"Teaching The Techniques Of Making

Architectural Metaphors"©

by

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6,849 words on 29 double spaced sheets

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As published:

."Teaching the techniques of making architectural metaphors in the twenty-first century."
Journal of King Abdul Aziz University Engg...Sciences; Jeddah: Code: BAR/223/0615:
OCT.2, 1992 (.1421 H.) 12TH EDITION; VOL. I
and
"Transactions" of
Cardiff University, UK. April 2010

Introduction:

This monograph is in response to a request to explain the application of the ***metaphoric theorem*** and ***metaphors*** in teaching architecture in Saudi Arabia. It incorporates views by Mark Gelertner presented in 1988 at the Association of the Collegiate Schools of Architecture's Seventy-sixth annual meeting. These views are particularly relevant to any discussion about education in Saudi Arabia because in various forms they are widely shared. Happily though these views do not prevail but do have an important dimension worthy of consideration. This article applies the research and scholarship of H.A.Ozman and S.M. Craver, W.J. Gordon, P.Weiss, G.Dodds and A. Al-Saati into ten divisions which studies ***teaching the techniques of making architectural metaphors in the twenty-first century.***

The ten sections are*:*

1. Idealism and the working ***metaphor***
2. The ***metaphor*** in the ideal educational situation
3. Repertoire of ***metaphors*** with mental schema
4. Learn with ***metaphors***
5. The ***metaphor's*** correlations
6. ***Metaphor's*** philosophies and techniques
7. A teaching alternative

8. ***Metaphor's*** role in learning architecture

9. Tradition and the ***metaphor***

It is hoped that a compendium of educational views will have a positive affect on the planning, revision and guidance of architectural curriculums and teaching approaches. Often planners debate about issues at one level which are best dealt with at another so this work turns to Jean Piaget, John Locke, Aristotle, Plato, Jean-Jocques Rousseau, Sybil Maholy-Nage, Edmund Husserl, Martin Heidegger, and John Dewey. It is their views of idealism, phenomenology, realism, pragmatism, existentialism, reconstructionism, behaviorism, perennialism and essentialism that have given perspective to psychology, cultural tradition, self-realization, mimesis, functionalism, the bauhous and Ecole de Beaux-arts, behavioral engineering, linguistic analysis, traditionalism modernism, liberalism, and radicalism. All of these help to analyze the controversial role that tradition, culture and heritage should play in the basic education of architects. Education and philosophy reveals ***metaphors*** and ***metaphors*** reveals education and philosophy. The mechanics, structure, relationships, context, applications, characteristics definitions, affects and goals of the ***metaphor*** are compared and explained. The reference to education of architects in Saudi Arabia is only as a ***type*** of beneficiary of educational approaches.

"Idealism and the working metaphor"

(1.0, pg.24)Jean Piaget expresses psychology as an ***Idealist***. (1.0)***Idealism*** is perhaps the oldest systematic philosophy in western culture, dating back at least as early as

(pg.31)Plato (***427-347*** B.C.) in ancient greece. Generally, idealists believe that ideas are the only true reality. They hold that the material world is characterized by change, instability, and uncertainty, while some ideas are enduring.

(1.0) Ozman, H.A., and Craver, S.M., ***"Philosophical foundations of education"***

Thus, ***idea***-ism might be a more correct descriptive term for this philosophy than idealism. In this way the philosophy into which the ***[1]metametaphor*** theorem fits may said to be ***idea***-ism. However, in so far as a ***metaphor*** expresses itself it is in (1.0,pg.82-83)***pragmatism*** which depends upon induction, human experience, naturalistic humanism, and the relation between science and the ***culture*** of man. John Locke (1632-1704) best expressed that ideas are not innate as Plato maintained; rather, they came from experience, that is, sensation and reflection. The very things of which ***metaphors*** are made. As people are exposed to experiences, they are impressed on the mind. These experiences are all imprinted on the mind through one or more of the five senses. Once they are in the mind they can be related in a variety of ways through the use of reflection. We can acquire the idea of milk through the sense of taste; perfume through the sense of smell; velvet through the sense of touch; and green through sense of sight. One can create ***ideas*** of green milk or perfumed velvet. These are kinds of ***metaphors***.

Locke believed that as people have more experience they have more ideas imprinted on the mind and more to relate. More to exude, reify

and translate. These expressions we perceive as ***metaphors***. The only way we can verify the correctness of our ideas are in the world of experience. We look to test our ***metaphors*** by perception, use and application. Is it working is the question the artist

must ask even of himself as the first preceptor.

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1. ***meta*** : used with the discipline of the ***metaphor*** to designate a new but related discipline designed to deal critically the original ***metaphor***. It is more comprehensive and transcends the literary ***metaphor.***

(1.0) Ozman, H.A., and Craver, S.M., ***"Philosophical foundations of education***
"The metaphor in the ideal educational situation"

(1.0,pg.25)The cardinal objective of idealism and ***idealistic education*** is the ancient Greek notion to "***know thyself***". They believe a true education occurs only within the individual self. The responsibility of the educator is to provide the materials and activities that influence learning.

(1.0, pg.23)It is the response of the learner to these materials and activities that constitutes education. This approach has been most adapted to higher education and to the arts in particular. It is kind of management by objective rather than by supervision.

(1.0,pg.23)The sources of the learner's actions are personal and private; therefore, in idealism all education is self-education. The project method used extensively in colleges and schools of architecture might be concrete examples of self-activity.

(1.0,pg.24)Jean Piaget and others have shown that it is not unreasonable to expect students to demonstrate some critical regard for the ***material*** they are exposed to at various stages of development. It is in this way that a learner makes choices, discriminates, emphasizes, de-emphasizes and corrects these things which are unfamiliar to those familiar. It is in his technique and content where one encourages the other. The greater the need and acknowledged emptiness in content the more one exercises a technique to get the content.

(1.0) Ozman, H.A., and Craver, S.M., ***"Philosophical foundations of education"***

The more one discovers the content the more one develops the technique. The more one knows about the material, the more the technique is needed to delve even further. So now one demands of ones self more knowledge of technique to know more content. The architectural ***metaphor*** demands this interrelationship between the project; context of projects, knowledge in support of the project, physical, social, psychological, sociological, technical, scientific, industrial, etc. dimensions. Its' structure, mechanics, finishes, equipment, materials etc

"Repertoire of metaphors with mental schemas:

(2.0)For Piaget learning is a kind of trial and error activity culminating in a successful solution to a pursued goal. The process encountered in the pursuit are remembered by the learner as a kind of program, what Piaget calls a ***mental schema***. Now when this same person applies this same ***mental schema*** to solve another problem Piaget says the problem has been ***assimilated*** by the existing ***schema***. Inducing this kind of association of the familiar (2.0)***mental schema*** for the unfamiliar is the work of (3.1)William J.Gordon. If the (2.0)***mental schema*** does not work and the learner ***evolves*** the original (2.0)***mental-schema*** to cope with the new problem Piaget says it has been ***accommodated*** to the problem. This is the transforming ***characteristic of the metaphor and the metaphoric process.***

(2.0) Gelernter, M., "***Teaching design innovation through design traditions*** from 1988,

ACSA Proceedings of Seventy Sixth Annual Meeting. (School of Architecture and Planning - University of Colorado at Denver.)

(3.1) "Synectics: ***The metaphorical Way of Knowing***"

(3.2)The ***metaphoric*** process is based on a literary term which means "***carrying-over***"; it associates meanings and emotions which would otherwise not have been related. Essences known to have a preferential or primary use (the original (2.0)***mental Schema***) in one context are explicitly employed in another. Piaget claims that once the ***new schema*** has been developed it is retained as a ***repertoire*** of possible solutions to problems. These mental (2.0)***repertoire*** include not only material solutions to physical problems but to problems of comprehension as well. Their is then a repertoire of solutions that provides the individual with competence to act in the world. Examples are plenty in architecture. Formulas, for stair's risers and tread relationships; furniture sizes; drafting techniques; indexes to information; prices; quantities; estimating tools; engineering techniques; heating, ventilating and air conditioning technologies; manufacturing sources; consultants, etc. This list goes on and on of the many facts, figures and concepts remembered and brought to bear by the practicing architect and before, to a lesser extent, by the learning architect. In any approach to creative work or learning the individual in process of creation encounters problems for which he either already has an ***existing (2.0)schema*** or evolves a new one.

Creativity though is not always a "***problem-solving***" event. It may be a creative one which uses the past, present and vision of the future (in the form of analysis of program)

to create a work. It is an inclusive "***information gathering***" perceiving and reifying process.

(3.2) Weiss, P., "***The metaphorical process"***

(2.0) Gelernter, M., "***Teaching design innovation through design traditions***"

Which concretises and forms by juxtaposing the conditions, operations, ideals and goals (C.O.I.G.) of a project. It is the synapse, transformation and interrelationships of these (C.O.I.G.) which creates the composition we call ***metaphor***. The content of the work of architecture is the experience with these program elements that are brought about by the [(4.1)]***technique*** of creativity. "Technique ***reveals*** what content itself cannot". These are the remembered ***mental schema*** where a prior experience is accumulated nurtured and encouraged.

"Learn with Metaphors":

Architects learn to learn; and, learn to research, program, analyze, develop sources and resources, dimension, scale, volume, limits, boundaries, scope, depth, movement, context, etc where none existed before. The ***maker of architectural metaphors*** sees in an "open-ended" seamless situation very specific parameters where the unexperienced fails. It is in the phenomena of his [1]a prior; holistic experience with [(4.1)]***techniques*** of making that the individual with all the elements is able to take a new content into yet another ***metaphor***. A new ***metaphor*** which never did exist before yet is based upon every known experience of architects, his or her's profession, the school they attended the way they learned and knowledge they accumulated. Each is unique yet well related by the commonality of the uniformity of the information, the contexts, etc. experiences,

contexts, teaching foundation, schools of philosophy, family and social.

(4.1) Dodds, G., ***"On the place of architectural speculation"***

1. ***a priori:*** from the former, deductive; relating to or derived by reasoning from self-evident propositions; ***presupposed*** by experience; being without examination or analysis. Formed or conceived beforehand. Presumptive as compared do ***a posteriori*** : from the latter, inductive, relating to or derived by reading from observed facts.

The exercise prepares future architects to be in their own time, with their own history, venues and contexts and yet be able to originate works of architecture which are both peculiar, particular, tailor-made, and indigenous. Such transcends but adapts well to culture, tradition and heritage.

(4.1)It is the ***metaphor*** that reveals the content. It is the ***metaphor*** that was composed of the content that has all the cues, limits, bonds, and sense stimulants so organized on the basis of the program that, when perceived, recalls the content to users. This remaking is a restoration of knowledge that does not resemble the original so much as it leads to the essential condition of the [1]***referent***. The [1]***referent*** may include every experience of the architect, the process of creating this very project, and all the elements which form the building. Indeed the process is [2]***heuristic*** as a restoration or remaking of a condition that is no longer present. The ***metaphor*** too reveals whatever does not bring itself forth. This is the mission of the composer which is endued in the residue of his experience: the ***metaphor***. It all is an extension of his identity and the vehicle by which he is (manifests, asserts, confirms, tests, and again becomes) the architect.

(4.1) Dodds, G., ***"On the place of architectural speculation"***

1. ***referent:*** the "thing" that a symbol stands for.

2. ***heuristic****:* to discover; as an aid to learning, discovery, or problem-solving by experimental and especially trial and error methods. It is exploratory self-educating, and improves performance.

"The metaphor's correlations"

Can a ***metaphor*** composed by one be read by another? If both have been similarly cultured by the same experiences the reader and composer may communicate through the work. No two people, even in identical situations perceive and retain in the same way.

Mark Gelernter explains that [(2.0)]***the individual culture gives explicit guidance about which solutions work and which solutions other members of the culture will understand.*** Certainly this is true for the standard expectations any society values its' neighborhoods, building types and styles. These become the measures by which an individual values his or her success and accomplishments, and by which he or she can compare him or herself to others in society. It is a primary function of any ***metaphor*** and the ***metaphors*** in a society which cue us toward our relative positions. This is a function of both art, architecture and all other ***metaphors***. It enters the culture's general repertoire. [(2.0)]***Cultural traditions provide rapid competence when recurring and familiar problems are faced, and when new problems emerge they provide the essential base of knowledge from which new ideas are derived.***

Indeed there are many published standards for graphics, layouts, detailing, design

organization, specifications, contracting, management and construction. These are never meant to be copied, but along with manufacturer, context, site, program and personal specific information ***metaphorically*** [1]created to produce the appropriate and relevant ***metaphor***. They can be emulated.

(2.0) Gelernter, M., "***Teaching design innovation through design traditions***"

1. ***create:*** to bring into existence; to invest with a new form using imaginative skill as design and invention.

This approach accepts the ***realist*** view that reality, knowledge, and value exist independent of the human mind. It is ***Aristotle*** that [(1.0)]argued that the form of things and the universal properties of objects remain constant and never changes whereas particular components do change. A major problem, according to the realist, is a general cultural malaise caused by a lack of commitment to fundamental values. This is shown in the breakdown of discipline and disregard for basic traditions. [(1.0 pg.56)]Perhaps the best illustrations of this fact is that schools of architecture have drifted away from a concentration of the essentials of techniques, engineering design, and character development.

[(1.0)]Perhaps the crowning evidence of the failure of "***discovery***" and "***open***" approaches, realist argue, is the embarrassing number of (architectural) graduates who are functionally illiterate. They can not operate within a professional office as either apprentices or on their own. **[(1.0, pg 59)]**Realists therefore support the lecture and other formal ways of teaching. Self-realization they argue, best occurs when students are ***knowledgeable*** about the external world. Just compare this to Dewey's "***consummatory***

experience" where the learner's own experience is internalized providing unity and completion.

Is ***making metaphors a culturally accepted*** activity and how much of a change does an architectural student undergo from his or her natural familiar or social setting? The answer is usually that there is a rift in this way of thinking from settings to which the student may reside..

(1.0) Ozman, H.A., and Craver, S.M., ***"Philosophical foundations of education"***

Most business, professional, social, cultural and tradition-bond societies emulation, reification translation and application particularly interested in self-destruction, becoming obsolete or being replaced by something more relevant. To enter into real time with these prodigious practitioners one must [(5.0)]claim, sometime hostilely, this new time and place. This was recognized by the founders of the so-called modern movement in philosophy, art and education. Not equipping graduates with this ***metaphor*** is setting one's society on a track of a possible momentary success followed by fatal obsolescence.

[(2.0)]The classic apprenticeship system, after all, trained students to design buildings exactly as any culture trains its' members to speak its' language. The apprentices mimicked the design of a master already skilled in design. This according to Plato is the [(4.1)]bad mimesis : the imitation of things - illusions of things, rather than the things themselves. The primary concern of the "***imitator***" is one of imitation and appearance

not the pursuit of truth and good. It is in the mimesis of speculation, transforming nature in which man ***reenacts*** the first creation, ultimately revealing ***truth*** and ***beauty***.

Today, schools of architecture encourage students to experience many masters not only its' own faculty. They often encourage both mimesis and conditions, cost estimates, construction realities and laws of physics.

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"

(4.1) Dodds, G., "***On the place of Architectural Speculation***".

(5.0) Al-Saati, A., "***Mondrian : Neo-plasticism and its influences in architecture"***

(6.0) But it is not until a student graduates and experiences the realism of application, production and schedules including real clients, contract terms of process and produces.

According to Gelernter up to the [(2.0)]"twentieth century former students learned to design by first studying and even copying the traditional, design ideas in their culture. They would first work on their master's current designs, then produce simple designs of their own based on the master's concepts. They would then proceed to develop personal varieties of those acquired ideas". This was followed by the "***Ecole de Beaux-arts***". The principles were presented "***as embodied in*** particular buildings. Students still worked within the stylistic framework of the atelier master".

Since this time several things have radically changed in the developed world, the least of which is a high degree of social, economic and locational mobility, affluence, break-down of families, and the disdain for the master-apprentice relationship. This coupled with the cataclysmic attitude of modernist purposed to claim the future has yielded focus on novelty, invention and innovation as a way to project oneself into the future while

marketing in the present. This is because of the high numbers having access to education, the enormous competition, and too many careers chasing too few jobs. So much of the developing draws from the developed world approaches to education which can be reviewed in the context of the political, social, and economic designs of the particular nation. On the other hand the education of individuals within any nation is not only for use in that nation but focussed on the individual as he or she may utilize this education elsewhere and surely in some future time.Today's schools of architecture provide this kind of educational opportunity to students in the form of work/study programs and project assignments which focus on specific architects, building types, design philosophies, etc.

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"
"Metaphor's philosophies and techniques"

(2.0)Traditional forms of education based on ***precedents*** were replaced by ***functionalist theory*** claiming that every new design problem consist of unprecedented requirements including a unique site, functional demands and client wishes. ***Modernist's*** education wants to teach students how to face these unprecedented problems without preconception, constraining, or inhibiting their ability to create architectural forms never seen before.

(1.0, pg.85)1J.J.Rousseau (1712-1770) advocated ***pragmatism*** whose greatest social and political enemy is custom and tradition as well as fear and apathy. "Habitual ways of behaving developed in the past worked very well in their ***own time*** but have lost their practicality in today's world.

(1.0) Ozman, H.A., and Craver, S.M., "***Philosophical Foundation of Education***"

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"

1. Jean-Jacques Rousseau: A pragmatist; the student should learn from nature; "***Social Contract***" and "***Emile***". Education should follow student's needs. Pragmatism is a philosophy that encourages us to seek out the processes and do the things that work best to help us achieve desirable ends. Pragmatism seeks to examine traditional ways of thinking and doing, and where possible and desirable, to reconstruct one's approach to life more in line with the human needs of today".

(1.0, pg.167)Of the past, ***existentialists*** believe that most philosophies of the past have asked "man" to think deeply about abstractions that had little or no relationship to life. The individual should be ***drawn-in*** as a participant. One concentrates, not on scholarly debate, but on creation; that is, one can create ideas relevant to his or her own needs and interests. It emphasizes individuality. We must first understand ourselves.

Based on accumulated philosophies of reconstructionalism, existentialism, behaviorism, phenomenology and analytic philosophy the modernist architectural educational system culminated into the ***Bauhaus***. Students were asked to "abandon any previous ideas they might have held about art or architecture and to face their new design problems ***as if*** their minds were completely blank." Now for this period

(1919-1928) after the end of the first world war and in times of great change there was a desire to change and be part of the change that was happening in the world. There was also a reciprocal-like desire to replace the old with the new and be relevant in the future. Then there was the whole matter of the rising preeminence of science which most of the Bauhaus's language and concepts identify. There is also an orientalism in the attitudes pertaining to design principles and theory as if to ***metaphorically*** further distance students and faculty from their current vernacular contexts. Certainly there was the ***meta*** qualityof the Bauhaus which forthrightly embraced all the arts and crafts into a single philosophy

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(1.0) Ozman, H.A., and Craver, S.M., "***Philosophical Foundation of Education***"

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"

(2.0)Students were offered a "***universal***" language of architectural form from which, they were told, they could derive any conceivable architectural ideas. This included notions of balance, symmetry, proportion, mass and scale" which are paradoxically both basic to all good design yet "stylistically neutral". They are so abstract they do not lead the students to think of any particular architectural styles. Gelernter claims that "the modernist educational system encourages students to pursue a degree of novelty which simply does not occur in the real world of building". "Attempting to reinvent the wheel every time one faces a problem inevitably leads to mistakes and, ultimately, building failures. Many of these failures Gelernter continues could be avoided if students designers were less interested in novelty and more willing

to learn the hard won lessons of their predecessors. But yet students work often looks surprisingly similar to the works of todays known great masters because students continue to derive their forms from the best examples of previous work. However, students are discouraged from examining their sources explicitly.

The student's ***metaphors*** are the result of their experience studying the ***metaphors*** of others. In this way experiences are conveyed from one to another through ***metaphors*** and transformed by the student to his particular context. The student learns to see the way a practicing architects are able to exude not only all the practical needs of his program but also some philosophical, formal or geometrical idea as well. In this way the students learns how to read, perceive, experience and compose his or her's own ***metaphor***.

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"

"A teaching alternative":

The study of architectural history, case studies, contextual analysis and architectural precedents strive to induce a deeper experience of and in architecture.

The overall result still is [(2.0)]"neither true innovation nor ***understood design tradition***, but worse still, for many, is only a partial and fragmented understanding of the concepts of design. This could be avoided, contends Gelernter by reorganizing the relationship between ***cultural traditions*** and ***creative invention***.

The architectural student can optimize his ability to communicate by using

exercises that concentrate not on design but the technique of expressing, researching and concretising. These lessons in drafting, rendering, painting, model building and diagramming build the architect's "***speaking***" and "***seeing***" skills. In the study of speech, language, drama, music, etc. a student's early studies concentrate on listening and learning to listen. Architects who first learn to sense, learn, perceive and generally absorb will optimize ***making of metaphors***. The student focuses, not on the program, nor on his process, nor on the product but the process of the original composer, his ideas, expression, details etc. He learns about ***making metaphors*** without himself having made one. However, this ***experience*** does provide him with the ***standards*** he must meet in his ***experience*** of making ***metaphors***.

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"

For this reason various history of architecture studies require students to fully reproduce by rendering and model at least one historically modern and contemporary design. This was the practice by Sybil Maholy-Nage (the widow of Laslo Moholy-Nage) at Pratt Institute during the fifties and sixties of her important teaching career. These exercises recognize student's synaptic ability of art to connect mind to mouth, hand etc. However, the student who must condition him or herself to become not only an appreciator,reader and perceptor but a composer, assembler, organizer and creator. In most other professions and trades the ***creative*** is unacceptable and discouraged. It is in fields where precedence, "route- learning and performance are mandatory. Architecture includes

both, and the student's task is doubly difficult. ***Architectural metaphors*** are composed of an ***overall metaphor*** which is unique in that it is comprised of a series of ***a prior*** experiences and ***finished metaphors*** which can be applied and adapted. It also includes [1]***a posteriori*** experiences. It is a mistake to limit the study of architecture to only [(4.1)]good or bad mimesis, imitation or emulation of product or process, tradition, culture or heritage, contemporary or modern, classic or user-friendly or cost or non-cost consciousness. The truth is that the practicing ***metaphor-making architect*** is ***endued*** with all these.

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"
(4.1) Dodds, G., "***On the place of Architectural Speculation***".

1. ***a posteriori:*** inductive, relating to a derived by reasoning from observed facts. For example, all the architect's analysis of a project's program, applicable laws and codes, building ordinances, manufacturers information, etc.

[(2.0)]Indeed, users of a building designed according to these inherited solutions understand the building's organization and meaning because its underlying principles have been encountered before. ***Metaphors*** communicate what both composer and reader know from similar and common experiences. These are incorporated in building's vocabulary such as walls, doors, stairs, floors, ceilings, windows, etc. They further exude through scale, proportion, size, magnitudes, dimensions, geometry, patterns, etc. ***Architectural metaphors*** are communicated but are not only a kind of linguistic communication. It includes a three-dimensional content of what people want to know. It is more than the obvious materialization into physical form although it is the

physical form which communicates. Students of architecture learn the language, vocabulary and syntax to communicate and compose but they also, unlike the linguist, actor, musician, draftsman, need to learn the content, program and [1]three-dimensional concept of creation.

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"

1. ***three-dimensional****:* where architects discover spatial functional, structural, mechanical and constructional realities in well rounded completeness.

"Metaphoric techniques":

Architecture and the making of metaphors is a serious subject, not to be taken lightly nor reduced to one or another of its' variables. It deals with the whole and substance of much of what constitutes the treasure, wealth, success and accomplishment of a society, civilization and individuals.

The school, university, college, professors, teacher, student, department, etc. which limits its' view of architecture then becomes and produces that view. What may seem relevant, marketable, compatible and timely may be circumstantial and as a result of the faculty's own projections. They are getting what they asked for. Not unlike most professions, architecture is ***self-professing***. If architects say they make ***metaphors***, are draftsman, builders, project managers, restoration specialist, traditionalist, etc. that is what they are and those will be the kinds of architects produced and the demands placed

on the facility. Architecture is classic, setting its' own standards and is standard setting. It is a ***type*** and model which others can add or emulate. If architects become builders or only designers to whom will the builders look to copy or emulate. Even those advocating traditional imitations would be at a loss for a world without full architectural expressions. This is the environment which has been abdicated by the ***architect*** which is then controlled by the real estate developer, lawyers, accountants, comptrollers, engineers, builders, constructors, municipality, etc.

Students do wish to abandon ***a priori*** [(2.0)]"***repertoire of mental images***" which we may call cultural or traditional unless these images can be restored to value. Students are asked to ***abandon their very means of understanding buildings***". For most involved in the ***dialectic process*** this is a welcomed and natural event. It fits well to current maturing and when accepted culturally can induce new experiences.

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"

One can reside in an environment for a life time without seeing, perceiving or noticing its' relationships, structure and connotations. Education deals with extent reality, its' perspective and context in universal history.

We can apply [(2.0)]Gelernter's analogy of learning language skills to learning not architecture but aspects of architecture related to technique, expression, building, construction, contract documents, model building, graphics drafting, rendering, writing

etc. Those skills and facts as language that teach the student about words, their pronunciation, and the methods of combining them used and understood by a considerable community. These are the architect's means of communicating ideas and including feelings by the use of conventionalized signs, symbols, forms, shapes, textures, scale, height, width or features having understood meanings. Just as linguists utilize reading, spelling, literature and composition (the language arts) to develop the student's comprehension and capacity for use of the written and oral language so do architectural educators use history, two and three-dimensional design, construction, structures, research, programming, drafting, drawing, rendering, etc.

In the way mimicking helps students learn a language, copying draftsmanship enables a draftsman. Neither mimetic activities are the source of ideas, but rather the very necessary art to express those ideas. It is often the mastery of some technique of expression which builds the ability of the composer to innovate and create. But the two, technique and ideas are not the same. They depend upon each other and are ***metaphorically*** interrelated but they are sovereign and cannot compete.

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"

They are complementary and mutually supportive. Often our finest artists are both the source of great ideas expressed with excellent quality craftsmanship.
Mastering an idea is not the same as learning to speak a language, yet language is replete with words which are ideas. We remember the words, grammar and syntax along with physical means of using them. Both the technical and the cognitive realms of

architectural composition are involved in the same idea(s) but the former articulates, explains, divides and makes conscious that which is deduced, inferred, learned, experienced and decided. Without a language, ideas would not materialize nor be [1]thought. Technique of the vehicles which conduct our thoughts through a system of senses, perceptions, decisions, and recollections of ***experiences*** of both the inner and outer world.

[(1.0)]For the ***existentialist*** in this kind of experience the teacher and learner are partners in the learning process. ***Perennialists*** promote a cognitive approach to education : one that stresses [1]***thinking*** and particularly philosophical [1]thinking as its' primary goal while ***essentialist*** educational theory has stresses that factual, observable data predominates a purely rational approach.

[(1.0)]***Behavioral engineers*** think of schools as total conditioning units. Though ***behavioral engineering*** faculties and students initiate the kinds of changes necessary to create a new and better world. ***Linguistic analyst*** maintain that what we need in education is to become aware of how language can be used to influence both thinking and action.

(1.0) Ozman, H.A., and Craver, S.M., "***Philosophical Foundation of Education***"

1. ***Thought* :** think, cognition, recognition, reasoning, the power to imagine, conception, a developed intention, as architectural plans, sections, elevations, axonometric, etc.
think: to know : to form or have in the mind. To devise by thinking. To form a mental picture. To subject to the process of logical thought. To think implies the entrance of an idea into one's mind. The forming and bringing forth a conception. To think is to form; form forms from forms.

They contend that not only educational problems, but the social, economic, and political problems of today could be solved or at least abrogated by a more precise and informed use of language. It is this philosophy and theory of education which most aligns with Gelernter's [(2.0)]"***repertoire of mental schemata***" which

may provide a ***repertoire of solutions that provides the individual with competence to act in the world",*** "***as the language analogy innovation of new ideas grows originally out of the old***". This verses the existential phenomenological experience of Husserl, Heidegger and Dewey. Where new ideas are derived from an intimate experience "***with***"

existence and not ideas "***about***" existence. [(1.0)]In Husserl's words, ***"to go back to the things themselves".***

"Metaphor's role in learning architecture"

The transition from the passive non responsible ambivalence of youth is changed to a more relevant stage in schools of ***Higher*** Education. Particularly architecture whose inherent content deals with teaching people how to learn how to learn and regurgitate, reify, and create from what they have learned to others. Architectural faculty also teach these same students how to teach. This is the new world in which these people will reclaim their historical future.

(1.0) Ozman, H.A., and Craver, S.M., "***Philosophical Foundation of Education***"

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"
It is in this intimate way that each student starts to become when he knows he is accountable and takes responsibility for his own thoughts, actions and quality of performance. Not only what he learns but to the depth of that learning and to the degree that he can transfer that to others. This is the promise of architectural Education, Reification, metamorphosis, ***metaphoring***, and communication.

For example, Saudi Arabia faces its' future with a strong emphasis in education where people are taught to be in touch with themselves and the perception of that experience. What do we feel and think about space, proportion, light, dark, shade,

shadow, texture, pattern, geometry, scale, etc. The intimate experience with these directly impact the fledgling architect's ***metaphor***. He or she will always carry-over these experiences to the new contexts of specific users and future building types.

In Saudi Arabia the student architect is first discovering how to claim this experience and translate this to utility and utilitarian contemporary building types. To do this he looks to each context reality and the future. He can do little about the past except for the past which he himself has experienced. Saudi Arab history, culture and heritage can be endued into current building types by educating young Saudi Arab architects to make this heritage a manifest experience. In this way the new architect will carry forward these traditions which he has experienced and make them part of his own personal claim upon his time and place. First he must experience, know and perceive these realities and test them against relevant contemporary needs and necessities.

His needs and the necessities of the twenty-first century; what he experiences he will manifest into ***metaphors***.Making ***metaphors*** is an artistic skill causing linkage and seeing relationships : applying old experience to new circumstances. ***Seeing*** parallels and differences. Letting differences conjure complementarities and letting complementarities conjure yet other complementarities. One sees new solutions while applying old experiences. It is process that causes a primary experience which contains the basis of perceiving an essence.

(2.0)One teaches architecture in terms of other fields and thereby retrains student's ***metaphorical*** thinking. We can ask that the design studio utilize the lessons learned in engineering, three-dimensional design, history of architecture and construction. By

using the major high-credit-hour design studio to synthesize the commonalities and differences of support causes both learner and teacher receive information, skills and concepts to try assimilate them using a project's program.This requires an active attitude and commitment on the part of the student to ***experience*** and not just learn ***about*** these subjects. It is a tensional relationship between the various passive support courses to the active integrative laboratory. It is only when the student sees the reification of the support do they become relevant and by becoming relevant induce further curiosity. This two way characteristics where the ***metaphor*** carries-over, transforms and changes is no where betterexperienced than in architectural education. The student's architectural experience must include for himself what he or she designs for others; they must learn to:

1. **C**laim this time (so that other may enjoy this claim.)
2. **U**se (to design for users).
3. **B**uild (so that builders can use his drawings etc.).
4. **E**xperience (so that users can experience his ***metaphors***).
5. **C**ompose (so that others might read, perceive and appreciate)
6. **S**ense (so that others may sense his ***metaphor***).
7. **T**hink (to design for the thoughts of others).(Note: all seven first letters put together from the anagram ***CUBEC ST***. A three-dimensional street-raised to the third power)

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"

<u>Tradition and the metaphor:</u>

The instant our experiences are reified into a ***metaphor*** and can be perceived and utilized they become potential traditions which can be inherited, established or become customary patterns of thought, action or behavior (as a religious practice or a social customs). ***Metaphor*** can be the tradition which hands down information, beliefs, and customs by word of mouth or by example from one generation to another without written instruction. The work of architecture itself is endued by its' three-dimensional limits, bounds, space, factors, organization and features with social attitudes and institutionalized ideals. Gelernter's beliefs are those of ***traditionalist*** who are opposed to modernism, liberalism or radicalism. ***Traditionalist*** are those who wish to imbue educational curriculum with traditions. They look not to the ***function*** but to the form for its solutions to tomorrows problems. Traditions have their roots in the past.

(3.2)When we think of the past in ***metaphoric*** terms, we find it difficult to perceive how the reciprocal movement, the two-way relationship of the ***metaphor***, could be achieved. The past is closed to us; we cannot affect it... it is gone for ever. Yet its' ***metaphor*** lingers on. It is for us to use, perceive and negotiate. (3.2)***Metaphors*** at their best are reciprocal and a ***metaphor*** which begins with the past cannot be a very ***good*** one. (refer to (4.1)G.Dodds, ***good*** mimesis).

(3.2)"The future, however, is different. We cannot act in the future, but we can make it

be. The present may be said the condition the future, which is continually being modified by present action and therefore, will not conform to our vision of it which is abstract and can only embrace the possible. Typically, schools of architecture graduate skilled and cognitive beginners who are able to work in an architectural office and in a very short time learn how to [(2.0)]create sophisticated and thoroughly detailed building designs. Architectural educators should see themselves as part of a wider context than limited only to the school just as the development of the individual must look at the environment beyond the limits of the family. All and many are the influences that conditions and educate the architect. In our current societies, it is a combination of self-study, schooling work-place and mass-media which educate the student. In this way the work-place and not the school become that "***tradition***" while the school the phenomena which readies and prepares the student to exploit "***tradition***"

(3.2) Weiss, P., **"*The metaphorical process"***

(2.0) Gelernter, M.,"***Teaching design innovation through design traditions***"

(4.1) Dodds, G., "***On the place of Architectural Speculation***"

There may be other ways where students may be educated in so-called traditions,

classics, culture, heritage, restorations and landmark projects. These may be found in recasting the degrees and levels as graduate, undergraduate, bachelor, master, doctorate or associates degrees in science, arts or technology thereby reserving architecture for the general professional degree.

Teaching the technique of making ***architectural metaphors*** in the twenty-first century prepares students to both take a stand as a sovereign professional architect while being able to adopt to new roles and demands of the economic, political and commercial environments. One which can be characterized as ***metaphoric***, metamorphic, multi-lingual, multi and inter-national. Like the ***metaphor*** it includes, adapts, and welcomes aliens. Aliens and family transform and modify each other. The proposed architect is the one who not only experiences all these things but interprets them into a three-dimensional habitable environment. One which is composed by limits and boundaries and yet is in ***metaphor*** with its' context.

Bibliographic references:

1.0. Howard A. Ozman, and Samuel M.Craver, "***Philosophical Foundations of education"***, (2nd ed.), Charles E.Merril (1981)

2.0. Mark Gelernter (School of Architecture and Planning, University of Colarodo at Denver) "***Teaching design Innovation through Design Tradition",*** Proceedings of the 1988, Seventy-sixth Annual meeting of the Association of the Collegiate Schools of Architecture (ACSA)

3.0. "***Main currents in Modern thought***" Sept-Oct 1971 Vol. 28, # 1; Journal of the Center for Intergrative Education.

3.1. William J.Gordon, "***The metaphorical way of knowing***"

3.2. Paul Weiss, "***The metaphorical process***"

4.0. Journal of Architectural Education, Nov.1992, Vol.46, No.2, Journal of the Association of the Collegiate Schools of Architecture (ACSA).

4.1. George Dodds, "***On the Place of Architectural Speculation***"

5.0. M. Seuphor (1972 ? n.d.) "***Piet Mondrian, Life and Work***". H.N. Abrams Inc. New York. Abdulaziz Al-Saati, *"**Mondrian: Neo-Plasticism and its influences in Architecture***" :

6.0. Mehdi Nakosteen, "***The history and philosophy of education"***. Ronald Press, New York (1965).

Researched Publications: Refereed and Peer-reviewed Journals: *"**monographs":***

Barie Fez-Barringten; Associate professor Global University

1. "***Architecture the making of metaphors*****"** ©
Main Currents in Modern Thought/Center for Integrative Education; Sep.-Oct. 1971, Vol. 28 No.1, New Rochelle, New York.

2."***Schools and metaphors*****"**

Main Currents in Modern Thought/Center for Integrative Education Sep.-Oct. 1971, Vol. 28 No.1, New Rochelle, New York.

3."***User's metametaphoric phenomena of architecture and Music*":**
"METU" (Middle East Technical University: Ankara, Turkey): May 1995"
Journal of the Faculty of Architecture

4."***Metametaphors and Mondrian:***
Neo-plasticism and its' influences in architecture" 1993 Available on Academia.edu since 2008

5. "***The Metametaphor© of architectural education*",**
North Cypress, Turkish University. December, 1997

6.**"*Mosques and metaphors*"** Unpublished,1993

7."***The basis of the metaphor of Arabia***" Unpublished, 1994

8."***The conditions of Arabia in metaphor***" Unpublished, 1994

9. "***The metametaphor theorem***"
Architectural Scientific Journal, Vol. No. 8; 1994 Beirut Arab University**.**

10. "***Arabia's metaphoric images***" Unpublished, 1995

11."***The context of Arabia in metaphor***" Unpublished, 1995

12. "***A partial metaphoric vocabulary of Arabia***"
"Architecture: University of Technology in Datutop; February 1995 Finland

13."***The Aesthetics of the Arab architectural metaphor***"
"International Journal for Housing Science and its applications" Coral Gables, Florida.1993

14.***"Multi-dimensional metaphoric thinking"***
Open House, September 1997: Vol. 22; No. 3, United Kingdom: Newcastle uponTyne

15.***"Teaching the techniques of making architectural metaphors in the twenty-first century."***
Journal of King Abdul Aziz University Engg...Sciences; Jeddah: Code: BAR/223/0615:OCT.2.1421 H. 12TH EDITION; VOL. I and "Transactions" of Cardiff University, UK. April 2010

16. ***"Word Gram #9"*** *Permafrost*: Vol.31 Summer 2009 University of Alaska Fairbanks; ISSN: 0740-7890; page 197

17**.** "***Metaphors and Architecture."***© ArchNet.org. October, 2009.at MIT

18**. "Metaphor as an inference from sign"**;© University of Syracuse
Journal of Enterprise Architecture; November 2009: and nomnated architect of the year in speical issue of **Journal of Enterprise Architecture**.Explainging the unique relationship between enterprise and classic building architecture.

19. "**Framing the art vs. architecture argument**"; Brunel University (West London); BST: Vol. 9 no. 1: Body, Space & Technology Journal: Perspectives Section

20. "**Urban Passion"**: October 2010; Reconstruction & **"Creation";** June 2010; **by** C. Fez-Barringten; http://reconstruction.eserver.org/;

21. “**An architectural history of metaphors”:** ©AI & Society: (Journal of human-centered and machine intelligence) Journal of Knowledge, Culture and Communication: Pub: Springer; London; AI & Society located in University of Brighton, UK;
AI & Society. ISSN (Print) 1435-5655 - ISSN (Online) 0951-5666 : Published by Springer-Verlag;; 6 May 2010 http://www.springerlink.com/content/j2632623064r5ljk/
Paper copy: AIS Vol. 26.1. Feb. 2011; Online ISSN 1435-5655; Print ISSN 0951-5666; DOI 10.1007/s00146-010-0280-8; : **Volume 26, Issue 1 (2011), Page 103**.

22. “**Does Architecture Create Metaphors?;** G.Malek; Cambridge; August 8,2009
Pgs 3-12 (4/24/2010)

23. **“Imagery or Imagination”**:the role of metaphor in architecture:Ami Ran (based on Architecture:the making of metaphors); :and Illustration:”A Metaphor of Passion”:Architecture oif Israel 82.AI;August2010pgs.83-87.

24. “**The soverign built metaphor”** © monograph converted to Power Point for presentation to Southwest Florida Chapter of the American Institute of Architects. 2011

25.“**Architecture:the making of metaphors”**©The Book;
Cambridge Scholars Publishing
Published: Feb 2012
12 Back Chapman Street
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Lecture:
http://globaluniversity.academia.edu/BarieFezBarringten/Books/1449761/Architecture_The_Making_Of_Metaphors