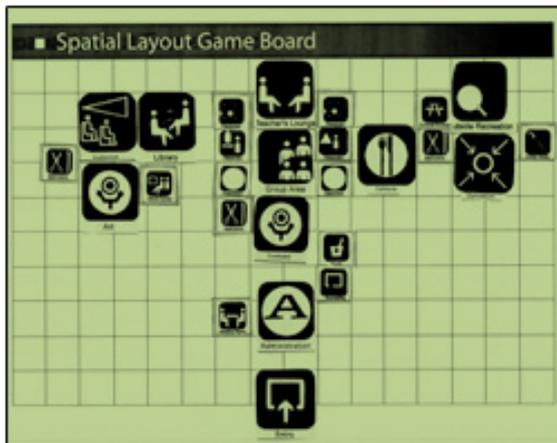


Fig. 8. Example of utilization of graphic symbols to explore design issues of learning environments and the resulting spatial layout diagram (Spring 2011).

Students Feedback

The game was very interesting and thought simulating, as is recalls our past experiences as we were users of the intended space in the past. By providing multiple choices our analyzing skill was motivated to look at different aspects of the given problem and to link them to approach the most suitable choice or solution. The stages of the game directed and strengthened our decision by the process that we went through. The game required successful time management, task division, and individual and group effort as each player discussed his opinion and way of thinking and then, as a team the group agrees on the same choice or set of choices.

Al-Dana Al-Sulaiti, Spring 2011

At the end, group work has its positives and negatives. Discussing many points of views, arguing and cooperating within the group, can come out with a product different and better –usually– than an individual work. Making decisions is usually a hard thing to achieve individually, so what if it was in group? it will be an achievement. The School Design Game, helped in taking into consideration others' views and expressing the personal opinion and trying to convince others about it. Observing and analyzing pictures, helped to think differently while designing any project, also to think wider, to create and not to be only a follower.

Rana Jamous, Spring 2011

Fig. 9. Selected students' feedback statements on the design game (Spring 2011).

Critique: Towards a new form of architectural pedagogy

This paper offered a stance toward seeking new forms of pedagogy in architectural education with a focus on lecture-based modules. While outlining two critical issues that represent some of the ills that characterize contemporary teaching practices in architecture, the paper underlined the shift from mechanistic pedagogy to systematic pedagogy and the characteristics of each. Building on critical pedagogy and the hidden curriculum concept transformative pedagogy was introduced as a form of pedagogy that can be intertwined into mainstream teaching practices.

Translating the premises underlying systemic and transformative pedagogies, inquiry-based, active, and experiential learning were identified as responsive learning mechanisms amenable to work against some

of the negative tendencies in teaching practices in architecture. These mechanisms were implemented as a series of exercises in a lecture-based course, I have taught in spring 2010 and 2011: ARCH 313- Community and Neighbourhood Design Workshop, offered as part of the core architecture professional program at Qatar university. The exercises involved a) critical reflection as a form of in-class active learning, b) a walking tour-PLADEW introduced as an experience-based mechanism for learning from the environment, and c) a design game introduced as form of collaborative learning for students' engagement in a classroom setting.

It should be noted that the results of implementing the three exercises are not exclusive. They nevertheless assert the value of introducing structured interactive learning mechanisms in lecture-based courses while utilizing the built environment as an educational medium. The two widely held conceptions of the built environment; the conceptual/subjective and the physical/objective, are embedded in the exercises.

The first exercise engaged students in questions about the contribution of participatory design in a specific context or community. The essays-as an outcome of this exercise showed that students were able to 'look back' at the experiences they have seen in the clips about community design. By and large, the exercise encouraged students to reflect on issues that go beyond the physical form, including socio-cultural aspirations of a community, justice and equity and the multiple roles architects can play in a community. In essence, these issues differ dramatically from those adopted in traditional teaching. In fact, for many traditional educators they do not qualify as part of architectural topics in conventional pedagogical practices. I argue that exploring such issues in this exercise contributed to shifting students from passive listeners to active learners and thinkers.

Utilizing the built environment as an open textbook, the walking tour exercise while aimed at introducing structured experiential learning through some form of assessment research, it does not provide comprehensive panacea to the misconceptions that characterize conventional teaching, nor it addresses the complexity of the physical environment. Yet, it helped students focus on specific aspects of the built environment that pertain to a specific knowledge content while bridging the gaps between 'what' and 'how' types of knowledge. In essence, it fostered students understanding of how the qualitative aspects of the built environment could be translated into quantifiable measures. I argue that this exercise and the information gathered by students, which was brought to the entire class for discussion contributed to shifting students from knowledge consumers to knowledge producers.

Implementing a design game in the class that involved group work, reflection and debate, and reaching consensus and decision making

contributes to understanding needs and wants of a specific user group or a community while simulating the interaction with clients and users. Observing students while conducting the game and investigating their feedback statements suggest that the exercise offered students sufficient opportunity to attain several abilities that include the ability to transform verbal and behavioural information into space adjacency diagrams, the ability to work effectively in a group, to listen, to observe, and to ask good questions, the ability of knowing when to raise issues and how to manage discussions, and the ability to respond to conflicting design constraints and preferences. I argue that this exercise contributed to the creation of excitement in the classroom while engaging students actively in a wide spectrum of mental activities.

A considerable portion of students' education in architecture and design is based on 'experience', 'making' and 'active engagement.' Students are typically encouraged to study the existing built environment and attempt to explain it through theories or typologies, always looking at outstanding examples. However, underlying these theories, there are assumptions about the built environment and the people associated with it, and usually these assumptions remain hidden. It is in this relationship lies the 'lesson' to be learnt. Whether people associated with the environment were the actual users of it or were students acting as observers and users at the same time, the incorporation of exercises similar to the ones introduced in this paper would foster the establishment of links between the existing dynamic environments, the concepts and theories that supposedly explain them, and the resulting learning outcomes. Consequently, the contribution of inquiry-based, active, and experiential learning to architectural education lies in the fact that the inherent, subjective, and hard to verify conceptual understanding of the built environment is harmonised by the structured, documented interpretation that is performed in a systematic manner in a learning setting amenable to invigorate critical thinking and reflection.

The built environment is variant, diverse, and complex. Buildings and spaces are major components of this environment: planned, designed, analysed, represented, built, lived in and occupied. They are also experienced, perceived, and studied. They should be re-defined as objects for learning and need to be transformed into academic or scientific objects. In this respect, one should emphasize that in order for an object to be taught and learned, its components should be adapted to specific pedagogic and cognitive orientation that introduces issues about specific bodies of knowledge.

It is the position of this author that seeking new forms of pedagogy and the incorporation of responsive learning mechanisms into architectural education represent a new edge and a learning paradigm in architecture

that integrates the real and the hypothetical, the process and the product, the objective and the subjective, and ultimately the behaviour and the dynamics of the phenomena future architects are exposed to in their education. In this respect, it is firmly believed that introducing and implementing tools that utilize the built environment, buildings, and spaces as a teaching tool and as open textbooks foster the capabilities of students to be critical thinkers, active learners, and eventually responsive professionals.

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