15th Meeting of Heads of European Schools of Architecture

Improving learning quality
in architectural education environments

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IMPROVING LEARNING QUALITY in Architectural Educational Environments

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Constantin Spiridonidis
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15th Meeting of Heads of European Schools of Architecture

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Despite the attempt to transcribe with accuracy the debates from the workshop, the editors wish to apologise in advance for any inaccuracies of the interventions of individuals that could be attributed to the quality of recording.
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Constantin Spiridonidis and Maria Voyatzaki
Constantin Spiridonidis and Maria Voyatzaki

Improving Learning Quality in Architectural Education Environments
The enhancement of the quality of learning seems to be a necessary condition for the improvement of architectural education in challenging times, where there is an imperative demand to do more with less.

It is already considered as common ground among the contemporary debates on architectural education that the quality of learning has to remain the central axis of the strategic development of the academic profile of schools of Architecture. In the unstable, fluid and unpredictable political environment of the international economy we are experiencing nowadays, schools of architecture are facing significant changes in their finances, in the available human resources, in their existing infrastructure, a condition which directly affects their academic profile. To be adapted to this unstable, fluid, and unpredictable environment, schools of architecture have to reconsider their development strategies, to reform their curricula, to redefine the management of their technological infrastructure, to reconsider their policy on international contacts and collaborations, to consolidate programs delivering degrees and educational possibilities in order to be sustainable. However, the request of quality of the education offered by the institutions still is urgent and critical as the competition among schools of architecture becomes fiercer, emerging from the growing competition of the degrees schools offer in an increasingly difficult and competitive professional market. The enhancement of the quality of learning appears to be the immediate priority to this request.

We are speaking about quality of learning and not quality of teaching as through the former we can investigate a big number of parameters architectural education depends upon, beyond the teaching skills of the teacher and the efficiency of the implemented teaching method. Learning is a student-oriented concept, a competences-based reference and an outcome-centered consideration. Teaching is a teacher-oriented concept and an input-centered consideration of education. The quality of learning very often is dismissed in evaluation procedures, which primarily focus on the input than the output of teaching, and not on the overall quality of learning. The (re)definition of this quality is a purely academic issue and it is in the responsibility of schools of architecture to define and develop it collectively.

The main concept underlining the structure of the agenda of the 15th Meeting of Heads of European Schools of Architecture was the opportunity it offered to the participants of a creative, constructive and critical dialogue between different architectural education environments. This dialogue was expected to construct the necessary bridges and avenues for the exchange of ideas, information and educational attitudes and cultures related to the quality of learning. We examined the different strategies schools can implement in order to enhance the quality of learning through interventions in the curriculum structure, through programs of staff development, through definitions of criteria for staff and student recruitment, through the implementation of innovative teaching methods, through initiatives for inter-disciplinary and trans-disciplinary educational experiences. We expected that the event would provide the Schools of Architecture with ideas, proposals and directions emerging from the dialogue between those who have the responsibility for the management of the academic issues.

In order to better structure the debates, the meeting was organised upon four sessions each one raising the question of quality upon four fundamental parameters of architectural education: the curriculum, the teaching approach, the teacher and the student.
Introduction

The first session was entitled “Learning quality and curriculum structure” and its main theme was how the structure of the curriculum can affect the quality of learning. In this session the participants investigated possible curricula reforms, which could assure better conditions for learning. They were invited to examine the current trends of updating curricula taking into account the established values and contemporary concerns of architecture, the outcomes of avant-garde experimentations, the new advanced technological possibilities and the dynamics of the unstable market, and to estimate the impact they have on the quality of learning. Good practice examples that would be useful to be disseminated and implemented strategies, which successfully raised the quality of architectural education were invited for presentation and discussion. In this session the question of the architectural design studio as part of the curriculum was raised. The panel was invited to re-think the new role and position of the studio as a melting pot for learning and creativity. More specifically the question of inter-disciplinarity in architectural design studio was discussed as a decisive factor for architectural education and qualitative learning. The question of the relationship between curriculum structure, subject areas to be taught and pedagogical strategies to be implemented in order to assure a qualitative interdisciplinary learning was examined.

The second session was entitled “Learning quality and staff development and recruitment”. The basic hypothesis formulating the agenda of this session was that the quality of learning is directly depended upon the quality of teaching. The quality of the teacher is fundamental for the quality of the learning outcomes. The main issue raised in this session was the staff development strategies schools of architecture develop or shall develop in order to enhance the quality of the education they offer. In the context of this question the panel of this session examined the staff development practices in the contemporary crisis environment. Examined practices that can enhance the outcomes of the staff development initiatives of the schools, the specificities of the quality of learning oriented staff development and their impact on the new staff recruitment procedures and criteria. The session examined also the impact of student recruitment on the enhancement of the learning quality assured by an institution.

“Learning quality and teaching methods” was the theme of the third session. The teaching of architecture and more specifically the teaching of architectural design has been continuously discussed in our previous Meetings of Heads and these discussions appeared in the proceedings produced. However, in most of the cases in the past we tended to evaluate the teaching practices without having a clear way to evaluate the quality of learning reached and even more to evaluate the impact of this teaching in the overall learning quality achieved by the entire curriculum. The question raised by this session was if we are able to implement a ‘learning outcomes’ oriented teaching practices in architectural design; if we must reconsider our architectural design education practices and adapt them to an outcome education consideration. In parallel, we must redefine our evaluation methods, not focusing on the quality of the product-outcome but on the quality of learning assured by the educational process.

It is expected that the presentation of good practice examples on innovative teaching approaches of architectural design encouraged the audience’s quest to adhere to new values and references for the learning quality in contemporary architectural education.
The fourth session was entitled “Learning quality and students’ recruitment”. The quality of learning is strongly influenced by the profile of the students in a school of architecture. Which are the most significant characteristics of the profile of the student to be recruited in a school of architecture nowadays? Secondary education plays a significant role in the structure of the profile of the students recruited in higher education. Are there any possibilities for schools of architecture to ask secondary education to assure a number of competences, skills and knowledge, which could have a positive impact on the quality of learning in an architectural education environment? How can we formulate this claim? Are there any existing mechanisms in such a collaboration perspective? How can we detect the expected competences in the recruitment process? These were some of the questions addressed to the panel, which this time was composed by students of architecture from Greece, the United Kingdom and Germany. Students offered very interesting insights into the vivid and rich debate, the most significant aspects of which are presented in this volume.

With the closing session “Synthesis and conclusions” the Meeting rephrased the main points of all sessions and attempted a synthesis and a critical review of the contents of the Meeting.

The reader of this volume can find the texts of all the keynote addresses presented in the Meeting. It was for the first time that pedagogues were invited as keynote speakers to present their specialist’s viewpoints on the education of architectural design. With this volume the editors wish to offer to the participants of the Meeting as well as to the broader architectural education community material for further examination, reading and consultancy. As the transcription of the oral speeches into written texts is always a risky exercise, especially when it is made by another person, we kindly ask for the sympathy of participants in case that some of their ideas and thoughts were unintentionally distorted by the editing of this volume. To reduce this risk we have asked the persons participating in the panels to submit their presentations in written form in order to be accurate. However, unfortunately, not all of them responded to our claim. This can explain the inconsistencies between the realised program of the event and the contents of the sessions. We really hope that this volume will reflect the constructive atmosphere, the positive spirit, the collaborative attitude and the friendly mood in which this Meeting, as all the previous ones, developed. This atmosphere is a necessary factor for the sustainability of the event and for the impact of its work on the future of architectural education.
Inspirations
This lecture may sound contradictory at times, not because of the lack of information or the complexity thereof but rather because of a shift in linguistic meaning in the technological jargon today. Over the last few decades, words have changed meaning in such a way that the same word means something completed different from what it meant to mean a few years ago. For instance, consider the title of this lecture: digital culture. Even the phrase “digital culture” is a contradiction. On the one hand, culture can be defined as something entirely human that involves arts, literature, religion, or philosophy. It is the subjective realization, understanding, and expression of a group of humans at a particular time in history. It is about our thoughts, dreams, aspirations, and fears. On the other hand, digital is something that is objective, quantifiable, neutral and therefore non-subjective. So, from the very beginning we’re called upon to define the relationship between two antithetical terms, digital and culture. It is almost the same as trying to define what “subjective objectivity” means.

Given my Greek heritage, it may be appropriate to start with a myth, an ancient Greek myth which may illustrate metaphorically this contradiction. It is the myths of the Theseus’ ship or rather the paradox of Theseus’ ship. Theseus was a hero in the ancient Greek mythology that had done many great deeds, such as defending the people of Athens from monsters, daemons, and thieves, going down to the island of Crete and killing the Minotaur, saving people from disasters and famine, founding cities, and many more. Theseus did his heroic deeds by using his ship which he loved dearly. It was that ship that took him to foreign lands, let him escape from dangers, and opened new sailing paths for him. When he got old, he anchored his ship at the port of Athens. But the ship was made out of wood and over time it started to deteriorate. First, the sail fell off. So, Theseus ordered it to be replaced. Then the mast collapsed, only to be replaced immediately. Then the rows, the ropes, the flags, and then the hull fell apart. Eventually, at some point the entire ship was replaced with new parts and even though it looked the same, none of the original parts was present. And so, a question arises: which one is Theseus’ ship. The ship that he sees in front of him today or that ship that remains in his memory? Is that deck that he is walking on today the same deck than the one that he jumped on when he was fleeing from the Cretans years ago? Does the sail he sees today on the ship be the same sail that years ago caused his father’s death? Is that mast the same one he climbed to see his beloved Ariadne when he fell in love with her? Does it matter which one is the real one? Is it not what we see, touch, smell, hear, and taste the same thing as that which is in our minds? If we still use the same words to identify something, shouldn’t they mean the same thing? Or is there something deeper, something behind the visual appearances that contains a meaning that cannot be defined with words?

Design in the last few years has gone through a similar transformation. Words that were used as recently as twenty years ago today mean something entirely different if not antithetical. Technical terms that are used in design to convey a concept, a technique, or a process have changed in such a way that their meaning is completely different leading to confusions, misunderstandings, and misconceptions. Let us consider the process of design as a sequence of actions: starting with an inspiration, followed by a sketch, a blueprint, a model which is then rendered and finally presented to convey the original thought. So, we can say with a certain degree of certainty that even today the process of design has a starting point into the world of ideas and is progressively materialized into a more specific form that is then sent for implementation. Let us define these stages using the following words: inspiration, modeling, rendering, and presentation. So, within this paradigm, design starts with an idea, a concept, an
inspiration that initiates the process. Then the designer needs to make the idea more specific by using a pencil and paper to sketch out the main form. Then more details are added in order to produce a working model. Next, the designer is in a position to render the model in the order to convey the material and formal qualities. However, in the world of design today the process of modeling has been enhanced and to a certain degree replaced by computer programs such as autoCAD, Rhino, or Maya. Let me explain what I mean by the term “replace”: by using computer programs the designer gets results that are often unintentional, unpredictable, and unexplained and when that happens a black box is set between intention and action. What used to be done manually using paper and pencil has been distanced by using a mouse and a virtual screen. Moreover, the process of producing a model has been enhanced, corrected, altered, and modified often with no direct control by the user of the software. This causes a great problem in the design process because for the first time the user becomes unaware of the behavior of the tools. While such discrepancies of tools may have been encountered before such as spills, breaks, or scratches of brushes, now the result is mostly intelligent. Computer tools produce results that, when viewed by the designer, appear to be intelligent. Yet, while some of that intelligence may be credited to the developers of the software, there are increasingly more cases where even the developers are also unaware of the intelligence of the results of their own software. The lack of human control in the process of intelligent behavior is problematic. I will try to demonstrate this problem in the remaining of this lecture. Let's start with some obvious and easy to understand examples: Rendering used to be a manual tedious process involving artistic skills, perspective geometry, painting, and occasionally, collage, not to mention being time consuming and expensive. Today, computer programs such as V Ray, Renderzone, or Maxwell provide virtual reality representations that often exceed the real not only in the accuracy of depiction but also in their ability to extend reality into artificial, illusory, and fantastic worlds. Meanwhile, the speed, efficiency, and cost of such rendering mechanisms are far distanced from their original manual process. Further, the techniques, processes, and methods of presentation of models has also altered so much from the world of manual presentation so that the terms used today serve no help in demoting what really is happening and are therefore confusing and misleading. For example, there is little if nothing photographic about Photoshop and the word Illustrator offers no connection to the profession of an illustrator at
least as it is remembered some twenty years ago. Similarly, Rhino, Grasshopper, Maya, or max are part of a nomenclature that provides very little to address, define, and explain the logic, structure, and potential of digital systems.

Consider the image above. The object on the left side is the result of a device called a laser cutter. This device uses a laser beam to make precise incisions on paper or balsa wood. Twenty years ago, if a student presented me with such a model I would have immediately praised that person. It would have meant that this student would have possessed amazing abilities of precision, patience, dexterity, agility and perhaps innovativeness in order to accomplish it at such a level of perfection. Today, if a student comes to me with such a model I would not be impressed at all. In fact, some professors that are not aware of this potentially deceptive situation praise the students to which they gladly accept the praise. Similarly, the object on the left is a 3D print and not a traditional sculpture. Twenty years ago this would be a true exhibition of talent, adeptness, elegance, and self discipline. Not anymore. The distance between the artist’s hands and the object of his or her artifact has been permanently and irreversibly distanced if not severed. Let me be more specific. Consider a painting such as the one shown below.

Is it really a painting? Or simply the application of Photoshop filters upon a digitized photograph? Eighty years ago such a painting may have altered the history of art, initiating a period of art referred to as impressionism, not to mention the price of such a piece of art, perhaps, invaluable. Today it is just one of the many filters of Photoshop, this one perhaps appropriately named “impressionistic”. The list goes on and on. From makeup photographs that depict an impossible reality to renderings of imaginary places that become indistinguishable from real places. The reverse is also true. Consider the following picture.

Is this a computer graphics image or a real city? Is it a series of copy and paste that goes on and on until the end of the virtual landscape or actual houses where people live? The answer is that this is a real city. It exists in the real world. Actually, it is a development of about 10,000 low income houses in Ixtapaluca, a suburb of Mexico City. The question here is whether reality itself has been affected by virtual reality instead of the other way around. In other words, did the digital process of copy and paste had an effect in the design of the housing project and consequently in our understanding of reality? Or is that our understanding of reality incorporates digital elements to such a degree that it has become part of our every day interpretations either conscious or unconscious.
This may sound like the chicken and egg problem. In other words, is it the chicken that made the egg or is the egg that made the chicken? Or to paraphrase a bit, is it reality that makes the digital or is it the digital that makes reality. Despite its banal trivialization, it is a very important problem because it addresses the mystery of creation and visual appearances. Perhaps, there is an answer to this problem that may be offered to us as a possible and interesting solution: perhaps, the problem exists in the first place because of confusion in distinguishing reality from appearance. What if the chicken does not exists? What if the chicken is simply a cover up, a disguise, a technique that the egg employs to make more eggs? This possibility may not be as crazy as it may seem at first glance if we redefine the concept of reality. In Platonic terms, real is that which does not change. So, if a chicken is changing in the way it appears due to time, character, behavior, quality, deterioration, or other physical idiosyncrasies, then according to Plato it is not real. On the other hand, the idea of an egg as a means for procreation is constant and does not change over time and space. So, perhaps, it is the only real thing in the chicken-egg paradox. The same is true for other relationships of a phenotype-genotype nature. Just because we can see, hear, taste, smell, or touch something that does not define necessarily something as real despite the conviction due to sensual witnessing. What something really is, may not be found in its appearance but rather behind it in a much deeper level that one may not be aware of, and yet, that constant notion is the real essence of that something. Enjoying form without questioning would only be “philosophically irresponsible”.

As a consequence, words in the vocabulary of the designer today have changed meaning, especially with the emerging application of computational methods. Most of the terms have been replaced by computational counterparts and we should probably take that as a sign that something is happening in the world of design, something very important, fundamental, and profound that may have strong influences and repercussions. From Photoshop filters to modeling applications and from simulation programs to virtual reality animation and even
more mundane tasks that used to need a certain talent to take on, such as rendering, paper cutting, or 3D printing/sculpting the list of tasks diminishes day by day being replaced by their computational counterparts. What used to be a basis to judge somebody as a talent or a genius is no more applicable. Dexterity, adeptness, memorization, fast calculation, or aptitude is not anymore skills to seek for in a designer or reasons to admire in a designer as to be called a genius. The focus has shifted far away from what it used to be towards new territories. In the process many take advantage of the ephemeral awe that the new computational tools bring to design by using them as means to establish a new concept or form only to be revealed later that their power was based on the tool they used and not their own intellectual ability. After all, the tool was developed by somebody else, the programmer, who, perhaps, should be considered the innovator if not the genius.

As a result of the use and abuse of design tools many have started to worry about the direction that design will take in the next years. As one-by-one all design tasks are becoming computational some regard this as a danger, misfortune, or in-appropriation of what design should be and others as a liberation, freedom, and power towards what design should be: i.e. conceptualization. According to the second group, the designer does not need to worry anymore about the construction documents, schedules, databases, modeling, rendering, animation, etc. and can now concentrate on what is most important: the concept. But what if that is also replaced? What if one day a new piece of software appears that allows one to input the building program and it produces valid designs, i.e. plan, elevation, sections that work. And, worse, what if they are better than the designer would ever do by himself or herself. Even though most designers would never admit that something is better than what they would have designed, yet what if deep inside them they admit the opposite. What then? Are we still going to continue demonizing the computer and seeking to promote geniuses when they really don’t exist? Or should we reconsider our knowledge, terms, concepts, processes, and methodologies and seek for new answers rather than old reassurances?

In this context, as a scholar, I set out to inquire into these matters in a serious manner. Increasingly, I became aware of the possibility that something paradigmatic is emerging in the world of design through my computational research as a professor and a practitioner. As a small contribution, I ended up writing numerous experimental software programs, papers, and published three books:

The first book is titled Expressive Form: A Conceptual Approach to Computational Design by Spon Press and was published in September of 2003 and with a foreword by the late Bill Mitchell. It is about the notion of expressiveness in architecture through the use of computational and computer-based methods. In this book I tried to offers computational directions, which combine theoretical questions with practical implementation. The notions of exaggeration, hybridization, kinesis, algorithm, fold, and warp are being investigated in the light of their computational and formal value. Each notion is examined from different points of view, that is, historical, mathematical, or philosophical. The aim of the book was to provide a conceptual basis for computer aided-design but remove the treatment of the subject away from the promotion of certain software packages or modeling approaches, and also away from the more hyperbolic and woolly texts that deal with the impact of digitalization on architecture and contemporary life.

The second book was titled Algorithmic Architecture and was published by Architectural Press/Elsevier in June 2006. It provided an ontological investigation into terms, concepts, and proc-
esses involved in algorithmic architecture and set a theoretical framework for design implementations. The structure of the book did not follow a traditional theory-based philosophical book format. It was not a computer programming/language tutorial book either. Even though there were a series of design work illustrated, it was not a design/graphics art book per se. Following the tradition of architecture as a conglomeration of various design fields, engineer-
Inspirations

ing, theory, art, and recently computation, the challenge of the book was to present a concept that, like architecture, is a unifying theme for many diverse disciplines. An algorithm is not only a computer implementation, lines of code in a program, or a language, but also a theoretical construct with deep philosophical, social, design, and artistic repercussions. Consequently, the book presented many, various, and often seemingly disparate points of view that led to the establishment of one common theme which was the title of the book.

The third book was titled Algorithms for Visual Design and is published by Wiley in 2009. It offered a series of methods in the form of algorithms that addressed new concepts in digital design in a way that is applicable, generalized, and inspirational. Questions such as: how do I create an ordered composition using random patterns, how do I create a hybrid form that resembles two other forms, why is it that some patterns express self-similarity, or how is that certain processes even though random behave as self-organizing aggregation? The book offered a series of generic procedures that can function as building blocks for designers to experiment, explore, or channel their thoughts, ideas, and principles into potential solutions. The computer language used is a new, open source, and easy-to-use language called processing used quite extensively in the visual arts in the last few years. The algorithms and techniques are quite advanced and offer not only the means to construct new algorithms but also function as a way of understanding the complexity involved in today’s design problems. I don’t think that the content of the book will change much over the next years given that class structures, algorithms, and theories remain quite constant at least in the computational field.

Then, a series of events were initiated under the title “Critical Digital”. Critical Digital was an idea originally conceived by Doctoral students under my supervision when I first arrived at Harvard’s University Graduate School of Design in 2004. We started the idea of organizing events as a means to address the various and diverse issues raised from the digitalization of architecture. Our efforts led to a series of symposia held at the GSD in 2005, 2006 and 2007. In 2008, some of the students in the Doctor of Design program took on the idea and developed it into the form of a wiki-conference called “What Matter(s)?” It was a great success! In 2009, this effort led to a second conference called “Who Care(s)?”
It is important to point out here that these were not conferences in the traditional sense of a
descriptive event often self-congratulatory, but a dialogue, a challenge, and a struggle aimed
at questioning what is rapidly becoming the de facto mainstream. What is digital? Why should
design be (or not be) digital? How have practitioners and schools been using digital media?
We were not concerned with the “how” question but rather with the “why” question? Why

It was clear to us then, as it is now, that we are and will be dependent on computational
technology both in practice as well as academia. This fact ought to raise critical questions not
only about the mundane use of computational technology in studio, competitions, or in the
building process itself but also more deep and profound questions of identity, authenticity,
or responsibility at least on the side of the designer. The question is who the designer is today
and how important are one’s own ideas versus the techniques provided in an increasingly
digitally dominated world? It may be claimed that the use of computational technologies
in design, as well as in everyday activities, has deep and profound consequences not only in
the way thoughts and ideas are conceived, understood, and communicated but also in their
intrinsic value and validity. Is it possible to design without a computer today? Is it that digital
techniques have become determinant conditions, perhaps hidden, upon which the designers,
practitioners, or critics base their ideas, thoughts, or even ideologies? How important is
for designers to know the mechanisms of software or hardware and therefore the limits that
these technologies impose on design and does that even matter anymore?

The theme of the first conference was “What Matter(s)?” What matter(s) in terms of work,
process, and thought? What is the nature of virtuality, ephemerality, continuity, materiality,
or ubiquity which while originally invented to explain digital or computational phenomena,
are utilized today in the context of a traditionally still material-based design? Is materiality
subject to abstract digital concepts? Is the digital buildable? What matters?

In the same exploratory spirit, the theme of the second conference was “Who Cares(?)”. There
the question raised was to identify who the designer is today and how important are one’s own
ideas versus the techniques provided in an increasingly digital dominated world? Is it possible to design without a computer today? Is it that digital techniques have become determinant conditions, perhaps hidden, upon which the designers, practitioners, or critics base their ideas, thoughts, or even ideologies? How important is for designers to know the mechanisms of software or hardware and therefore the limits that these technologies impose on design and does that even matter anymore? Who can take a position about this situation? Who cares enough to question the mainstream?

As an epitome of all this theoretical and critical investigations, I embarked on a series of prototypical design projects in order to explore, experiment, and verify the practicality of these theories. The first series of projects are based on the concept of hybridization (also known as morphing). This was the topic of my Master’s thesis back in 1989. Basically, morphing is a visual process in which an object changes its form gradually in order to obtain another form. In other words, morphing is a gradual transition that results in a marked change in the form’s appearance, character, condition, or function. The operation of morphing consists basically of the selection of at least two objects and the assignment a number of in-between transitional steps. The first object then transforms into the second in steps. The essence of such a transformation is not that much in the destination form but rather in the intermediate phases these transformations pass through, as well as, in the extrapolations, which go beyond the final form. Morphing is about the transitional continuity of a form that progresses through a series of evolutionary stages.

*Horizontal sections (left) of a 50-story residential high-rise (right)*
Another area of experimentation is that of stochastic search. Here, with the term “stochastic search” I mean a random search in space until a given condition or set of conditions is met. Let me give you an example: the placement of toys in a playpen so that each toy does not overlap each other and they all fit within the limits of the playpen can be addressed with a stochastic search. This slide shows a stochastic search in 3D space where overlap is permitted and required. Now, stochastic search can also be seen as a method for generating designs of buildings.

Here, a series of conditions are set and the building’s program grows until the conditions are met. As you may notice, each floor has a different plan, similar to a tree, because every apartment occupant had set different conditions. Compare that with modern time buildings where each occupant is assumed to be very alike if not identical.
Another algorithm is that of cellular automata. An automaton is a self-acting element and “cellular” refers to the accumulation of many automata into a group. These accumulations are usually arranged along a grid. So one cell like the black one shown in the image below, can do something that may affect its neighbor shown here in gray. What is interesting about cellular automata is the emergence of unpredictable behavior of the whole when each automaton does something within its own local domain. What I mean by that each local behavior contributes to a global behavior that is not always predictable.

Let’s take an example: suppose that we start with a grid of randomly assigned black or white cells. Then we set the following rule for every cell: look around you: if all black neighbors are exactly 3 then become black otherwise if all black neighbors are greater or equal to 5 become white. Now, such a rule while simple on the individual cell’s level produces a far more complex behavior if applied repeatedly to the whole. See the result for 50 iterations:

The result is a pattern that resembles a maze. It can be used to create a hypothetical mind game of finding a path from A to B. In other words, the local behaviors resulted in a global
behavior that appears to have a purposeful existence when obviously it does not. I assume here that purpose is a unique privilege of the living organisms. Now, while this is a simplistic version used for presentation purposes, more complex rules can be devised to reflect design conditions that may result into a more complex building pattern. For example, the number of rooms, their connections, access, view, gravity, energy, price, etc. can be used as rules that will affect the overall pattern of random blocks as shown in the slide below.
Another algorithm that I experimented with was a genetic algorithm. A genetic algorithm is also a stochastic process where guesses is tested as a genetic code using crossover and mutations repeatedly over large populations. A series of architectural projects were developed on that concept one of which is shown here. Taro Narahara, one of our Doctoral students developed the underlying algorithm for this project. I will not go into the details of genetic algorithms; it suffice to say that if you are interested please take a look into either one of my books “Algorithms for Visual design” for technical assistance or “Algorithmic Architecture” for implementations.

Again, all these projects were interesting yet not fulfilling. All projects were fun, I was using software, I had a theory, I was being appreciated by students, many people liked them, they were published in magazines, but they didn’t really satisfy me. Because there was something about this works that I was not happy with. I did not see an egg, only a chicken in this work. It was always superficial, looking nice and skin deep. I want to go beyond the obvious, get deeper into the true nature of computation. So, I developed a theory that I think that is an interesting one but nonetheless can be also viewed as an antihuman theory of design. In the sense that it takes away from you anything that is related to your intentions, ideas, or decision and replaces it with a completely random set of events; and that randomness strangely enough does not result into chaos but instead into a very interesting order.

However, it may be that the above dilemma is important only because we are still considering design in terms of an old paradigm, that based on human intelligence and initiative. Is it possible that this paradigm is not valid any more. Is it possible that design is more than just a human activity and as such can be performed by non humans? Let me illustrate what I mean with a few examples: if I, as a designer, want to draw a dot on a piece of paper, most likely what a person would do would be to take a pen or a pencil and lower it on the canvas marking a dot. But the process involves apart from mechanical actions, a intellectual determination of the process of lowering the arm and pointing. Strangely enough even though, at first sight, the process appears to be random most of the process is predetermined in the brain as the hands move down. The process can be said to be similar when using a digital tool instead of a pencil. Suppose you are faces with a canvas in Photoshop and you select a pen and then move the cursor on the screen until you press down on the screen leaving a mark. I see little difference in that and the physical process. Now, consider the following commands on a computer system: \( x = 20, \ y = 30, \) and point\((x, y)\). This will draw a point at location 20, 30. Replace now these commands with the following \( x = \text{random}(0,100), \ y = \text{random}(0,100), \) and point\((x, y)\). I assume that the canvas is 100x100 pixels wide. Also, I assume that a command called \( \text{random}(\text{min}, \text{max}) \) exists that can produce and unpredictable to me number within a range set between min and max. Now, there is a lack of control/prediction of where a dot will show up. I know that I will see a dot but it is almost impossible to predict its location in advance. Consider also the following commands: \( x = \text{random}(0,100), \ y = \text{random}(0,100), \) and if \( x > 50 \) and \( y < 50 \) then point\((x, y)\). Now, I am not only uncertain about the location of a dot on the canvas but I am not even sure if I will see a dot at all. That is, in the case \( x \leq 50 \) then point() will not be activated. You may start to distinguish a difference between the human world and the computationally driven random world. There is a thin blue line that separates the two. The first, is the human world with its intentions, mistakes, aspirations, etc. a world we have been familiar with for over thousands of years. The second world is new, non human, encountered for the first time; alien and strange. Please cross the line between predictable and unpredictable.
Now let's implement this theory using a simple human task, that of solving a puzzle. Suppose that you are presented with a puzzle composed of ten pieces that eventually fits into a rectangular canvas. Any human, consider for example a child, will start by selecting the first piece placing in the canvas, then the next one and place it, then the next and so on until either all pieces match or in case there is a impasse, take out a piece or two and rearrange until a match is found. This process may take a few seconds or minutes depending on the complexity of the puzzle or the capabilities of the solver and it is considered as a task of human intelligence, or intelligence in general. Now consider the following possibility. I take the pieces of the puzzle and toss them in the air, let them fall and hope that a match is found. If it does not work I do it again; and again; and again. Over and over; hoping for a match. What are the chances that a match will occur? Most people will say impossible. And yet simple logic may reveal that while a match in unlikely to come soon yet, there is a very small chance that it may occur. Given enough time there is a possibility, once in a billion perhaps, that it will happen. However, nobody will try this method mainly because there is no time to wait. But with a computer such logic starts to be applicable. A billion for example is not such a big number. Think of GHz: those are billions of cycles per second. So, let's try this process through a simulation shown to you in the screen. In the first trial it took 1252 unsuccessful attempts to get a match, taking virtually only two seconds. Next time it took 2619 unsuccessful attempts until a perfect match occurred. So, if you were to choose between the two methods you are faced with the following dilemma: should I employ my intelligence and take several minutes to solve the problem or use a mindless chance mechanism and solve the same problem in just a few seconds? To some people this is a very fundamental question.

Here is another related problem: how many possible ways can we solve this puzzle? Is there infinite ways or is there a specific number of possible permutations? Let's take a set of 9 positions arranges in a 3x3 grid and assume that each position can be either black or white. What are the chances that a cross configuration will occur? In fact, the pattern we are looking for (when laid out) is 010111010, assuming that 1 represents a black box as shown in the patterns below. One way to find out is to start doing random configurations until we get a match. But that may involve repeated patterns and it may take redundantly more time than by using a different method. The second method uses a simple enumeration of permutations starting with a 000000000, then 000000001, then 000000010, and so on. The pattern we are looking for, that is 010111010, will occur somewhere between 000000000 and 111111111. All possible combinations are 512, or 2^9. The pattern we are looking for comes after 325 attempts (depending on the method of enumeration).

Now in design, although not the same, we have a similar process. In design, and, in particular, architectural design, the problem that a designer is called upon to solve can be regarded as a problem of permutations, that is, the rearrangement of design elements within a set of discrete positions, such as a grid, until a solution is found that satisfies a set of criteria. Traditionally, such arrangements are done by human designers that base their decision making either on intuition (from the point of view of the designer) or on random sampling until valid solutions are found. However, in both cases the solution found may be an acceptable one but cannot be labeled as “the best possible solution” due to the subjective or arbitrary nature of the selection process. In contrast, an exhaustive list of permutation-based arrangement will eventually reveal the “best solution” since it will exclude all other possible solutions. For example consider the design of simple bathroom in an architectural plan consisting of four fixtures: a sink, a toilet, a
All 512 possible permutations of nine boxes arranged in a 3x3 grid.

All the possible arrangements of a simple four-feature bathroom (a). These non-repetitive, rotationally-specific arrangements are 384. However, after eliminating all arrangements that have a toilet seat facing a door and eliminating any arrangement that uses more than 6m of pipelines (i.e. choosing the least expensive ones) the number of successful bathrooms is only 8 (b).
Inspirations

shower, and a door arranged in a 2x2 grid. The slide (below) illustrates all possible arrangements of such a simple four-fixture bathroom. The number of non-repetitive, rotationally-specific arrangements is only 384. However, after eliminating all arrangements that have a toilet seat facing a door and eliminating any arrangement that uses more than 6 meters of pipelines (i.e. choosing the least expensive ones) the number of successful bathrooms is only 8. It can be claimed therefore that these eight bathroom configurations are indeed the best possible ones since they exclude anything else. Of course, we may have to redefine the term “best” and apply it only to quantitative criteria and pertinent only to the number of possible permutations. In other words, given the number of all possible permutations, the resulting 8 are the ones that satisfy our constraining criteria and are therefore considered to be the best.

Let’s now look at another example. Consider a sample architectural problem, relatively simple for the time and size of this lecture. I will try to demonstrate the use of permutations as a method for the automatic generation of building plans. In this case, consider a site (b) that is divided into a grid system (a). Let’s also consider a list of spaces to be placed within the limits of the site (c) and an adjacency matrix to determine the placement conditions and neighboring relations of these spaces (d). One way of solving this problem is to stochastically place spaces within the grid until all spaces are fit and the constraints are satisfied. The slide (below) shows such a problem and a sample solution (f).

A site (b) that is divided into a grid system (a), a list of spaces to be placed within the limits of the site (c) and an adjacency matrix to determine the placement conditions and neighboring relations of these spaces (d). A sample solution is shown in (f).
So, let's run this algorithm and see the results. As you can see after 274 random attempts a solutions is found. If we do it again, another solution is obtained and so on. According to this algorithm, each space is associated to a list that contains all other spaces sorted according to their degree of desirable neighborhood. Then each unit of each space is selected from the list and then one-by-one placed randomly in the site until they fit in the site and the neighboring conditions are met. If it fails then the process is repeated. Since the total number of units of all spaces is equal to the site's grid units, there will always be a fit. To illustrate the point, in (a) nine randomly generated plans are shown as a result of this algorithm. Then each plan is extruded into an architectural structure (b) to be potentially stacked into floors. While the algorithm can generate many different solutions, as shown in (d) my research will seek to produce all possible solutions, that is, all possible permutations. If that happens, then we can select from the exhausted permutation list the ones that best fit the programmatic, economic, ecological, aesthetic or other criteria of the client.

Three stochastically generated plans that fulfill the requirements of the architectural program (a). These plans were then extruded (b), and stacked into a building (c). In contrast, (d) shows a portion of what all possible solutions would look like.
While the previous example is quite simplistic compared to the number of possible arrangements involved in an actual architectural design, nevertheless it illustrates the potential of a system of permutations and presents a different way of approaching architectural design. As I mentioned earlier, the speculation of this work is to detect, test, and implement the use of exhaustive permutations as a means of synthesis for architectural plans of buildings. Such an effort involves the risk of increased complexity as the numbers of permutations increase exponentially. While the number of all possible permutations can be pre-estimated using polynomial theory, the actual production of these arrangements may involve algorithms that are np-complete, that is, possible to solve but would require extremely long time to execute. As an alternative, optimization techniques and, ultimately, brute force techniques can be used instead but, of course, those would depend on the computational power of the computers used.

Another example of architectural permutations was developed by Shohei Matsukawa and this author. This set involved 3D spatial arrangements of walls, openings, and voids in a two story single family house. The series of permutations were evaluated on the basis of orientation, position in the site, program, connectivity matrix, and price of materials. The results are shown below:

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Permutations of a two floor single family home with six rooms.
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I would like conclude now with a few arguments based on the lecture so far. The computer is not a tool only. It is much more than that. It is an intellectual entity and as such can simulate human thinking producing inferior, similar, or even superior results to those of a human mind. Some people do not like that comparison and perhaps there is a merit in that assessment. So, perhaps a better way to describe the computer is that of complementary, alien, or different.
Perhaps it is has different way of thinking, a new way, a strange way. I would like to believe that it is complementary in the sense that it can address many of the things we cannot, or better, do not have enough time to deal with.

This brings up the next point; that of the human mind. I am afraid that it is limited. Whether we like it, believe it, or accept it, it is true. Factually true. If you do not believe me try dividing 22 by 7. Or try to plot all the connections on a social network. Or think of architectural complexity in a skyscraper. We are not as smart as we think. Yet, honestly, I do not want to be too smart, I do not want to learn everything, do everything. But I would like to know that one day I can break out of that limited world and do something more. Not alone but with help. Well, that is what the computer is: a ticket to that world. It is not a device that replicates what you already know. That would be redundant and useless. That would simply be like re-inventing the wheel. Unfortunately, that is what some designers do. Many think that computers are screens that replace light rays with pixels. I would like to suggest doing things that you cannot do or think in this world. Try to reach areas of intellectual capacity that you do not have but can obtain through a computer. Try to involve them to do things better than you can do yourself. Especially, when it comes to random processing where you can have things happen that you cannot even predict. That is the true essence of what a computer is. We should stop this whole idea that computers are inferior to human intellect as if there is some sort of a competition going on so as to prove to our colleagues that we are superior to the machine. It is ridiculous and should not even be happening.

Finally, I would like to offer an experiment that was establish as a test of intelligence and referred to as the Turing test. According to the experiment, if something, no matter what it is made out of, behaves convincingly as intelligent, then it is so. By definition. So, if a computer offers you a solution that involves an awe of intelligence may be that is the case. In the original experiment, which is a theoritical one so far, a human converses with an entity that is hidden on the other side of a parapet without knowing whether it is another human, a computer, or something else. The point of the experiment is to detach the eyes from the form or connotation that is usually associated with intelligent beings; those could be non-human provided they pass the test. You do not know what you are talking to: it could be a human or a computer. You cannot see it. You cannot be influenced by the form, shape, or voice of your interlocutor. If intelligence is what you are seeking for then its container should be irrelevant.

So that being said I would like to offer a concluding remark: there is something remarkable going on and digital culture is emerging as a new prism of looking at the world asking us to redefine almost all of our established terms. This may be the biggest opportunity ever in the history of humanity so please do not miss it.
Dimitris K. Mavroskoufis
Greece

Teaching and Learning in Higher Education
The Master said:

“To be fond of something is better than merely to know it,
and to find joy in it is better than to be fond of it”.

Confucius

Impact of Globalization on the Character of Universities

In the context of the “new political economy” of Higher Education, “good teaching” is recognized as a very important academic function, while the amateurism in teaching is no longer tolerated. Thus, the establishment of special centers for teaching and staff developing, for promoting research on the so-called “University Teaching”, and for establishing friendly teaching and learning environments was financed in many universities. The massification of higher education, the growing diversity of student population, and the competition between institutions puts pressure in the same direction (Biggs & Tange, 2007:2-3).

Given the importance of education in the lives of individuals and the progress of societies, university teachers’ response to new requirements is often presented as a dilemma: university teaching will either continue to follow the traditional, largely ineffective ways, or will try innovative practices to improve the quality of teaching and learning (Fink, 2003:1-3). However, the changes of instructional paradigm are often limited in shaping styles and techniques that are not capable of effective university teaching (Clark, 1995; Collis, 1998; Friesen & Kristjanson, 2007). In this light, it is estimated that the most common form of teaching, the lecture, especially in large audiences, has limited potential to help students, as it is illustrated in the following comparative table (Biggs & Tange, 2007:2; Fink, 2003:16-22):

<table>
<thead>
<tr>
<th>Field</th>
<th>Traditional Instructional Paradigm</th>
<th>New Instructional Paradigm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aim</td>
<td>Improving the quality of teaching</td>
<td>Improving the quality of learning</td>
</tr>
<tr>
<td>Criteria</td>
<td>Quality of imported students</td>
<td>Quality of graduates</td>
</tr>
<tr>
<td>Instructional Structures</td>
<td>Adequate coverage of material</td>
<td>Specific learning outcomes</td>
</tr>
<tr>
<td>Learning Theory</td>
<td>Linear – commutative perception of learning</td>
<td>Learning as a result of interaction frames</td>
</tr>
<tr>
<td>Teacher’s Role</td>
<td>Design of courses and delivery of training</td>
<td>Design of strategies and of learning environments</td>
</tr>
</tbody>
</table>

As learning experiences important for students are now identified those which are concerned with both the processes and the products of learning. Criteria for the first are the high degree of motivation of the audience during the teaching and active participation in learning, while for the latter the value for the personal lives of students, for their work, for their involvement
in the community, etc., as well as the achievement of remarkable changes in their attitudes and in modes of thinking (Fink, 2003:6-7 & 31-33). Indeed, many universities are showing more interest to centers or institutes not on the design of instruction but on the results of learning, that their students gain significant learning experiences (Barr & Tagg, 1995).

Of course, changes in this direction are provided with a general change in the culture of university and, naturally, changes in attitudes and practices of the staff. It is argued that a modern university must tend to create “communities of learning, dialogue, research, and practice” (Pardales & Girod, 2006; Ponger, 2005), such as the community set up by Richard Paul in California (The Center of Critical Thinking, available at: http://www.criticalthinking.org) or by James Bell in Maryland (Howard Community College: Improving Student Learning and College Teaching, available at: http://www.howardcc.edu).

In this context, the following basic principles are recommended (Clark, 1995; Eisenkraft, 2003; Friesen & Kristjanson, 2007):

1) The selection of appropriate content and topics, to be able to encourage independent critical thinking, to expand the knowledge of students, and to help them cultivate skills relevant to the teaching subject.

2) The good preparation and organization of courses (aims, themes, charts, extensions, connections to other subjects, summaries, etc.).

3) The clear explanations of concepts and principles with concrete examples and with emphasis on difficult points.

4) The appropriate use of speech and intonation, as well as of signs of non-verbal communication.

5) The demonstration of enthusiasm for teaching and the development of topics that can stimulate students’ interest (e.g. practical applications).

6) The encouragement of class participation (e.g. provision of time for questions and comments, positive reinforcement, formulating provocative questions).

7) The demonstration of interest and sympathy in and out of the classroom (e.g. discussion of students’ ideas, questions or hobbies, tolerance to errors).

8) The provision for fair and frequent communication (e.g. feedback with constructive comments, brief correction of written essays, clarity of assessment, etc.).

Key Issues: Transformative and Creative Learning

Transformative Learning has its origins in the positions of John Dewey to link education with democracy and the moral dimension of individuals and societies (Dewey, 1916). But, for this to be achieved, it is necessary to have students prepared to develop high-level critical thinking skills, to capture the ability for multiple views and interpretations, to be open to the different, to actively participate in pluralistic democracy, and to have social, moral and ecological sensibilities (Nagda et. al., 2003). Thus, students will be able based on organizational structures (building blocks) of their experiences to implement a dynamic model of transfer of learning (Rebello & Zollman, 2005). This model constitutes a meaningful act if it requires not only the motivation of a cognitive system of the learners to cope with new tasks in new situations, but also active
and conscious engagement in reflective learning (Mezirow, 1991; Perkins & Salomon, 1992). Through critical consciousness, therefore, learning can become “transformative” and, through dialogue with others, be translated into practice of self-awareness and of personal development and empowerment (Merriam & Heuer, 1995).

Towards this direction, it is suggested that strategies and techniques such as the following can be effective (James, 2006; Nagda et al, 2003):

- Creation of learning expectations
- Consistency of information or data
- Simulation
- Role playing
- Modeling
- Problem-based learning
- Parallel problem solving
- Application of theoretical knowledge into practice
- Conceptual generalization
- Use of ratios and metaphors
- Metacognitive reflection
- Structured dialogue in small groups.

So, the highest level of learning is the “transformative learning”, which, however, to be such must meet the following conditions (Deakin Crick, 2005):

- Self-awareness
- Application of acquired knowledge in order to create new meanings
- Capacity development of critical vigilance
- Cultivation of creativity
- Developing of interactive learning relationships
- Changing strategic perceptions of knowledge and the world
- Strengthening a sense of interdependence and social solidarity.

Creativity, in turn, is a complex construct and it is most commonly expressed through a broad range of intelligences including linguistic, musical, mathematical, spatial, kinesthetic, interpersonal, and perhaps even intrapersonal. Torrance (1962) defined creativity as “the process of sensing gaps or disturbing, missing elements; forming ideas or hypotheses concerning them; testing these hypotheses; and communicating the results, possibly modifying and retesting the hypotheses”. Dass (2004) pointed out that these components of creativity are the usual features of a scientific activity. To promote creativity in university classrooms, he cited the following strategies (cf. Donnelly, 2004; Ramirez & Ganaden, 2008):
Inspirations

- Divergent thinking
- Open-ended questioning
- Consideration of alternative viewpoints
- Generation of unusual ideas and metaphors
- Novelty
- Solving problems and puzzles
- Designing devices and machines
- Multiple modes of communicating results
- Visualization.

So, key questions in university teaching should be the following (Biggs & Tange, 2007:17-19):

1) Which of the three main theories used to teach at the university?
   a) What are students? In this case, the teacher informs, while the student assimilates.
   b) What do teachers? In this case, the teacher explains scientific concepts, principles, etc.
   c) What do students? In this case, the focus is on active learning activities.

2) What is learning theory behind the teaching?
   a) Behaviorism: accumulation of information, reproduction of ready-made knowledge, near transfer of knowledge.
   b) Phenomenography: focuses on ways in which students create meanings, far transfer of knowledge.
   c) Constructivism: focuses on the nature of learning activities, far transfer of knowledge.

The latter two agree with each other in that learning is not formalistic knowledge transfer but changing the way we perceive ourselves and the world.

Teaching in Large Audiences: An Effective Model

Often, a very superficial approach to learning is encouraged, i.e. memorizing isolated facts, key-words, definitions, taxonomic lists, etc., without any real understanding of the subject or of the topic. In contrast, the in-depth approach emphasizes on (ibid:24-25):

- Understanding the structure of the subject
- Previous experience of students (pre-existing knowledge)
- Dealing with misunderstandings
- Creating a positive learning climate
- Active learning
- Developing motivation
- Learning strategies to learn.
In the whole learning process, apart from learning new techniques, the incentive learning and positive expectations must also hold an important place, both at the beginning and during the courses, as well as the reflective teaching. In this way, students will be able not only to give personal meaning to knowledge, but also to understand what they need to change and why (ibid:31-44). Important is the design of learning experiences aiming to (ibid:64-80):

- Cultivating positive attitudes for academic learning (academic knowledge and research), for citizenship (social responsibility), and for lifelong learning (meet new problems and situations)
- Developing skills for searching and processing information, for research, for personal intellectual autonomy, for socio-professional ethics, and for successful communication
- Coupling of academic knowledge (declarative, procedural, and conceptual) with professional (functional, specific, and realistic) and conquering different levels of understanding, from pre-structural and one-dimensional up to correlative and abstract.

Thus, in the context of a teaching methodology that aims to create significant learning experiences, teaching in large audiences (lecture or tutorial) can be effective if the teacher acts not merely as ordinary transponder of information in specified conditions, but as mediator for transformative learning, helping students to build their own scientific knowledge, focusing on what they are doing in the classroom. A large audience can be interactive, if teacher (ibid:104-131 & 138-151):

- Properly prepares their lessons (introduction, objectives, questions, activities, reflection, feedback)
- Exerts their students how to take notes based on concept maps
- Uses alternative activities that facilitate the coupling of theoretical and applied knowledge (e.g. group teaching, focus on case studies, problem solving, correlation with workplace, etc.), utilizes in parallel and the opportunities offered by modern educational technology (Anderson et al., 2001; Naidu, 2001).

Thus, the dichotomy between the lecture, on the one hand, as a means of passive transmission predetermined scientific knowledge and manipulation of the students, and the dialogue, on the other hand, as a means for enlightenment and giving new meanings to knowledge can be lifted (Brookfield & Preskill, 1999:35-36). In this light, the above dichotomy can be seen as non-pedagogical, because things can happen vice versa too (Shor & Freire, 1987:40).

To make teaching in large audiences more systematic, a university teacher can apply the recommendations below (Brookfield & Preskill, 1999:34-38; Shor, 1992:32-33):

1) Before courses, provide students with texts for an initial reading (critical pre-reading), accompanied by epistemological questions of empirical, communicative and socio-political content, or by problems of apropos or academic character.

2) Begin with one or more key-questions (framing questions) or with the position and discuss topical, generic or academic problems. In this way it is indicated that education is an ongoing research process through which one tries to capture a deeper understanding, as well as that scientific truth may be temporary. If you use in each course such a strategy,
then students will be more receptive to exploring structural questions or to identifying and analyzing problems.

3) Introduce carefully alternative views (alternative perspectives) relating to the subjects taught. The way the disposition to take different perspectives seriously into account without the accuracy of defensive reflexes can be cultivated. One way for the instructor to achieve this is to present all arguments against claims. Another is to give the floor to one or more students with opposing views or even a doubt.

4) Distribute periods for determining and controlling fundamental assumptions / cases (periods of assumptions hunting). The examination of fundamental assumptions must be conducted in the presence of students in a way which would be built on the methodology of “thinking aloud” (Ericsson & Simon, 1993).

5) Use the “lively” working in groups (buzz groups), so that students can converse with each other. These groups should be composed of three to four students and be activated two or three times during the course. Group working should be based on concrete questions about the significance and the relation to the subjects taught or about the clarity and usefulness of views held during the course, as well as on estimations for the stability of the arguments presented.

6) Enter periods of “silent contemplation” (periods of reflective silence). The lecture could be interrupted every twenty minutes in order to provide students with time to reflect on what they heard. Then, individual students or small groups can be requested to present their ideas and comments orally or in writing (Catterall, 2005).

7) Finish with a series of questions that the lecture brought to light or left unanswered.

Finally, upon completion of each course session it is appropriate to give students an online eponymous questionnaire (critical incident questionnaire) for critical review of “episodes” of teaching, which will always include the same questions (Brookfield & Preskill, 1999:38-40; Reeves, 2006):

1) Was it a pleasant course session?
2) Will what you have learned affect your effectiveness in the future?
3) Where do you think you could apply what you have learned?
4) Which point of course did you participate more actively in?
5) Which point of course did you participate less in?
6) Which classroom activity do you think you benefited the most from?
7) Which activity do you appreciate that caused you embarrassment or confusion?
8) What surprised you the most in this course?
9) Which of your questions remained unanswered?

Students will complete this online questionnaire after every course session and return it to the teacher, who should answer, in case he/she finds it necessary. The entire process is extremely useful for the feedback of the teacher and of the students, as well as a tool for students to do and receive criticism.
Inspirations

Instructional Strategies in Specialized Courses (Labs, Workshops, etc.)

Problem-based Learning

Problem-based Learning (PBL) was pioneered in the medical school program at McMaster University in Hamilton, Ontario, Canada in the late 1960s by Howard Barrows and his colleagues. The Problem-based Learning curriculum was developed in order to (Savery, 2006):

- Stimulate the learners
- Assist the learners in seeing the relevance of learning to future roles
- Maintain a higher level of motivation towards learning
- Show the learners the importance of responsible, professional attitudes.

Problem-based Learning is a student-centered pedagogy in which students learn about a subject in the context of complex, multifaceted, and realistic problems (not to be confused with project-based learning). The goals of Problem-based Learning are to help the students develop flexible knowledge, effective problem solving skills, self-directed learning, effective collaboration skills and intrinsic motivation. Working in groups, students identify what they already know, what they need to know, and how and where to access new information that may lead to resolution of the problem. The role of the instructor is that of facilitating learning, providing appropriate scaffolding, supporting and modelling the process, and monitoring the learning. The tutor must build students’ confidence to take on the problem, encourage the student, while also stretching their understanding (Douvlou, 2006).

Project-based Learning

While Problem-based Learning and Project-based Learning share much in common, they are two distinct approaches to learning. In Problem-based Learning, a specific problem is specified by the course instructor. Students work individually or in teams over a period of time to develop solutions to this problem. In Project-based Learning, students have a great deal of control of the project they will work on and of what they will do in the project. The project may or may not address a specific problem. This instructional approach is widely used in Architecture Education, Business Education, Medical Education, and in other situations where “case study” methods provide a useful focus in teaching/learning (Thomas, 1998).

Project-based Learning is a dynamic approach to teaching in which students explore real-world problems and challenges. With this type of authentic, active and engaged learning, students are inspired to obtain a deeper knowledge of the subjects they are studying. Project-based Learning is an instructional method that provides students with complex tasks based on challenging questions or problems that involve the students’ problem solving, decision making, investigative skills, and reflection that includes teacher facilitation, but not direction (Patton, 2012:13 & 24-27).

This type of learning is focused on questions that drive students to encounter the central concepts and principles of a subject hands-on. Students conduct research using a variety of sources, from the Internet to interviews with experts. They work on the project over an extended period of time because of the in-depth nature of the investigation. Like professionals trying
to solve a problem, they don’t restrict themselves to one discipline but delve into whatever is appropriate to the study. They form their own investigation of a guiding question, which allows them to develop valuable research skills as they engage in design, problem solving, decision-making, and investigative activities. Through Project-based Learning, students learn from these experiences, take them into account and apply them to the world outside their classroom. Finally, Project-based Learning is a different teaching strategy that promotes and practices new learning habits, emphasizing creative thinking skills by allowing students to find that there are many ways to solve a problem (Blumenfeld et al., 1991).

**Architectural Education and Studio-based Learning**

Young people go to University with the aim of becoming architects; of finding out if they have got what it takes. But, what is the first thing you should teach them?

First of all, you must explain that the person standing in front of them is not someone who asks questions whose answers he already knows. Practising architecture is asking oneself questions, finding one’s own answers with the help of the teacher, whittling down, and finding solutions. Over and over again.

The strength of a good design lies in us and in our ability to perceive the world with both emotion and reason. A good architectural design is sensuous. A good architectural design is intelligent. We all experience architecture before we have even heard the word. The roots of architectural understanding lie in our architectural experience: our room, our house, our street, our village, our town, our landscape –we experience them all early on, unconsciously, and we compare them with the countryside, towns and houses that we experience later on–. The roots of our understanding of architecture lie in our childhood, in our youth; they lie in our biography. Students have to learn to work consciously with their personal biographical experiences of architecture. Their allotted tasks are devised to set this process in motion. A very useful task could be the design or the redesign of a school building (Zumthor, 2006:57-59).

Studio is at its the very heart of the educational experience for design oriented disciplines where studio courses/subjects/projects are significant components of a majority of the semesters in a student’s career. For studio-teaching various strategies can be used –if certainly teachers are not restricted to the traditional role of master.

Among these strategies in recent years the emphasis is on Problem-based Learning or on Project-based Learning. Studio-based Learning or Studio Teaching Project (STP) is a synthesis of the previous two strategies, mainly Project-based learning, along with strategies and activities designed to develop high order critical and creative thinking skills.

There are several architectural schools around the world, which implement innovative teaching strategies, conduct research projects, have special publications, and carry out specific meetings or fora. For example:

a) The Centre for Education in the Built Environment (CEBE) – Cardiff University.

b) The Studio-Teaching Project (STP) – a collaboration among the University of New South Wales, University of Queensland, RMIT University and University of Tasmania, under the supervision of the Australian Learning and Teaching Council.
A synthesis of findings from across the *Studio Teaching Project* (literature review, National Forums, Academic Survey, Heads of School Survey) led to a series of interdependent benchmark statements about effective practice in studio that can be used by studio teachers to reflect on their practice, and by those involved in curriculum design, development and review. These benchmarks are (Zehner et. al., 2010):

- Quality projects
- Quality staff
- Positive studio community
- Students’ engagement and commitment
- High level of interaction
- Effective collaboration amongst students
- Reasonable class and group sizes
- Connection with industry and the profession
- A variety of studio outcomes; and provision of appropriate studio spaces and facilities.

As Zehner et al. pointed out (ibid), “benchmarks ‘in practice’ are likely to be even more useful to those developing studio-based curricula, and to that end the *Studio Teaching Project* compiled an extensive range of examples of how Australian academics have approached and implemented a variety of effective studios. One of the overall conclusions of the *Studio Teaching Project* has been that high quality studio experiences are never simply determined by any one of the key variables or benchmarks. The spirit of studio teaching is the creation of an open-ended space of exploration in which students and staff work collaboratively. The importance of the ‘project’ in a quality studio points us to what is really significant in all studios: challenge, inspiration, multidisciplinarity, relevance, risk-taking, and unpredictability.

### The Most Important Elements in University Teaching

#### The Critical Dialogue

The *Critical Dialogue* or *Critical Discussion* in the class could be a means by which teachers can act as true intellectuals (= transformative intellectuals) to transform the ideas and the attitudes of their students, assuming of course that they will focus on open and challenging questions, on reflection on underlying assumptions, on appropriate documentation and argumentation, and on problem solving. By doing this, they will engage their students in procedures that promote the social construction of knowledge and any contradictions of it (Giroux, 1988:119; Shor, 1992:32-33). The advantages of such a dialogue can be summarized as follows (Brookfield & Preskill, 1999:17-33):

- Exploration of the multiplicity of visual
- Tolerance towards to complexity, uncertainty and doubt
- Identification and control of fundamental assumptions
Inspirations

- Concentration of attention during the hearing (active listening, learning to listen and understand)
- Strengthening of discernment
- Repositioning of new perspectives on a new basis
- Assistance to relate theoretical knowledge with specific issues
- Respect for the views and experiences of students
- Addiction in democratic processes
- Students’ participation in the shaping of knowledge
- Conquest of communication skills for clear transmission of ideas and meanings
- Opportunities for deepening and empathy
- Addiction to participatory and active learning
- Developing of composition skills
- Transformation of the mind.

A course that serves the critical dialogue must end with unanswered questions or questions that arise from what was said or by recasting questions on another basis or in a more provocative way. This process can help students to realize that the scientific issues are subject to ongoing research and negotiation, as well as to put themselves questions during the courses. A good practice for this would be to have the teacher spend the last ten or fifteen minutes of the class period to have the students write such questions and then communicate them to their fellow students or to give to the teacher for discussion at the next meeting (ibid:45-47).

However, what primarily matters is the pedagogical perspective that dialogue can be an act of freedom, which aims to develop the ability of critical understanding of the issues and for self-criticism, with the ultimate aim to serve as a catalyst for action and as an act of freedom (ibid:4-6). Besides this, according to Dewey (1916), the dialogue is a “sine qua non” component of democracy, since it is a device contribution to human development by nurturing the ability to exchange views, by increasing the availability for “giving” and “taking”, by expanding the horizons of mind, and by promoting mutual understanding (Dillon, 1994).

The Critical Teaching

*Critical Teaching* is a fundamental process, but it is not easy, because it often causes “learning blockage” or resistance. Pre-existing cognitive patterns of students for the “good teacher” and “good teaching” lead the students to reaction or even cause discomfort. Moreover, any attempt by teachers to involve the students in active practice is perceived, many times, as a symptom of “poor teaching” (Kim, 2000).

Therefore, *Critical Teaching* is not a mechanistic process. It requires academic teachers with knowledge, experience, loyalty to their profession –also the teaching profession, of course–, innovative programs, media and infrastructure support from the administration. Despite the difficulties, however, the university cannot abandon its mission: to contribute to the complexity
of interpreting the world, to understand and make sense of fragmented knowledge, to establish a new epistemology for the value of life with all its uncertainties (Barnett, 2000).

**Epilogue: The Love of Learning**

Last but not least crucial point for the learning is the Love of Learning. A mature love of learning comes from seeing the immediate and more tangible learning task in a wider context, a context which broadens the person, and it is the wider context which gives a long term point to learning new skills (Nilsen, 2004).

Can love for learning be taught? Well, this seems unlikely; at least, not in the sense that certain actions will automatically lead to certain results. But even if the love of learning cannot be taught, it remains a challenge, and even today it remains a privilege, to try and create an environment in which it may occur. It is a bet to be won. And academic teachers can make the difference.

**References**


Inspirations


Jean Loup Castagne
France

Learning Quality
and Teaching Methods
Lyon architecture’s school is a school with 900 students, 45 professors, 150 external participants (guest speakers, guest teachers ...), 35 admin staff and 1 pedagogical advisor.

**What is pedagogy?**

Pedagogy and didactic are both education’s sciences branches. Didactic refers to theories of teaching. It is teacher centered and therefore linked to efficiency. So it is often disciplinary, though general didactic is non-disciplinary. Pedagogy on the other hand refers to theory of learning and is of course centered on student’s learning. It is by definition unspecific.

<table>
<thead>
<tr>
<th>Didactic</th>
<th>Pedagogy</th>
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<tr>
<td>Theory of teaching</td>
<td>Theory of learning</td>
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<tr>
<td>Linked to efficiency</td>
<td>Not how to teach</td>
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<td>Teacher centred</td>
<td>Student’s learning centered</td>
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<td>Often disciplinary</td>
<td>Unspecific</td>
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The word pedagogy comes from the Greek paidos (παιδος) which means child and ago (αγω) meaning to lead. In higher education students are not child anymore. Knowles reports that in 1833 Kapp was the first to use the word andragogy referring to specific adults’ pedagogy. The etymology of andragogy being andras (ανήρ) meaning the man, andragogy is defined the art and science of adult learning, thus andragogy refers to any form of adult learning (Kearsley, 2010). But andras (ανήρ) is referring to the man as a human male. This is why the expression higher education pedagogy is often preferred.

Overtime learning theory has evolved: starting with behaviorism, cognitivism and Gestalt psychology and then constructivism and socio-constructivism. The Internet influences on learning and teaching might be the next learning theory and is already called connectivism. In our opinion, there is no such thing the one good theory explaining everything. It is our belief that contexts dictate students’ or teachers’ behaviors revealing a vision of the learning and teaching paradigm used in regard to the context and that is linked more to one theory than another. That is why every pedagogical question might be answered by the famous: it depends.

**Learning quality**

To define learning quality instead of focusing on learning theory we will discuss 3 pedagogical models of teaching and how they impact on learning.

1. Houssaye pedagogical triangle
2. Learner-centered model
3. Learning-centered model
**Houssaye pedagogical triangle**

The first model is the pedagogical triangle proposed by Houssaye (1984). Each corner of the triangle is defined as teacher, student or content. The line segment between the teacher and the content is the act of teaching, the segment between content and student being the act learning. The last line segment between teacher and student is defined as education. Though the model being more didactic than pedagogic it’s interest lies in the fact the Houssaye describes that most of the time in teaching only one line segment is present, meaning one corner is always neglected. The second problem with Houssaye’s model is that it does not take into account the context. In terms of learning it means that the teacher plays the dead when learning occurs or that no learning occurs while the teacher is teaching the content.

**Learner-centered model**

To take into account the context, the second model is student centered. The model was based on the humanistic approach founded by psychologist Carl Rogers in the sixties.

Putting the learner in the center of a teaching model was defined as the “Copernican Revolution in Education.” For instance Knowles andragogy learning theory is learner centered. A learner-centered approach will force the teacher to focus on the students’ needs. Being in the center allows the learner to take an active part in the planning of activities, defining learning objectives and needs of learning, identifying suitable teaching method, and in the evaluation of learning. Though meaningful a learner centered approach improves chances of learning quality but the model is often too complex and not pragmatic enough for a teacher. The major step moving from student-centered learning, the core assumptions are active engagement in learning and learner responsibility for the management of learning (Lea et al., 2003).

**Learning-centered model**

The third model is a pragmatic model that focuses not on the learner but on the learning. It was first described by Taylor in 1947 as the pedagogical triple consistency. In 1996, Biggs revisited the model and called it the pedagogical alignment. They both define three components a teacher can control to improve quality of learning in students:

1. Learning objectives
2. Teaching and learning methods
3. Formative and summative evaluations

To assure quality in learning objectives must be coherent with teaching methods and evaluation must be coherent with both objectives and teaching methods.

The learning-centered model can be used in conjunction with a learner-centered approach. Instead of putting the emphasis on the learner needs it offers a possibility to put the learner on the center within the 3 components of the learning-centered model.
1. Learning objectives

Objectives can be defined at different levels: for an activity, for a whole course, for a semester or for a complete program. Bloom (1956) defined 3 types of objectives: cognitive (knowledge), psychomotor (skills), or affective (attitude) objectives. Using Bloom’s taxonomy to define objectives improved learning and teaching quality. Despite revisions by Anderson et al. (1994) and by Krathwohl (2002) the taxonomy lacked higher levels to describe for instance program goals. Also, moving from a teacher-centered to a student-centered approach learning objectives would be described as learning outcomes. They describe “what the students are expected to be able to do at the end of the module or program” (Kennedy et al., 2006). The highest level of learning objectives would be competencies. A competency is the complex capability to efficiently mobilize, combine and use a variety of internal and external resources within a defined work setting (translated form Tardif, 2006).

To assure learning quality learning objectives should always be at least described at two levels:

- a measurable level helping students to clearly identify teachers’ expectations
- a general level that describes goals of the whole formation

It is mandatory that links between the two levels must be obvious in a students’ perspective.
2. Teaching and Learning Methods

To describe teaching and learning method we’ll use a learning/teaching model (Leclercq & Denis, 1998). The model describes both students’ and teacher actions for each paradigm. The first three paradigms (colored in purple) are initiated by the teacher and the last three (in green) by learner. The three first describe teacher / student action. The last three describe student / learner action. Depending on contexts paradigms #3 and #4 might be initiated by either the teacher or the learner. They are colored in purple and green.

Fig. 5

Six learning examples.

Student learning in higher education is no longer defined as “simple acquisition process based on teacher transmission”. It is nowadays “conceptualized as a process whereby students actively construct their own knowledge and skills” (Barr & Tagg, 1995; DeCorte, 1996; Nicol, 1997). This shift might be observed in teaching methods listening to what teacher says and observing if the initiative is in the hand of the learner or the teacher. Within the learning/teaching model it means a shift from low to higher number and changes in the teacher’s saying:

1. modeling / observation: the teacher says “Watch how I proceed”.
2. transmission / reception: the teacher says “You must know that…”
3. experimentation / reactivity: the teacher says “Here are tasks & resources” and the learner says “Let me try”
4. exercising / guidance: the learner says “What do you think of …” and the teacher answers “Your default is…”
5. creation / comfort and confront: the learner says “I’ve made this and that...” and the teacher answers “Good idea / I think that...”
6. exploration / documentation: the learner says “Let me find by myself ” and the teacher answers “Available resources are ...”

“Learner and teacher’s actions are complementary and interdependent” (Verpoorten et al., 2007). Teachers’ roles are described by Kickmeier-Rust et al. (2006):
1. modeling / observation: Describes incidental or intentional learning through observation and subsequent imitation. The role of a tutor or teacher is being a (role) model.
2. transmission / reception: Describes learning by receiving information or advice. The tutor’s role is transmitting information.
3. experimentation / reactivity: Describes learning through manipulations of environments and observations of effects. The tutor’s role is to provide an environment which allows experimentation and manipulation of objects, i.e. providing guidance.
4. exercising / guidance: Describes a “proceduralizing” and automation of skills. The tutor’s role is giving learners guidance and corrections.
5. creation / comfort and confront: Describes learning by creating new content or objects (e.g., texts or music). Creation also includes a reincorporation of known content. The tutor’s role is to foster creation process or confront learners with tasks of creation.
6. exploration / documentation: Describes learning by an investigation of information with a certain degree of freedom. The tutor’s role is to provide guidance, sources, or access.

In the last part of this communication, three studio teaching situations will be described using the model.

3. Formative and summative evaluations

Assessment is often pedagogical design’s poor stepchild. Nevertheless it is a full part of learning and teaching. To improve quality evaluation should be planned in conjunction with definition of objectives and teaching methods. This will ensure the validity of the test instrument, meaning that the test “measures what it purports to measure” (Astin, 2012, p. 42). To help teacher designing valid instruments new modes of assessment have enriched the ‘conventional’ evaluation setting. On top of the traditional multiple-choice questions and essays, teacher should be informed of the pro and cons of new test instruments like portfolios, self and peer assessment, simulations...

Being valid and coherent with objectives and teaching methods is not enough to influence students’ perceptions about evaluation. Sambell et al. (1997) listed five conditions for assessment to be perceived by students as having positive effects on their learning:
1. relates to authentic tasks;
2. represents reasonable demands;
3. encourages students to apply knowledge to realistic contexts;
4. emphasizes the need to develop a range of skills; and
5. is perceived to have long-term benefits.”
Implementing those five conditions will improve students’ perception about evaluation. With a positive perception, their approaches to learning should shift from surface to strategic or achieving approach or even the deep approaches to learning, even if “changes in approaches to learning are often subtle and unnoticed.” (Struyven et al., 2005). The last important point about evaluation tasks is workload as “a reasonable workload is a precondition of good studying and deep learning” (Chambers, 1992).

Formative assessment refers to assessment that is specifically intended to generate feedback on performance to improve and accelerate learning (Sadler, 1998). It is planned within teaching to provide feedback including forces, weaknesses and suggestions to improve performance. Sadler (1989) identified three conditions necessary for students to benefit from feedback in academic tasks. He argued that the student must know:

1. what good performance is (i.e. the student must possess a concept of the goal or standard being aimed for);
2. how current performance relates to good performance (for this, the student must be able to compare current and good performance);
3. how to act to close the gap between current and good performance.

Following the shift from teacher-centered to learner-centered model, Nicol & Macfarlane-Dick (2006) recommend that formative assessment in higher education should also imply development of self-regulation. To do so they defined “seven principles of good feedback practice facilitating self-regulation:

1. helps clarify what good performance is (goals, criteria, expected standards);
2. facilitates the development of self-assessment (reflection) in learning;
3. delivers high quality information to students about their learning;
4. encourages teacher and peer dialogue around learning;
5. encourages positive motivational beliefs and self-esteem;
6. provides opportunities to close the gap between current and desired performance;
7. provides information to teachers that can be used to help shape teaching.”

If formative evaluation purpose is learning higher education teachers share the responsibility of diploma delivering. At some point level reached by students must be judged. Summative evaluation is that judgment. Depending on the kind of learning objectives defined, summative evaluation’s initiative might differ. Assessment of level of development of all learning outcomes is often measured by the teaching team. Assessment of competences it often is up to students: they must prove why the development of each competence has reached the expected level. Teacher validates or not and explains why. Portfolios are often used as instrument to support students’ proofs.
**Teaching methods in architecture: 3 illustrations**

Teaching method and evaluation in architecture will be described in 3 illustrations, 2 in studio design and one in lecture.

**Studio pedagogical scenario**

Studio teaching in this case occurs from 9 to 18 with a one hour break for dinner. Each studio teacher works with a group of 15 to 20 students. For the first hour teacher individually invite students to present progress made on their own project. Using our learning/teaching model this first stage can be categorized as creation / comfort and confront.

Other students than the one involved with the teacher are free to work on their projects, discuss difficulties with peers, or listening to student - teacher exchanges. After this first stage the teacher briefly introduce a new tool or method. All students are invited to experiment the tool/method on their own project and to produce a one A4 page essay demonstrating the results of using the tool/method on their project. We define this second time as a phase of experimentation / reactivity. After two to three hours, students go to eat. After the meal the teacher gathers all 15-20 students together and debriefs students’ results, presents the advantages of the tool/method, and describes other similar tool/method. This stage is classified as transmission / reception. During the afternoon teacher resume the creation / comfort and confront activity. At the end of the day the teacher makes a global feedback regarding what
he saw in students’ projects and fixes goals for the next lesson. This last stage is also classified as transmission / reception.

**Formative group evaluation of studio project**

The second situation refers to a formative evaluation of studio project. The lesson is organized for a group of 30 students. Two studio teachers are reviewing the work of the 15 students they’ve accompanied in studio teaching. Teachers have installed tables at 2 meters of a wall where students’ A0 project posters will be exposed. Student’s models are displayed on the table in front of the teachers. Each student is presenting his own project to the audience. All other students are free to seat or stand behind the teachers. This first stage is defined as transmission / reception where it is the student who transmits information to the two teachers and the group of students behind them, being receivers of that information. Teachers then give feedbacks to the students. This stage might be also classified as the traditional transmission / reception where teachers are transmitting information. Observing this situation within the students’ group we’ve noticed that:

- it was difficult to hear teachers’ speeches as they addressed the presenting student in front of them while all other students were behind them;
- when commenting and showing details either on the poster or on the model it was impossible to see what teachers were pointing at making it very difficult to understand what the comments were about.
During this stage it is obvious that teachers and presenting student were in a creation / comfort and confront stage. But the stage was not designed towards a group activity but more to an individual feedback. So either teachers change the intention from a group activity to a 2 teachers - 1 student activity or they change the activity scenario and spatial organization should be adapted to teachers’ pedagogical intentions.

Architecture theater lecture

This situation is not specific to architecture. It does not result from observation but is hypothetical. We will take the opportunity of this hypothetical situation to present 7 ways to improve theater teaching. The teacher-centered traditional lecture is the teacher presenting information to an audience of students in a theater. Most presentations are associated with slides showing the text of the presentation, advance organizers that helps students to receive information, illustrations of the speech... “An advance organizer is information that is presented prior to learning and that can be used by the learner to organize and interpret new incoming information” (EduTech Wiki, 2010). They are classified as pure transmission / reception.

This method is an efficient way presenting information to large (> 35) groups. But as Dukette & Cornish (2009) explain “common estimates for sustained attention to a freely chosen task range [...] to a maximum of around 20 minutes in older children and adults.” During a lecture, Wilson & Korn (2007) suggest that teachers pay attention to the audience to estimate students’ attention. In any case, after a time depending on context, individual motivation, content,
instructor himself … the audience percentage actively listening to the lecture will drop. Some content being more important than other it might be a good time to change learning/teaching paradigm. Saint Pierre et al. suggest 7 acts to center on learning:

1. Act on previous knowledge
2. Make students active
3. Give rise to & use interactions
4. Support knowledge organization
5. Insert evaluation into learning
6. Act on transfer
7. Develop reflective capacities

The teaching scenario may for instance evolve to a scenario mixing learning/teaching paradigms. If it makes sense regarding learning objectives and contents, the lesson might begin with a revival of previous knowledge. As Saint Pierre et al. described, each act might be implemented at three levels depending on the posture regarding teacher-centered or learner-centered approach. In the case of acting previous knowledge, the three levels would be:

1. the teacher revives previous knowledge;
2. the teacher asks questions to revive previous knowledge in students’ mind;
3. the teacher provokes peer or teacher-students’ interactions using previous knowledge.

Fig. 7
Formative group evaluation of studio project.
Lecture is nor the best neither the worst teaching method. It depends on what's happening during the lecture. Constructing a lesson scenario, lecture or studio, mixing learning/teaching paradigms and including acts to center on learning, and in respecting Biggs pedagogical alignment will improve teaching and learning quality.

**Conclusion**

There is no such thing as the good teaching method. Describing their actions or planning their lessons using models presented in this paper will help teachers to improve the quality of their teaching, creating more favorable conditions for learning.

Higher education teachers do often receive no education regarding teaching or evaluating. Higher education pedagogical advisor or teaching consultant missions covers 3 aspects of teacher professionalization as teacher. Those missions are:

1. to accompany volunteer teacher willing to improve teaching or evaluating practices;
2. to organize training workshop on pedagogic thematic;
3. to provide initial education regarding teaching and learning to young teachers.

Administration should provide opportunities for teachers to work with higher education pedagogical advisors.

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Initiations
Learning Quality and Curriculum Structure
Introductory remarks
made to focus a discussion panel
The connection between learning quality and curriculum structure is comparable to the connection we as architects see every day as we consider the making of places and the infrastructure required to realize such experiences. It reminds us of the critical connection between freedom and order, the necessary learning outcomes of a professional curriculum and the imperative to nurture the free inquiry of the creative personality. To begin this discourse I have chosen to address the series of questions posed to this panel. It is not possible to address each question in depth but taken together the abbreviated responses begin to inspire strategies addressing the relationship between learning quality and curriculum structure. The strategies that comprise the second section of this paper are intended to provide guiding ideas for curricular development.

Questions

The following questions were posed to a discussion panel by the meeting organizers to inspire discourse on the subject of curricular development. Taken together these questions begin to formulate a substantive context for the study of architecture and design. It is appropriate that this discourse begin with the posed questions. The Socratic method makes use of questioning, as Socrates noted, as the midwife of substantive ideas. These questions have served the purpose to stimulate a set of operational strategies for curricular planning that follows in this paper.

1. Can the structure of the curriculum affect the quality of learning?

Yes – Curriculum is a Values Statement

The curriculum is more than a peace treaty among disparate constituencies. It is a values statement regarding what is considered most important to the faculty, the constituencies of the program, including alumni and the related design professionals who become employers and the public interests who provide the seed funding for the majority of institutions who host the study of architecture. If a curriculum is considered a fundamental statement of values, and it is understood as such by the students, faculty and related constituencies of the program, then the strategic plan for the development of the study of architecture becomes an organic extension of societal needs and professional expectations and personal aspirations.

2. Which are curriculum reforms that we can make in order to assure learning?

Freedom and Order

The advent of new technologies including social media is beginning to have a dramatic impact on traditional notions of curricular paths. The linear path with little room for either elective choice or flexibility of study paradigms will change considerably in the near future. Students in American universities already complete between ten and twenty percent of their required courses in a distance education format. If we wish to plan curricular paths with new media and new preferences among students in mind then we must depart from the traditional curricular model. We must seek to understand what must be accomplished along a guided path and what can be offered in a highly experimental and exploratory format that allows for the freedom to fail. We must walk the balance beam of freedom and order. Each requires the spirit
of the other. So it is with professional curricular experiences. The core of professional studies will hold the center of the culture of the profession while the exploratory spirit will seek out new forms of design practice.

3. Which trends in curricula take into account the values and contemporary concerns of architecture, the avant-garde experimentations, the technological possibilities and the unstable market?

Engage the Wicked Problems

Too often we default the leadership of our profession to the explorations of the avant-garde. We wait breathlessly for the next artistic expression of design stars that pay little attention to issues beyond self-expression. This leads our profession to a form of émigré architecture where the stylistic choices make their way from New York to London to Beijing with no discernable change. This must be resisted in an educational context. The best hope to address this concern is to introduce relevancy into the studio-based exercises. We must address the most difficult problems that face our society to prepare individuals to lead rather than follow. Our core values must be built upon critical and creative thinking and the application of such metacognitive thought to the issues that are of most importance to humanity.

4. Which forms of design studio do we have to develop in order to enrich design education with a trans-disciplinary spirit?

Project-Based Learning

As a design education proceeds from introductory materials toward professional preparation the introduction of project-based learning is essential. Most educators would argue that this is already understood and further that it is a long tradition in the design school. However, it is not the traditional project format that is meant in a project-based definition. Project-based learning involves engagement with a real context, clients with a specific need and a complex issue to be addressed by an interdisciplinary team. Most design education is almost singularly focused on individual performance focused on concept development. Rarely does this experience move beyond even rudimentary design development toward the specification of materials and construction methods let alone true engagement with a context. The profession simply does not work in such a culture. In a project–based learning culture, complex problems are addressed by an equally complex team that requires a high level of collaboration. This experience greatly enhances the design studio learning outcomes.

5. To what extent can trends take into account the quality of learning?

Pose Questions

Trends represent signposts along a journey toward understanding the evolution of professional education. Some are obvious and they call attention to themselves. The impact of social media, integrated project delivery and building modeling, dramatically changing demographic, a world culture in a continual state of upheaval all indicate the need for the creative personality but challenge us by the reality that there are no easy answers, many right answers, but no
answer that is conclusive. It may be that the best strategy to address these times in a design education is to teach the individual to pose questions to stimulate thought. Issues form and dissolve so quickly in this world culture that our best strategy is to not seek final, perfectly composed concepts but rather to foster a spirit of inquiry and openness to good ideas no matter their source. Posing the questions is the first stage of a mature design inquiry.

6. How can we raise the quality of learning in architectural design as a melting pot of architecture knowledge and architectural creativity?

Rigor and Curiosity
Simply we begin by teaching design thinking. This overt exploration and encouragement to engage in metacognitive thought is essential to raising the knowledge base of the profession as well as to proceed into complex architectural problem solution. Three modes of thought combine and recombine to form the thought processes of a design. We are by our nature intuitive and therefore are quick to postulate. We can see an idea forming whole cloth in our minds and then struggle to give it structure. Continual iteration sometimes referred to as failing early and fast characterizes this phase. This process is complemented by the need to find a greater meaning in project development. This process stimulates greater and lesser solutions in the context of a time, place and culture. It is a process that requires evidence and reasoning within multiple systems. The third mode is most often referred to as scientific method. Its premise is that a hypothesis is put forward in speculation and a process begins to disprove it. Through this process evidence and reasoning are developed and tested within a system. This process gains credibility as assumptions are discredited leaving the residue of what can be known about truth. These three essential interrelated perspectives are made whole by the rigor of the measures of success determined for the individual in the system. However, it is curiosity that is the true fuel of this system.

7. Are there any practice examples that would be useful to be disseminated?

Horizontal Relationships
The case study method provides an opportunity to study practice closely. It should be implemented as a means to understand the link between theory and the delivery of knowledge and service to a diverse constituency. It is the means to communicate to students the culture of design practice to prepare them for entry into a world that is very different from the culture of the academy. Perhaps the most crucial examples that can be studied are those exploring the social networks of work that are pervasive in the profession as the most effective means to realize projects. These social networks are characterized by horizontal relationships in which specific skills of individuals complement the skills of others. Such complementary skills do not follow traditional hierarchical relationships. Accountability for results moves within the network. This reliance within the design and building professions on new forms of relationships and collaborations that extend around the world has as much influence on research and the applications of new materials and means of construction. This new reality must be brought to the attention of those aspiring to become architects. This is a new conception of practice.
8. Which subject areas and disciplines can have a significant impact on this objective?

Follow the Project Lead

This question is really an extension of question 4. Perhaps this question intends us to rephrase the answer provided in the 4th question given the thoughts generated in answering questions 5, 6 and 7. Given the opportunity to rephrase the first answer, it seems most logical to answer this question by noting that in a professional context it is the project engaged by the design team that determines which disciplines will have the most impact. Perhaps it is this observation that points out that we must teach future design professionals to follow the lead of the project. We must prepare future design professionals be open to the expertise of others and to learn the skills of team coordination and collaboration.

9. Cross-disciplinary understanding and interdisciplinary investigations as cultural manifestations of every day life and creative architectural practice constitute an objective of architectural education. Which pedagogical strategies must we implement to assure interdisciplinary learning?

Respect for the Other

It seems so simple, the most effective pedagogical strategy that could be employed is to engage students and faculty in such a way that true discourse is taught on the foundation of respect for the other. We have devoted so much effort toward the individuality of the work of an architect that we have either forgotten or have grossly overlooked the simple fact that architecture cannot be achieved with a solitary highly individualized professional posture. Respect for the other, humility, is an essential aspect of this realization. Too much emphasis is given to the insistent personality. We must teach our students that listening and doing are intimately related. We must teach our students that there is much to be learned from each other.

10. Are there practices that your institution employs to assure the quality of learning by implementing changes in its curriculum?

Broaden Perspectives

Perhaps the most important aspect of the design community at the College of Design at NC State University is that architecture is studied in the context of other design disciplines including; landscape architecture, industrial design, graphic design, and art and design that encompasses new media, fashion design and design studies. These areas of study at both the graduate and undergraduate levels provide great opportunity for students of each of these curricular paths to move among the disciplines. These programs are also complemented by a research oriented Ph.D. Program and studies are underway to initiate a professionally oriented doctor of design studies. To further broaden the perspective of the student international study is required and service-learning opportunities are pursued in the community. The College also is extensively involved in community engagement projects from city renewal to affordable housing projects, K-12 education programs, cross university collaborations, dual degree options, and professional concentrations in city design and energy management.
A broadened context for the study of any one of the design disciplines is essential. It fosters the cross connections within the design professions that builds relationships among individuals that last a lifetime. Further, the nuances of process that make each of the design disciplines can be incredibly useful to all of the disciplines.

**Strategies**

The strategies to develop new curricular paths are straightforward rather than obtuse. Too often educators are tempted to build the perfect narrative infused with complex notions that divert energies from what is most important. A curricular narrative overly composed provides little room for the extrapolations of experience and the messiness of discovery. The curricular path must be a combination of order and specific direction with the freedom to explore and to fail. Ultimately the strategies that follow provide the structure for the interaction of people - students, staff and faculty. Ultimately our search is for a matrix that promotes improvisation.

1. **Pursue a Culture of Inquiry**

*Design Thinking on a Foundation of Evidence Based Design*

A curricular experience in a creative discipline such as architecture must be focused on the imperative to foster critical and creative thought. In a design curriculum this begins by teaching design thinking as an overt exercise. Students must be introduced to the intuitive inclinations of a creative individual complemented by rigorous thought processes including those learned from scientific method and humanistic inquiry. Just as inquiry can be undermined by pseudoscience rather than scientific method so too can the design process be undermined by unfounded assumptions. Curiosity is the fuel for creative process; design thinking is the means to realize innovative outcomes. Students who experience learning design thinking as a discrete aspect of instruction are better able to employ thought processes in the resolution of com-
plex problem statements. The first aspect of this instruction involves teaching thinking about thinking. It causes the individual to understand the derivation of major decision influences.

This emphasis on evidence and the employment of information in the design process is essential to make the design student aware of the design profession as a knowledge-based endeavor. It is upon the base of a domain of knowledge that the design professions are afforded the respect that is due.

Plato taught that thinking is comprised of opinion and knowledge. The chart derived from Plato’s Republic, articulates that which emerges from what is seen to what is understood in the mind. Moving from conjecture and beliefs to understanding and the exercise of reason is the act of moving from images to ideals.

It is also critically important that from the first experiences in design education students be introduced to the connection between the creative life, the arc of creativity and life-long learning.

Throughout a creative life the lessons learned from experience, peers, travel and career changes thresholds of wisdom mature the individual. Thresholds from understanding to the ability to communicate and advocate for design through the integration of life lessons to a body of work lead to mastery. It is a journey that is as much characterized by failure as success by frustration as by exhilaration. How then can we measure a culture of Inquiry?

*Measures for a Culture of Inquiry*
- mature persistence,
- observational acuity,
- expressive clarity,
- reflective capacity,
- envision alternatives,

Mature persistence, observational acuity, expressive clarity, reflective capacity and the ability to envision alternatives are worthy measures. These measures could be the framework for intellectual rigor in the design studio.

2. Practice Interactivity

*Social Networks of Work Combine and Connect People*

The dramatic transformation we are witnessing from the impact of social media on life is being compared to the evolution of the alphabet, the invention of the printing press and the introduction of the radio to mass culture. This transformation is having no less impact on the conduct of the design professions. It is no longer possible or even reasonable to think of the study of a professional discipline as a protected path with no options for diversion. Blinders simply cannot be placed on the student's eyes at the expense of a broad education. Individuals who wish to fully participate in this evolving culture must have experience with cultures other than their own. They must study language and learn to communicate across disciplines and cultures. They must learn to combine and connect information and people understanding that building relationships is essential to the success of a project. New technologies facilitate the capability to actively participate in gaming situations. This interactivity changes the relationship between clients, users and architects. Architects and designers must now engage clients in real time design sessions. It is no longer acceptable to present schemes to a client without their intimate involvement. We have evolved from gaming the clients to gaming with the clients. In this context architects and designers must be taught leadership skills. The teams that come together to address complex problems are drawn from around the world. The individual who would suppose to direct this sophisticated group must understand the relationship of teamwork and have mature leadership capabilities. How can this be addressed in an education context and in the development of a curricular path? Architecture is best studied in the context of many disciplines. This begins by placing the study of architecture in the context of other design disciplines and it continues by expanding this circle of experience as much as possible. Yet this is not enough. A silo can continue to exist among other silos. Students, and faculty, must be taught and encouraged to forage among these disciplines for information. To raid other disciplines for expertise and information not only enhances the ability of an architect; it has a geometric progression of impact on the project. It has been observed that we must focus on the preparation of crossover artists.

*I'm not focused on the next big thing but rather on the thing that will help us get there: a way of thinking and seeing that extends far beyond the design world. Call it the art of crossing boundaries. The next 10 years will require people to think and work across boundaries into new zones that are totally different from their area of expertise. They will also have to identify opportunities and make connections between them. Crossover artists are experts in a particular subject, but they have the ability to work in multiple modes and disciplines. They see problems through a multilayered lens. To appreciate the complexity of the networked economy, people have to push themselves not only to know what they don't know but also to get to know it. If you're a designer take an economics course. If you're an engineer, take up painting. If you're a consultant, sign up for an improvisation class. Get to know that new*
thing to a point where you can understand the tension between your own way of thinking and this completely different perspective.
Clement Mok, President, American Institute of Graphic Arts, (American Way, 02.15.03), p. 59.

3. People not Words

Nurture, Challenge and Recognize People

Perhaps the first lesson learned by every junior faculty member is that a perfectly scripted curriculum is no better that the instructors who will employ it. If there is weakness in the faculty or the students, then the curriculum will fare no better. It is obvious to the experienced educator in a professional program that the true model to follow is an armature that organizes with out smothering the various domains of knowledge associated with a professional education. In this way a variety of ways of working, teaching and learning may be accommodated. In this way people can be challenged to develop new materials continually rather than slavishly following an abstract document, no matter how well it is written. It is possible in this format to adjust to the capabilities of the students within the program. Essentially the armature structure celebrates people and their capabilities associated with expected outcomes for the course. This format recognizes that not everyone comes to the study of architecture through the same mental frame for learning, nor do they wish to follow along in the same narrow pipeline. It gives attention to the spirit of studies within the program nurturing a climate for exploration that is accepting of failure as an essential component of the design education theory.

Recognizing people rather than the perfect words of a course syllabus is the realization of the importance of the hand and footprints of generations. It is a chronicling of the impact of people and events intertwined with the images that define us. The designer thinks in pictures. Images that drive the earliest iterations of the creative mind set.

In the development of curriculum care must be taken to not trap thoughts with words. The human experience must be filled with the images of life that give us the wisdom to act.

Hagia Sophia: Human inhabitation can be observed step by step over generations.
Photograph by: Marvin J. Malecha.

The one crowded space in father Perrys house was his bookshelves. I gradually came to understand that the marks on the pages were trapped words. Anyone could learn to deci-
pher the symbols and turn the trapped words loose again into speech. The ink of the trapped
the thoughts they could no more get away than a doomboo could get out of a pit. When
the full realization of what this meant flooded over me, I experienced the same thrill and
amazement as when I had my first glimpse of the bright lights of Konakry.

From: The Alphabet Versus the Goddess, The Conflict between Word and Image, Leonard

The most important measure of the success of a curriculum is as much a mapping of people as
outcomes. Even when there is a great amount of concurrence between people and the written
curriculum it all begins with the people, the champions.

4. Engage Beyond the Tribe

Expand Influence Beyond the Profession, Resist Singing to the Choir

The overwhelming temptation for designers is the proclivity to speak among themselves in a
language that is as much code as it is discourse. While this tendency to sing among the choir
persists so does the feeling that our value is not understood. Yet we designers and architects
have written little that would reach beyond our own ranks. Individuals outside of the design
professions have better chronicled the very design process that has been part of our legacy for
hundreds of years. Even now when innovation and entrepreneurship have focused the attention
of the public on creative processes, business and engineering schools have produced more
written and descriptive materials than we in the design professions. Clearly we must engage
beyond our tribe. We must connect our work to the work of generations.

Bear in mind that the wonderful things you learn in school are the work of many genera-
tions produced by enthusiastic effort and infinite labor in every country of the world. All
this is put into your hands as your inheritance in order that you may receive it, honor it, add
to it, and faithfully hand it on to your children. Thus do we mortals achieve immortality in
the permanent things we create in common.

Albert Einstein, Ideas and Opinions.

How do we bring this into the realm of curricular planning? Students and faculty must engage
in the processes of project-based learning. This focus on the project opens the door to the
involvement of many disciplines and varying bodies of knowledge that will be relevant to
project resolution. The concepts of service learning and connection to pro bono activity related
to critical societal needs, such as affordable housing, bring a real need into a studio setting
demanding a sense of what can be realized to complement other more abstract experiences
in a curricular path. It is the opportunity to teach students that many challenges do not have
simple architectonic solutions but rather demand strategies that resolve rather than solve
problems. Engaging the study of design beyond the walls of a closed experience opens the
door to internships and other similar work experiences that expose students and faculty to
exigencies of contemporary society.
5. **Unfold Layers**

*Seek the Essence*

Education is a process of unfolding layers of understanding. It is a process of discovery that unfolds layers of personal context and experience, of interpretation and bias that can be simultaneously a personal strength and weakness, and as much recognition of what is known and how much is yet to be known. A curricular path must allow for experiences of discovery. It is through this unfolding process that the creative spirit learns humility. The sense of humility is a moderating force in the learning experience of the student. It raises the awareness of the student that the inspiration for design can come from many sources. It inspires the reflection that good ideas must be valued no matter from where they emerge.

Curricular paths must be configured to take into account alternative learning paths among students. Just as alternative thought processes can be identified, so too can the means by which students learn be identified. The experienced professor can identify that students may come to understanding through exercises of making, through understanding from intellectual processes and by making connections among disparate sources of information and artifacts. It is as important to unfold a student’s learning inclination, as it is to bring the student to a level of competency in design process. This is a foundational concept that is critical to creative inquiry.

In the context of professional education it is important to understand the blurring of the boundaries between student and professional life. A curricular experience in the study of architecture must find the bridges between the academy and the profession. This continuum connects the earliest learning experiences with those of the most seasoned professional. It reminds us that the unfolding of understanding that comes with the study of a profession is a life-long experience. This understanding erases the artificial boundaries between school and the office.

Unfolding layers is the primary mission of a curricular path. It is through this experience that a student matures. It is the process of discovering the essence of the individual's creative spirit.

6. **Foster the Urge to Make**

*Connect the Brain, Eye and Hand*

In a time when every temptation is to create a curricular path founded on the virtual there must be a commitment to the real. The connection between the brain, the hand and the mind is only accomplished by employing all three simultaneously through a process of fast and dirty modeling. The hand drawn sketch is valuable because there is no intervening software to moderate thinking. It is the reflection-in-action referred to by Donald Schoen is dependent on an immediacy that can only be accomplished with a sense of urgency. Making and thought are therefore interwoven in such a way that the urge to make is satisfied.

*We can neither of us avoid this work. And there's another thing. I've begun to see how we can't understand it either, since each new foot (of progress) reveals a new effect, a new purpose. It's senseless, you think. It frightens us, it's unreasonable. But then – since when did God ask the chosen ones to be reasonable . . . Even in the old days He never asked men*
to do what was reasonable. Men can do that for themselves. They can buy and sell, heal and govern. But then out of some deep place comes the command to do what makes no sense at all – to build a ship on dry land; to sit among dunghills; to marry a whore; to set their son on the altar of sacrifice. Then, if men have faith, a new thing comes.

William Golding: The Spire.

The urge to make reminds us that the skills associated with professional practice involve the act of making. It is the tangible result of a creative decision process that is its ultimate test. No professional curricular pattern can flourish without the connection to making. Accountability lies in what is physically realized. Accountability rests in our hands.

God gave us the country. The skill of man hath built the town.

Varro A.D. 50.

Santa Barbara County Courthouse, Santa Barbara, California.
Photograph by Marvin J. Malecha.

7. Embrace the Professional Culture

Value the Inheritance of Generations of Practice

The study and practice of design lie along the same continuum. Too often the temptation is to see differences and to draw lines between them. A curricular plan that purports to prepare individuals to enter design practice must, must, give careful consideration to the professional culture that defines design and architecture practice. This is the most fundamental definition of a professional program. The design professions have a rich history that includes the development of the legal instruments that guide our lives as professionals. By studying the history of practice we can know the origins of the contracts and procedures that give definition to the responsibilities of design professionals. It is by studying the profession that we can discern the complexities of situational ethics rising as the architect must make judgment in the midst of action. Through the study of design practice it will be essential to examine the evolution of the role of an architect from the provision for service to the increasing importance of knowledge generation. The architect as a knowledge provider returns the architect to the most important position of orchestrating the project.

As a professional curriculum evolves the study of practice must be given equal status to the study of history, theory or building materials. Only by taking this body of knowledge seriously is it possible to witness the impact of ethics on professional judgment. The commitment to this subject matter cannot be relegated to the periphery of the curriculum. Such studies become a touchstone for the student along the path toward becoming an architect. It is a subject they will revisit throughout their life in design.
It is important to recognize that professional culture and the academic world may in fact be at their best when each are serving as the conscience of the other. A professional education must plant the seeds for a mature relationship between practice and the academic experience. For this reason an enriched relationship among the most senior and the most junior members of the profession must be encouraged as an aspect of professional education. This approach has within it the redefinition of the core of design practice. It defines the moment when learning becomes the foundation of practice. The development of the concept of the design office as a Learning Organization is an opportunity to foster a historic redefinition of practice founded on knowledge. It is the opportunity to draw the academy and the professional office closer together.

The object of this reconsideration is the search to find the appropriate linking of practitioners and academicians. It can only be accomplished if the curriculum makes provisions for the messiness of practice.

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**8. Have Fun: Work is Joy!**

*Risk, Exploration and Joyful Noise*

As much as a professional curricular experience must be accountable to professional competencies and culture, it must also address the whole person. It is through study that the individual must have the opportunity to connect personal aspirations with the necessity of preparation for work. It is through this exploration that alternative roles in the profession and complementary sectors may be introduced to the student. It is also critical that the metric for the success of a curriculum include personal measures of success as well as accreditation and professional measures. A comprehensive education experience includes the necessity of an international experience, capabilities in the manipulation of technology, cultural experiences and critical thinking. In this context the student is encouraged to engage in free inquiry and exploration drawing inspiration from many sources.

The curriculum must get beyond a preoccupation with credentials. No less design leaders than Walt Disney and Charles Eames advocated for allowing for having fun in the process. Silliness in itself can foster innovation, lighten the mood of an intense process and make room for a fresh perspective. Silliness frees the spirit and reveals the true spirit of the designer. A curriculum that has no place for free exploration smothers creativity.

It is also important that a curriculum include within it the formation of a network of peers and friends. The development of networks begins with collaborative exercises and builds into
the relationship between teamwork and individual performance. The observation of the Walt Disney Imagineering Group is insightful.

Do just about anything to solve a problem. Have a positive attitude. It will be hard, but don’t act like it’s hard. Be a student and be a teacher. Be inclusive and make sure that everyone has a seat at the table. Be flexible. Learn to recognize the value of untargeted thinking, both creative and applied. Never give up; remember that there is a way to make it work. Wear lots of hats. Be respectful. Trust experts. Explore. Make common cause with others, and learn from them. Be flexible. Listen. Cultivate a Zen like ability to be unattached to your idea while being passionate about it. Contribute, change, go with the flow. Be adaptable, and open to different opinions and experiences. A successful organization is introspective. Always ask, “what’s next?” Most of all, have fun.

Walt Disney Imagineering, The Imagineers.

Finally, every curricular planning effort must address the question, how is the student encouraged and rewarded to take risks? The creative spirit must be encouraged to venture, this is only possible when the culture of design study establishes meeting the program requirements as a baseline and celebrates those individuals who push limits of understanding and capability. The willingness to fail early and often in pursuit of the better idea is an essential aspect of a curricular experience. This concept is considered an essential aspect of design thinking and is frequently cited as an important characteristic of the successful design office.

9. Make it Personal

Commitment to the Cause

A successful curriculum is dependent on the champions who provide the leadership. A curriculum never has meaning as an abstraction. It is given its life by the honesty of those who teach and study along its armature. Its success is dependent on those who aspire to leadership. There are those who belittle such an approach. The logic is that a curricular path is the result of a series of deliberations that determine the balance of coursework. The argument is that a curriculum must be a consensus driven document. Such an approach is further reinforced in those places that require accreditation. Certainly these are factors that must be taken into account but too often checklists of competencies substitute for the necessity for passion and the dive that comes from personal commitment to a cause.
Those who develop the armature of a curriculum must draw on their own legacy, their own experiences and their own passion for their discipline. Those who lead must know deeply who they are and what fundamental values drive their passion.

Those who aspire to lead must make it personal. The composition of a curriculum is only words, trapped words, without the heart of those who aspire to teach. If passion is lost to a negotiated list of competencies there is no chance for excellence. There is no chance for the distinction of the program.

Closing

The development of curriculum is best understood as an organic, continually transforming, process. It will evolve as those who teach within it evolve. A curriculum that is fixed is in decline. The curricular patterns of the future will no longer be closely controlled linear checklists. New forms of education are ubiquitous. Universities are in the process of being remade. Distance education, study abroad, embedded education models including internships and service learning opportunities are causing the armature of a curriculum to be a pulsating structure. At the core of this structure is the culture of the creative professions addressing concepts of ethics and processes of design thinking. The first pulsation away from the core are concerns of the context of building including society and the profession, the base information comprising a body of knowledge and the ability to model alternatives. Away from this pulsation are student self directed explorations as well as ventures into new forms of design practice. This is the model, comparable to industrial models of mass-customization that students who have grown up in a gaming culture expect. We can expect that students will no longer take all of their academic credit from one institution. The generations of students to come will expect nothing less of us than the ability to draw upon new technologies for all of their courses including the still sacred studio. It is through this pulsating model of curriculum that students will assert their personal learning process.

The resistance to this impending evolution will dishearten students who have been empowered by the dramatic capabilities delivered to the education experience by technology. It will cast faculty into a role that is closer to disciplinarian or regulator than mentor and teacher.
1948 a series of automobiles were introduced to the American market that had driving and speed capabilities once only reserved for the wealthy. This was made possible by incorporating technological advances learned from WWII fighter plane assembly. However, this technology, no matter how advanced at the time, would today be considered primitive. Similarly, the standards of professional practice have been raised. Yet, we have not significantly advanced our attitude toward the ways and means of the design education experience. Even the cutting edge moments of the Bauhaus are, by today’s expectations, in need of reconsideration and adjustment. We are in jeopardy of becoming like the cutting edge automobile from 1948 frozen in place by tree emerging from its engine compartment.
The non-verbal Expression of Building Design and its Teaching Importance for the Relative Fields of Urban Design and Landscape Design
Architectural design as a non-verbal activity and the importance of non-verbal teaching in the architectural studio lessons

A colloquium having as object the architectural education has to examine a large number of practical issues.

For example, it has to examine the condition of schools’ finances in a period of economic crisis, the conditions of international academic cooperation in an extended field of European or worldwide relations, the critical transformations of architectural practice under the impact of the contemporary technology improvement.

However there is a central subject that seems to be crucial, independently of the minor cultural and economic transformations. This subject that has to be placed, according to our opinion, at the very center of our theoretical and practical examination, concerns the specific identity of the architectural expression. In a clear way, though architectural “discourse” is partly carried out by verbal means, the central part of the architectural production concerns non-verbal design process and construction guided by non-verbal design documentation.

The above specific state of non-verbal expression constitutes the core of the professional practice and, in this way, it also constitutes the core of architectural education. Neglecting this special quality of architectural education means not being able to understand the tremendous lack of expressivity that the majority of first year students of architecture have to overcome in order to positively continue their studies.

We sometimes attend lectures on architectural studies, by education experts whose academic background is related to psychology, to pedagogy or, in a more general way, to sciences having a strong affinity to verbal communication. Clearly describing our deep suspicion, we shall point out that they have never had the experience of design, that they have never acquired the experience of this special type of expression that constitutes the core of the architectural design ability.

To really understand this special design ability, a pedagogue has not to just try sketching or imitating a designer’s effort but, what is more, he has to acquire an expert’s efficiency. There is no way for somebody to teach violin playing, by just using his general appreciation of music or by just transmitting the experience of an autodidact trying to play violin in a primitive way. Even if he would like to express his opinion about violin education he would only speak about educational generalities, about the need for example of “sincere” communication between students and teachers. However such trivialities concern education in general; they concern every type of educational activity in general and not architecture in particular.

Going beyond the metaphorical examples we have to approach again the territory of the architectural design and insist on the remark that, for the majority of the newly accepted students in the Schools of Architecture, design consists a completely new language, never before seriously taught to them. Let us be even more exact. This language, though highly elaborated through centuries of constant architectural practice, is not fully codified compared to verbal expression.
Architecture seems not to be the type of the codified expression that semiotics could describe as a “langue”, whose syntactic rules may be clearly presented; it is rather a type of expression less strictly codified. It rather seems to be, according to the semiotics theoretical categorization, a vaguer, loosely codified expression system – a kind of a “langage”; a kind of a generalized communication system whose details of structure have to be taught through a mimetic repetition of the design process, at least during the first steps of teaching.

So when speaking about the “study” of architecture, we don’t exactly mean the same activity as the one concerning the study of law or the study of literature. In those two domains the teacher “speaking” to the students uses the same type of expression as the one introduced by the corpus of the practice that is taught. The teacher is thus addressed to his students by speaking, while a professor of architecture has, during the studio lessons, to address to his students by using, besides verbal communication skills, design skills. It is because of this very peculiarity that I was rather wary, during my personal studies in architecture, towards competent speakers teaching design lessons without practicing themselves architecture design.

“Mimesis” of architectural design skills in Schools of Architecture is largely based of course on the examples offered by other, older or just more skillful students. It is largely based on the general design “atmosphere” created in the Schools and in a broader sense in the architectural community.

It is what often happens within professional architectural teams. A senior architect, through his design skill, may usually be a leading example for the creation of the general design personality of the team. However he may diminish his design participation through the years, occupied with the managerial work of the office. He may gradually lose his capability of composing and may little by little be transformed into a managerial member of the staff. Needless to say that, large organized architectural firms do need such personalities and what is more architecture comprises an important element of inner organization that must not be neglected. Architectural practice means primarily organizing or “structuring” spaces, constructional elements, and teams of work as well-- but it also means the use of a specific type of expression that constitutes its central differentiating element. In the case of a professional architectural team, the lack of a central design personality may be counterbalanced by a general atmosphere of design tendencies.

Concluding with the first part of the article we have to stress once again the peculiarity and the importance of the studio lessons. Studio lessons need more professors per student unit, as well as more educational hours. That means that studio lessons are costlier than a lecture in an auditorium, delivered to a larger audience. After the lecture the students may go to the library or to their houses, continuing in a way their lesson by studying on their own. However in design studios working together, for a longer period, under the help of a tutor seems extremely useful, especially during the first years of the academic study, for the development of the projects.

Unfortunately, the above type of teaching guidance has already been severely criticized recently not only for pedagogical reasons but also for economic reasons as well. “We have to invent new modes of teaching”, fellow professors proposed, “in order to accommodate larger number of students in less time”. Such an effort however cannot, we strongly believe, be directed towards the predominance of the verbal presentation in a studio lesson.
Building design studios and their relation to urban and landscape design

A second part of this article tries to stress the opinion of the author that building design skill offers an excellent help for the mastering of other design fields, as for example of urban design and landscape design.

Though we cannot simplify our view by reproducing the proverbial sentence of Leon Battista Alberti, according to which "a city is like some large house", we may insist on the aspect that a city consists of a large number of buildings. In this way having a feeling of building design may offer a feeling of the significance of the buildings proposed in an urban design scheme – a feeling of their structural validity, of their compositional importance and even more an extremely useful sense of scale. However even those remarks seem to be extremely simplistic in comparison to the most important element of design intuition that building architecture may offer.

What principally building design proposes, is a method as well as a system of design, that may offer a central way of thinking, according to which other directions of design, as urban design or landscape design may be developed.

What does building design offer? It offers a correlation of construction to spatiality, a relation which is already abstracted, which is already formulated, schematized, as an abstract, graphic simulation form. Nevertheless, this graphic representation retains enough denoting hints concerning material reality. In this way an architectural drawing of a building is by no means the real thing – however the result is not just an image of vague aesthetic validity, as a painting is. It corresponds to an abstract representation using scale dimensions, space sequences and construction relations that try to prefigure the final built structure – that is to say using qualities that are important for the description and the prefiguration of any spatial structure in general.

What is more, as the experience of a building seems closer to the human body, as it seems more articulated than the experience of the vast urban or landscape sites, the above mentioned qualities seem easier to be understood through building design. In this way Albertis’ old dictum was not simplistic at all, both from an operative and a historical point of view. On the operative level Alberti was right. We may develop a feeling of urban formation through building insight. On the historical level Alberti seems to be even more correct. Renaissance civilization developed the first modern urban renewals without possessing an already accustomed extensive experience. So it was the experience of the building structure that offered the guiding lines for the urban design.

During the same historic period, that of the Renaissance, the building design paradigm appears to be equally crucial for the development of the landscape design. Looking at the Italian Renaissance gardens it is easy to remark the predominance of the building image, imposed on the outdoor space of the “giardini” and on the forms of the planting material. Many formations of such gardens seem to be rooms without roof – open-air garden rooms with stone walls covered by greenery, enclosing areas of garden plantation or even garden rooms created with green vegetal walls. The Italian word “stanza”, meaning room or hall, proposed for those garden formations is completely acceptable. They seem to be rooms, “stanze” in plural, with doors and windows cut out of their green wall structure.
Even the creation of the Renaissance artificial perspective, the “prospettiva artificialis”\textsuperscript{3}, though related to the open space either of the urban or of the “extra muros” landscape, is highly anchored to the building existence. Describing the formalized perspective, the Italians of the Renaissance era usually used the word “finestra”, window. Perspective views correspond to images created through the supposition of an existing building opening, of a building window.

We have just analysed that the birth of the modern landscape concept as well as the birth of the modern landscape design had been intimately related to the building construction, which seems to be the central structural mode for space insight through many centuries. We shall argue in addition, insisting on the opinion that this cultural and professional condition has not stopped to be operational during historical periods closer to us and that what is more, it may still be valid for the teaching of landscape architecture lessons, to students of Schools of Architecture.

In 1930 the landscape and garden designers in the United States promoted a professional manifesto, signed by the garden designer Glenn Rose. The title of the manifesto was “Freedom in the Garden”\textsuperscript{4}, while the context was less aggressive and more oriented towards a number of propositions for the amelioration of the landscape design practice.

Among those propositions we may find examples concerning composition strategies, as a house plan or a modern abstract painting. The house is the “Brick House” by Mies van der Rohe, a rather heavy volume house, whose plan however seems much more extrovert. If structural building elements could be replaced by vegetal material, the plan of the house would be transformed to a landscape design proposal. In this way, the plan proposed to garden designers and landscape architects is not a concrete example to be copied and constructed, but rather a general paradigm indicating compositional analogies between building design and landscape design. In both cases abstract simulated lines or orthogonal forms correspond to structural elements that may in their turn represent “hard” structural materials, as walls or concrete elements, or vegetal structural materials, as individual trees, rows of trees, or lines of bushes.

Besides the van der Rohe’s “Brick House”, a second example is also proposed by the American landscape manifesto; it is the painting “Rhythm of a Russian Dance” by the Dutch painter and architect Theo van Doesburg. This second example, even more abstract than the previous one, clearly indicates a composition strategy according to which planting elements may be viewed in an abstract structural way, closer to the architectural design than to the immediate nature of the vegetal materiality, used in landscape formations.

In the graduate and postgraduate lessons concerning landscape design, in the School of Architecture of the National Technical University of Athens, the author of the present article, has introduced the term “schematization”, in order to describe the structural abstraction used in order to turn natural vegetal elements into compositional formal elements, “schemata”.

Both words “schematization” and “schemata” may be related to the theory of “schematismus”, introduced by Immanuel Kant in his Critique of Pure Reason. In this central for modern western philosophy text, the term “schematismus” describes the abstraction exerted by human intellect on the exterior reality, in order to control existing multiplicity by a systematic, struc-
Fig. 1-2
Project for a brick country house by Ludwig Mies van der Rohe (on the left), and Rhythm of a Russian Dance by Theo van Doesburg (on the right). Both images were used as illustrations for “Freedom in the Garden”.

Fig. 3
An open air garden composition, using “hard” construction elements (first sketch above) in comparison to the “schematization” of natural vegetal elements used in a second garden proposal (second sketch below).
tural introduction of important normative descriptions. Thus a cycle may be accepted as an abstracted form, corresponding to every concrete object of circular like characteristics. A natural law, describing natural phenomena, is also a normative description, abstracted from natural reality, which may correspond to a variety of real conditions that present a common core of characteristics.

In both cases we have proposed a formal description; an abstracted form of a geometrical figure at the first example, the abstracted form of the natural law at the second. A form corresponds, as a term, to the Greek word “schema-σχήμα”, and in this way “schematismus” may be presented as a theory for intellectual formalism that seems indispensable for human activity, for thinking, designing and constructing as well.

Theory, sciences, constructional practices and even everyday activity, thinking and acting in general, are equally founded on the possibility of abstracting or neglecting all trivial details in favour of the important, principal qualities of the complicated reality.

Fig. 4-5

Landscape intervention at the territory of Acheron river sources, in Epirus, Greece. Vegetal forms have been treated as “structural" - organizational elements, possessing perceptive validity.

Diploma project by A. Kafantaris, V. Koliaki, D. Sanidas - School of Architecture NTUA - 2012 (professors M. Tzitzas – K. Moraitis)³.
Having just formulated the above general remark, it is not surprising to relate landscape design in particular, to formalism, to schematization. However what is historically important is to note that formalism in landscape design, for many centuries, has been related to the building architecture forms. This correlation is not valid for Renaissance and Baroque “formal” gardens only, but even for modern examples of the last century, as the modern American manifesto “Freedom in the Garden” clearly proves. Even during the 18th and 19th centuries, when natural like landscape formations were designed, schematization still persisted; not according to architectural compositional prototypes, but in relation to painting compositional modes.

Fig. 6-7
Landscape intervention at the urban territory near the ancient cemetery of Kerameicos, in Athens Greece. School of Architecture NTUA, Landscape and Public open air Spaces Design Studio – 8th semester – 2007.

Project by N. Livathinos, M. Triantafillou (professors M. Mavridou, K. Moraitis)
Models of the proposal. Vegetal forms have been treated in a “schematized” way, as “structural”-organizational elements.
It is under the impact of the above cited historical paradigms and in relation to the “mimetic” reference to other design non-verbal activities that we have tried to organize landscape design studio lessons for students of architecture, in the School of Architecture of the National Technical University of Athens.

In our experience it was crucial for those lessons to use the already acquired experience of students in architectural design, as a foundation for the development of design skills in landscape projects. Vegetal forms have been treated as abstracted, schematized composition elements, relative to the graphic parts of the architectural design. As the illustrations of our exposition clearly present, they have been treated as “structural”-organizational elements, possessing perceptive validity analogous to the compositional validity of building elements in architectural or urban design.

At the end of our brief dissertation a conclusive remark may be added. Contemporary presentation technology as for example CAD systems, seem to offer an even more powerful argument on behalf of the non-verbal communication, in cultural expression in general or in the field of architectural design in particular. What is more, contemporary CAD systems present an innate “landscape quality”. Being able to simulate topological transformations or parametric “morphogenesis”, they seem to be much more appropriate to describe natural formations and their constant change. In this way, formal elements as for example foldings, formalizing the natural shape of the ground, tend to be transcribed from the domain of the landscape architecture to the domains of building and urban design. In this way the importance of non-verbal design expression as well as the profound relation between building design and landscape or urban design seem, nowadays, even more obvious.

Notes

1 General remarks of the previous type tend to remind us of the “innocent” instructions to youngsters, offered by a priest that has never had a marital life or a mature sexual activity,— instructions concerning the morality or even worse the ethics of their erotic life. The poor priest is trying in vain to validate a condition of which he has never had a concise experience before.

2 Leon Battista Alberti: *The Ten Books of Architecture-The 1755 Leoni Edition*. N.York, Dover Publ., 1986. Book I, chapter IX, page 13: “for if a City, according to the Opinion of the Philosophers, be no more than a great House, and, on the other hand, a House be a little City; why may it not be said, that the Members of that House are so many little Houses…?”


5 According to ancient Greek Mythology, newly dead were ferried across Acheron River by Charon to enter the Underworld.
Session 1
Learning Quality and Curriculum Structure

Can the structure of the curriculum affect the quality of learning?
Which are the possible curriculum reforms that we can make in order to assure better conditions of learning?
Which are the current trends of updating curricula taking into account the established values and contemporary concerns of architecture, the outcomes of avant-garde experimentations, the new advanced technological possibilities and the dynamics of the unstable market?
To what extent these trends take into account the quality of learning these curricula can assure?
How can we raise the quality of learning in architectural design as a melting pot of architecture knowledge and architectural creativity?
Are there any good practice examples that would be useful to be disseminated?

It is broadly accepted that a cross-disciplinary understanding of architecture, an interdisciplinary investigation of its nature as cultural manifestation of our every day life in space and a cross-disciplinary creative architectural practice constitute a permanent objective of the contemporary architectural education.

Which pedagogical strategies and academic structures we must implement in order to assure an interdisciplinary learning?
Which forms of architectural design studio we have to develop in order to enrich design education with a trans-disciplinary spirit?
Which subject areas and disciplines can have a significant impact on this objective?
Chair:
Marvin Malecha, Raleigh, USA

Introductory panel:
Antti Ahlava, Helsinki, Finland
Saverio Mecca, Florence, Italy
Vicente Mass Llorence, Valencia, Spain
Ted Landsmark, Boston, USA
Donna Robertson, Chicago, USA
Wolfgang Haack, Wiesbaden, Germany
Jury Soolep, Umea, Sweden
Antti Ahlava
Head of Department of Architecture, Aalto University, Helsinki, Finland

What do we Want a Student to Consume and Produce during Studies?

The basic question related to the quality of learning is: which new competencies and outcomes could be the results of a good curriculum reform? Does this mean new courses? New content matter for courses? New type of products made by the students? Abandon courses? Discarded subject matter? – I will use our university – Aalto University in Helsinki – as a case.

Our Department of Architecture has an international reputation stemming from the Finnish regional architectural culture. The school accepted only 8% of applicants in 2012 and according to this fact and the success of graduates is the best architecture school in Finland. In Aalto University, architecture is regarded as an art requiring learning of professional practice, personal artistic development and technical knowledge of building. Our teaching staff consists of leading practitioners who have an active career in design projects and competitions. The pragmatic tradition of the school has maintained an esteemed line and guaranteed a high professional skill of the graduates. Talking in terms of national cultural stereotypes can be dangerous, but there is something typically Finnish in the pragmatic and hands-on attitude of our architectural attitude.

One aspect of this pragmatism is that most of the students work in architectural offices parallel to their studies. This causes long study times (nowadays 9-10 years generally for an architect’s accreditation), but guarantees the practical abilities of a graduate. One could say that half of the education comes from architects’ offices through this master – apprentice relationship situation in offices.

The Department of Architecture has degree programs in architecture and landscape architecture. Building design, urban design and planning and landscape architecture are closely integrated together in our education. Basically any Finnish architect can succeed in all of these fields with the same education. Our landscape architects understand also building design. The integration of the building, urban and landscape spheres means that buildings cannot be conceived separately from their urban and natural context.

About 550 Finnish degree students in architecture, 120 Finnish degree students in landscape architecture and c.70 Finnish postgraduate research students study at the Department. The annual amount of international exchange or guest students is about 70. These numbers mean that our school is quite national, almost “regional”. We are not part of the “global” sphere of architecture schools, where the same international star architects teach anywhere and where the conceptual development of architecture is not always contextual. Instead, we have a strong own cultural and architectural tradition. This does not however mean that a small architectural culture couldn’t attain class, international interest and influence.

The Department is situated in Otaniemi, Espoo, on the campus designed by Alvar Aalto. The design of the campus area is based on the idea of a forest settlement by a natural coastline and this relaxed and natural setting also influences the mindsets and activities of students and staff. Alvar Aalto’s campus design can be seen belonging to the genre of Finnish mid-century natural simplicity with such other artists and designers as Kaj Franck and Tapio Wirkkala. This
Finnish modernism achieved international reputation in foreign magazines and exhibitions, spreading the ideology of simplicity and organicism.

The Department is since first of January 2010, part of the new Aalto University, created through a merger between the Helsinki School of Economics, the University of Art and Design Helsinki and the Helsinki University of Technology. The vision of the university is to enhance multidisciplinary collaborations and knowledge. The ideas behind the birth of Aalto University give also the social, economic, technological and cultural base for the development of our department. It is clear that Aalto university a national project; an attempt to utilise the multi-disciplinary energies of a small country in a collaborative manner. The development of Aalto University is a national project, financed by the state and many large technology companies, who are also represented in the private foundation governing the university. The companies are expecting a new generation of workers, which is more cross-disciplinary and has a better understanding of economical and social tendencies of the world.

Starting on the first of January 2012, the Aalto University School of Art and Design and the Department of Architecture of the School of Engineering merged to form the new School of Arts, Design and Architecture (ARTS). The first part of the school’s name emphases human-orientedness, which is the cornerstone of all teaching and research. There is a Nordic ideological background for this: the advanced welfare state, which takes care also of the disadvantaged. The second part of the name centers on practicality and good design, which produce better and more responsible living environments.

Some parts of our national mythologies are very much based on the idea of lone heroes, but we trying a more communal and perhaps Swedish model in this sense now. The departments of the school will continue to operate at their current facilities at Arabianranta in Helsinki and Otaniemi in Espoo until the new premises needed by the school are completed at Aalto University’s main campus in Otaniemi. This is estimated to take place in 2015.

The world’s best universities in the fields of architecture, design and art are often characterized by a strong tradition in the education of art, which is integrated with competence relating to design, commerce and technology. The core of research and teaching at Aalto ARTS, too, consists of art, which has an important position in the research, thinking, methods, expression and culture of the School’s various fields of study. In the community at Aalto University, art is compared with scientific basic research; research and art outline existence from their own starting points. Aalto University is aiming to be an international pioneer in scientific-artistic integration.

The success and uniqueness of the School of Arts, Design and Architecture are based on a close integration of research, teaching and artistic activity as well as cooperation with industry, business life at large and society. According to its mission and strategy, Aalto University works towards a better world through top-quality research and teaching and educates responsible experts as society’s visionaries. The Aalto University School of Arts, Design and Architecture realizes the University’s mission by promoting responsible and user-centered design as well as creative attitudes and implementation in different scales and media. Multidisciplinary research and independent artistic activities create a foundation for the University’s operation. Our education is supported by independent, cross-disciplinary, human-centered and practice-based research and artistic work.
Societal Changes

The motivation for changes and reform in learning tends to stem from the changes in our context – the operational field: the society and culture. Based on the results of the Research Assessment Exercise (RAE 2009), as potential areas of strong social impact, the research assessment exercise emphasized art and architecture. The assessment highlighted digitalization and services, the service economy, sustainable use of energy and natural resources as well as a human-oriented environment as ascending, multidisciplinary themes. All the various fields of the School of Arts, Design and Architecture have a central role in the development of a human-centred living environment, a creative society and a vital culture.

At the same time, everyone is touched by the demand for sustainable development and the growing need for comprehensive understanding and responsible management of environments in different scales as well as for creative cultural development. These factors are also centrally displayed in the premises of change in innovation thinking.

From the basis of its unique method of operation, Aalto ARTS brings together the areas of designing and implementing human-oriented environments. It responds to the change in innovation thinking where human- and user-centered attitudes are emphasized along with a technological approach. Finland has recently been very successful in technology industry (with high-tech companies like Nokia and Kone) and technology is generally considered important for the national competitiveness. The cold climate also emphasizes the need for developed technology for example in building insulation and durability. However the human-centered approach strengthens the status of architecture, art, media and design in the Finnish culture and economy and society at large and solidifies research and teaching based on a humanistic and cultural tradition inside the university. It also profiles architecture and education of art in relation to other universities in the sector on the basis of cooperation and interaction between the fields and creates a foundation for the development of social and cultural innovation as well as for production-related, financial and structural solutions required by sustainable development. The former mythological cultural background of design education has slightly been turned into a pursuit for more calculable machinery for international success.

There are four major changes affecting our contextual background now.

Big Change 1: The Notion of Architecture

The notion of architecture has changed.

Art plays an important role in the uniqueness and identity of Aalto University School of Arts, Design and Architecture. Art is considered a foundation for enthusiastic and energizing discussion and action, with strong connections with ethics, aesthetics and ecology. Art is also a key to the construction of a learning experience and attitude.

The basis for art and research at Aalto University School of Arts, Design and Architecture are critical thinking, creative problem solving, open-mindedness and courage. The School’s set of values also emphasizes responsibility and the desire to make the world and society human-oriented, open and tolerant. In our conception, creativity aims at a better everyday life. Emphasizing the quality of the everyday instead of luxurious design is at the core of not
only Finnish, but Nordic architectural and design tradition. Creating good results from limited resources is our skill.

What's the role of art in Finland in general? Internationally most successful Finnish artists are nowadays composers and conductors of classical music. Finnish photography and media art is respected, but architecture is generally considered not as progressive as in the 1950s for example. Simultaneously architects have lost some of their good salaries and societal influence. By associating themselves with both engineers and artists, architects are often difficult to be understood in the society.

As art it is part of the reorganization (merging) of the production of the built environment and media. As design it is part of the communicative change and the demands for social innovation in society. As technology, architecture is increasingly dependent on digitalization.

These contextual changes have partly caused major pressures touching our department: Its administrational restructuration, new interdisciplinary action with engineers, economists and designers, and the new emphasis on user-driven, human experiences.

At Aalto University, we have also implemented certain reforms related to the changing position of architecture in the economy. We have numerous interdisciplinary courses and study programs.

In this mission of collaborative action, he strategic development of Aalto University and its certain focus areas support the importance of architectural design and thinking:

- The development of a human-friendly environment, stemming from a humanistic cultural tradition. Architecture and arts play a special role in this development.
- A holistic professional view, basing on the comprehensive view of the environment and responsive management, as well as collaborative working methods. The pursued management of the interrelationships between the different scales of the environment supports also this holistic view.
- Profiling architectural education through multi-disciplinary collaborations.

These concepts have become implemented in the merger of the Department of Architecture and the School of Arts and Design, as well in the School's study program reforms.

There is something un-Finnish in the boldness and high aspirations of the targets of the success of the university. Modesty and failures have more mythological resonance in the stereotypical Finnish mind-set. The systematic approach is still typical.

Consequently, the philosophy of the new School of Arts, Design and Architecture tries to cause changes in the professional roles of so-called creative professions:

- From product and service towards User experience and user-centredness
- From the role of design professionals at the last stages of a project towards designers having a strong role in the idea and concept stages of projects
- From a culture of specializing towards a multidisciplinary culture and scale management
- From a dialogue within professionals towards communication that has an effect on society with inter-field discourse
- From process management towards value-based leadership.
We are also encouraged to implement changes in our modes of action:

- From training professionals for technical roles towards deep academic thinking and development
- From graduates to work in the domestic market towards graduates to take on international tasks
- From 1% of instructors from abroad towards 50% of instructors from abroad
- From study and instruction towards learning experience
- From visibility as a primary goal towards changing the world and society
- From independent own projects towards cooperation projects
- From isolated units, where everyone works independently towards energising and inspiring discussion on the content of art and academics.

The university has also constructed specific creative working environments for implementing the strategies: The Aalto Tongji Design Factory and Venture Garage, for example. The former is a facility for interdisciplinary and international projects and the latter a business incubator for students.

Interdisciplinary learning takes place on many levels within the university:

- On masters level programmes; for example International Design Business Management IDBM, Creative Sustainability and Entrepreneurship Minor.
- We also have numerous separate interdisciplinary courses, e.g. on ethics, goodwill development, knowledge communication and visualization and the future of product design. In addition, we have many internal mobility courses.

**Big Change 2: Digital Technology**

The creation of architecture is increasingly digital. As an answer to this challenge, we are teaching new computer programs and utilising digital printing at the new cross-disciplinary Aalto Laboratory of Digital Design ADD.

**Big Change 3: Competitive Innovation Policies**

Competition between universities encourages us to define also departmental focus areas. Wooden architecture has been one of these. We are also developing methods encouraging methodological experimentation and have established a new professorship for this purpose. Aalto University School of Arts, Design and Architecture create a foundation for research and education in user and human centred design where usability relates to environments and channels of different scales. The user-centred approach is strongly linked to interaction as well as active participation by individuals and communities. This social approach is clearly culturally embedded in the whole nation and now also supported by the present law of land-use and construction, which emphasizes participatory processes.
A common frame of reference to the areas of research at the School of Arts, Design and Architecture is formed by sustainable development and its financial, social, cultural and ecological dimension.

The uniqueness of research is enhanced by the connection between theoretical expertise and practical relevance, on the one hand, and artistic expression on the other hand.

**Big Change 4: Unstable Market Economy**

In order to try to guarantee good professional qualities and working opportunities, our emphasis in teaching is on architectural realisation. The collaborative courses are based on architect’s special role in concrete building and landscape and urban design.

We are also using our own campus area – Otaniemi – as a test-bed: architecture and landscape architecture students are integrated in the planning and design of the campus.

**New Competencies**

The future of our profession requires new areas of competence included in our curricula:

- sustainability
- wellbeing (humanitarian aid)
- collaboration / co-design
- project management and development

**New Products**

The recent Teaching Evaluation Exercise highlighted the fragmentation of teaching at our school. The abundance of degree programs turns them into independent entities with little communication between them. A key objective based on the results of the teaching evaluation is to reform degree programs by whittling down the number of programs and clarifying their profiles.

Architects’ changing role and the developing society require us to create new kind of products and to utilize new methods in attaining these:

- multi-professional design
- research and teaching integrated
- students utilized actively in the development of the own environment

In the end I would like to point out challenges in curriculum reforms. Increased flexibility and interdisciplinarity can also threaten the solidity of good educational practices. Crucial questions must be answered:

*Are the curriculum reforms based just on students’ own active interests?*

*Is the propagated multidisciplinarity threatening architect’s accreditation?*
“A Klee painting named ‘Angelus Novus’ shows an angel looking as though he is about to move away from something he is fixedly contemplating. His eyes are staring, his mouth is open, his wings are spread. This is how one pictures the angel of history. His face is turned toward the past. Where we perceive a chain of events, he sees one single catastrophe, which keeps piling wreckage upon wreckage and hurls it in front of his feet. The angel would like to stay, awaken the dead, and make whole what has been smashed. But a storm is blowing in from Paradise; it has got caught in his wings with such violence that the angel can no longer close them. This storm irresistibly propels him into the future to which his back is turned, while the pile of debris before him grows skyward. This storm is what we call progress.”

A quote from Walter Benjamin: Theses on the Philosophy of History, VII (1940; first published, in German, 1950, in English, 1955)
Saverio MECCA
Dean, University of Florence, Faculty of Architecture, Florence, Italy

A general outline of the School of Architecture of Florence, Italy

The Istituto Superiore di Architettura, was affiliated to the University of Florence as the Faculty of Architecture, by the RD March 25, 1936, to carry out the five-year courses and deliver the degree of Doctor of Architecture. Today the Faculty of Architecture is one of the 12 faculties of University of Florence.

From next 1 January 2013 University of Florence and Faculty of Architecture will change the organisational structure as all other Italian universities are doing.

The new one will be based on new larger Departments (24) which will organize and rule research and training at all levels, closing actual departments and faculties.

The new Department of Architecture will be one of the 24 departments of University of Florence and will rule all the research activities and training courses in architecture, industrial design, spatial planning and landscape architecture.

The courses will be coordinated by a specific structure: the School of Architecture, which is going to replaces the former Faculty of Architecture, will be one of the 10 schools of University of Florence.

The courses delivered by the next School of Architecture of Florence

During last years, under the pressure of changing times, of financial cuts and of our ministry of university, (Decreto Ministeriale 17/2011) we have revised and reorganised the structure of the curricula.

The Faculty of Architecture of Florence is offering for the academic year 2012-13 (1st and 2nd cycle) four main learning paths:

- Architectural Design,
- Industrial Design,
- Spatial Planning,
- Landscape Architecture

How many teachers?

The staff of the new Department of Architecture at the 01/01/2013 will be composed of 135 academics,
32 full professors,
43 associate professors and
60 researchers,
plus 40 no-academic professors.
How many students?

For the academic year 2012-13 we are enrolling at the first year of 1st cycle:
• 450 UE students for architectural design courses + 45 no-UE students
• 150 UE students for industrial design + 15 no-UE students
• 80 UE students for regional planning + 10 no-UE students.

We plan to change the actual composition of students in this new scenario reducing the architectural design course until to 300 students, increasing the industrial design course up to 300, and maintaining the spatial planning course at 80 student.

The commitment of the Department of Architecture in the School of Architecture

The Department of Architecture will assure the:
• 75% of credits of architectural design courses;
• 40/50% of credits of industrial design courses
• 40% of credits of spatial planning and landscape architecture courses.

The remaining credits will be assured by other University Departments (Industrial Engineering, Agronomy, Civil Engineering, Economics, Mathematics, Philosophy, etc).

Reforming curriculum and quality of learning

We think that the structure of the curriculum is really important and effective for the quality of learning. Under the pressure of changing times, of financial cuts and of our ministry of university, (Decreto Ministeriale 17/2011) last year we have revised and reorganised the structure of the curricula.

In any case, adjustments of the structure of curricula will be made on next years.

We are doing this revision according these criteria:

a. A clear-cut difference learning in each of the three cycles

The structure of the curriculum is articulated in three cycles,
• first cycle, three years
• second cycle, two years
• and third cycle.

The structure of Architectural Design curriculum is more complex: first and second cycle will be two parts of only one 5 years course.

We are planning to maintain the two years Master Course, reinforcing the International Course in Architecture, iCad, in English, which started on september 2011 and now is enrolling 40 students coming from European and extra-european countries. Starting in the academic programme 2013 a new International Course in Architecture, Master Degree (iCad), a
multilanguage (english, french and spanish) will be available as evolution of iCad delivered in english.

The *first cycle* has to be devoted to architect’s basic training, studying architectural theory and design practice, mathematics and geometry, physics and building physics, mechanics of structures, history of architecture and planning, aesthetics, sociology, building materials and elements, urban design, etc.

Both Courses and Laboritories of the first cycle are mono disciplinary.

The *second cycle* is characterized by intensive architectural design practice in 4 multidisciplinary (3 disciplines) design labs devoted to complex design problems, like Architecture and the City, Architecture and Environment, Architecture and Conservation of Heritage, Architecture and Construction. Three mono disciplinary courses, a design workshop free, a stage and a final design as dissertation will complete the two years of training.

The *third cycle* is devoted to professional and research specialization: one/two years of course of specialization or/and Masters (for example: a 2 years Conservation of architectural and Landscape heritage) and PhD courses in Architecture or Spatial planning.

*b. Students of the three training paths can share some Courses and Design Labs and study or work together*

The Courses and Design Labs sharing allows:
- to improve efficiency of academic resources;
- to improve as an horizontal transferring of knowledge, methods and skyls learning to cooperate with complementary competences.

**Updating curricula and good practices to assure better quality of learning**

I think that updating and upgrading our curricula is the main objective in front of us. I think also that we are just in the middle of an important crisis of our societies and at the end they will be quite different from today.

The Architecture is a part of the crisis and a part of the solution.

Changements are slow growing, I will try to mark some of them:

a. cities versus countries
b. all materials are building materials
c. traditional knowledge versus scientific knowledge
d. virtuality versus reality
e. ....

*a. No more cities versus countries: a new relation between city and nature*

The city and the urbanization process: at a world scale since 2011 people living in cities and metropolis are more than people living in villages and in the country. The separation/opposition between city and country, between work and holidays, between modern/industrial culture and pre-modern rural culture is no more useful for designing the future of our societies and lands.
b. All materials are building materials

The traditional building materials, related to a traditional building industry, are still important, but innovation is passing through opening to all kinds of materials as building materials, giving again more responsibility to designers and reinforcing the role of academic and, more, industrial research.

c. Traditional knowledge versus scientific knowledge: a new relation between city and immaterial heritage

The traditional unwritten architectural and building knowledge has become significant part of the immaterial cultural heritage, as Knowledge and uses related to nature and the universe and Traditional craft techniques.

This concept aims to overcome the opposition between scientific knowledge and traditional tacit knowledge, and this can affect the training of architects because they are able to use all the resources of knowledge specific to each site.

d. Virtuality versus reality: simulation and data management changing the design process

The capacity of simulating the behaviour of building systems and of managing data systems, of connecting and inter-operating simulations and data reinforce the role and responsibility of designers and support the needs of an extended design and planning of our territory.

e. Other elements characterizing the changes

The debate on climate change is one of the most heated and important of our time.

The knowledge of the dynamics of the various forms of land use and consumption is an essential step to plan the growth of a territory according to values of order landscaped, historical, cultural, social, environmental and economic.

It is essential to understand how and why decisions in spatial planning and in planning mobility system impact on emission of greenhouse gases in an area.

Pedagogical strategies and interdisciplinary learning

Defining and implementing changes in a curriculum to assure better quality is not easy to do in these years.

We need to address:

a. a “natural” cultural inertia,
b. the aging of the academic staff,
c. the crisis of building sector and its decreasing role in our economies
d. the budget cuts to universities that reduce the normal turnover and contracts to new teachers

Since 2013 we are working for enriching and improving the learning path according the following main criteria.
Session 1 Learning Quality and Curriculum Structure

1st cycle – three years

- we dedicate the first training cycle to basic training;
- we integrate traditional areas of training (mathematics and physics, history of architecture, architectural representation, building and construction, urban design and planning, architectural and interior design) with new disciplines as ecology, aesthetics and sociology in order to give a greater ability to identify and manage culturally and socially complex problems;
- we begin a revision of the syllabus of each subject;
- we integrate the basic learning path of courses/semester with:
  - intensive modules (20/30 hours) for training on fundamentals of simulation and data management, CAD software, digital images, physical simulation, data management, geographical information systems, video making, managed in collaboration with students and according emerging needs;
  - workshops in collaboration with local institutions and social operators, mostly shared with other schools of architecture.

Past curriculum

<table>
<thead>
<tr>
<th>Area</th>
<th>Culture, history and theory</th>
<th>Visual arts and presentation</th>
<th>Mathematics and physics</th>
<th>Construction theory and design</th>
<th>Architectural theory and design</th>
<th>Urban/Environmental theory and design</th>
<th>Workshops/stages</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cycle</td>
<td>16</td>
<td>20</td>
<td>28</td>
<td>38</td>
<td>46</td>
<td>12</td>
<td>20</td>
<td>180</td>
</tr>
<tr>
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**New curriculum**

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**2nd cycle – two years**

- we dedicate the second training cycle to architectural design training;
- we integrate, in all the Design Labs and intensive Design Workshops, the disciplines of Architectural Design with other disciplines which are effective to give a greater capability to identify and manage the integration of different and relevant methods and skills to culturally and socially complex design problems;
- we begin a revision of the syllabus of each subject;
- we choose that each Design Lab or intensive Design Workshop must address a real design problem through specific agreements in consultation with public and/or private institutions and operators in relation with real stakeholders.

**Conclusions**

Two main assumption as scientific scenario of quality of learning and training.

1. The academic training is only a part, one third may be, a fundamental part since more 200 years, of the training process of architects, together with personal experience and learning, and professional training.

2. On the scientific side the learning process (and training process) is not a deterministic process where inputs are generating an output with an high level of reliability. Instead it is a deeply undermined phenomenon and process. The aim of measuring and evaluating it is scientifically inappropriate and doesn't have the capability of assuring society about quality of training of new architects.
This Meeting of Heads of European Schools of Architecture has in its 15th edition a topic which is absolutely connected with the concerns of the School of Architecture which I represent.

I started leading the Valencia School of Architecture last July and one of the first tasks, which we have undertaken is to review our Curriculum. Our nowadays Curriculum is only three years old, but we have to review it as a result of certain legislative changes which demand changes in the Curriculum structure.

Far from being a drawback, even meaning certain inconvenience for sure, we have decided to face this situation as an opportunity to apply these three years of experience with the current Curriculum organized according to Bologna criteria to better arrange the future plan.

Surely, the conclusions of this meeting of Heads of Schools will be very useful as long as the topic is very close to our current concerns.

In order to establish the characteristics of a new Curriculum or, in terms of this meeting of Heads, in order to establish the defining features of the Curriculum structure for our students we have to take into account at least four aspects.

- The professional competences of the architects who are going to be raised in our classrooms.
- The models of practice in the near and medium future.
- The survival and sustainability of Architecture Schools in crisis and post-crisis conditions.
- The education laws in each country.

Professional Competences

As you may probably know, a Spanish Architect is responsible not only for the creative affairs connected with the architectural design but also for the technical definition of all the elements involved in the building construction, their sizing and the control of the execution of the works.

Spanish Architects are responsible, civilly and even criminally, for the formal and functional design of buildings, for their building solutions, their structure, electrical system, plumbing, sanitation, air conditioning, communications systems and so on, as well as the sizing of the structure and all these arrangements, their measurement and budgeting. And finally we are also responsible for the technical specifications to be met by all these building elements.
Fig. 1

Model of the Valencia Historical Center.

Fig. 2

Jan Baca.
Illustration from la Casa a Mida.
This list collects it all in the building field, but we could say something similar in urban planning, despite in this case there are other professionals involved in the full wording and planning.

The economic and criminal responsibility of the Architect on these issues is exclusive and, far from being considered as an unacceptable burden, it is encouraged by the professional organizations as long as it guarantees the mandatory intervention of an Architect in the raising of each building.

Moreover, the Architect knowing and controlling the technical details of the building who has formally defined, in my opinion, improves the quality of the project.

But the time has come for us to consider seriously whether the level of development expertise and the abundance of regulations that must be met by every new building and every new project are assumable by a single person.

When I graduated as an Architect forty years ago, the day after the commencement a young Architect was able to fully develop a building project and to assume all its responsibilities. In fact, it was strange meeting Architects working for other Architects and even less admissible an Architect employed by a company. In these forty years things have changed a lot. Most of the new Architects take a wage labor as an option. Or at least it was like that before the economic crisis which in Spain has meant mostly construction crisis, paralyzing professional studios. However, as long as the academic certificate is the only requirement for the practice, our schools still provide lectures designed for ensuring the full development of all sort of responsibilities for Architects. An Architect defined by our national regulations as a generalist Architect. I really think that we need to think about this, taking into account especially the conditions for our working market within 10 or 15 years.

**Professional practice model**

We cannot avoid answering this question: Where does professional practice in Architecture go? Often, Schools of Architecture have focused on responding to the final part of the question which is defining conceptually where does the Architecture go. But we cannot forget, without betraying our social responsibility, giving an answer to the question about where does the professional practice go. We must determine if Architects role is going to evolve in just one direction or we will face new ways of participating in the shaping of the human habitat which can be attributed to Architects.

Is the generalist Architect, not only building designer but also small or big team coordinator the only option which can be qualified as being an Architect? How many Architects of that type will be necessary to educate each year? Should the other graduates of our classrooms be considered as looser?

Would it be possible to find work fields close to the Architecture which can be torn away from the central stock in order to establish differentiated Curriculum models?

Any reference to how things will be in the future, even a close one, seems to be a matter of fortune-telling, but we cannot arrange the new Curricula without forecasting in this sense. One thing seems certain, when industrial activity will reactivate in Spain, the Architect professional practice is not going to be mostly as it was in the past.
Fig. 3
Ivan Cabrera.
Ca N’Arrufat Plan.

Fig. 4
Zubin Metah.
Comunitat Valenciana Orchestra.
Survival and sustainability of Architecture Schools

This topic might look as a minor one when compared with the previous ones regarding disciplinary contents, but I think that whatever that happens to Architecture Schools and their docents is an undetachable part of our work as University managers.

The current situation has threatened the continuity of many professors some of them had to leave the classrooms because of reasons, which had nothing to do with their teaching skills. This loss of human capital may worsen in the coming years.

Spanish Architecture Schools are characterized by providing only the title of Architect. This has made them particularly sensitive to changes in the dimensions of the Curriculum, the ratios arranged by the University, the number of students who want to become Architects and other factors largely unrelated to the educational quality when considered from the point of view of teaching and learning.

It is possible to introduce in our Schools daily activities other studies close to the task of shaping the human habitat but sufficiently separated from the core of Architecture in order to be considered as separated degrees. This seems to be a common practice in some European countries and elsewhere. It would be of great interest to us to know about those Schools experience to support our demands and to avoid possible mistakes.

Educational regulations in each country

I realize that this is not a topic to be discussed in this meeting of Heads. However, I cannot avoid talking about it as long as it will have a major impact on the outcome of our work of reviewing the methods and Curriculum structure. And, as I pointed earlier, is responsible for me addressing you now.

Because of different reasons, and especially due to the Architect’s Council intervention, the future Architecture education will be structured in a five years long Degree in Architecture with no competences and a yearlong Master of Architecture which will confer the previously described competences for an Architect in Spain.

This structure not only will hinder future academic exchanges with other European countries but also any other change as those I have been suggesting. Anyway, I don’t think that we should ignore the important issues about Curriculum and practice carried away by the sheer legislation compliance, which seems exclusively geared to a suicide preservation of the classical Architect status quo.

As I mentioned earlier, this meeting discussions and conclusions could not be timelier and will be extremely useful for us.
Fig. 5
Mies van der Rohe.
Tugendhat House.

Fig. 6
Charles Jencks.
Cells of Life.

Fig. 7
Miquel Barceló.
Le Petit Amour.
Ted Landsmark
President of National Architectural Accreditation Board (NAAB) Boston Architectural College, Boston, USA

I am here primarily in my role as the incoming president of the National Architectural Accreditation Board in the United States. I take on that role in October 2012 but as Marvin mentioned, I am also president of the Boston Architectural College which is the largest independent School of Architecture in the United States.

The overall trends in professional practice at this point - a number of which have previously been referenced - are globalization and Building Information Modeling (BIM), and the talent shortages which firms are now experiencing, despite what has happened in the economy. A further trend is the specialization of practices and increased level of collaboration and integration within large firms, and also the creation of buildings less as mere structures and more as experiences that clients feel positive about.

Design education in the United States is overseen by the National Architectural Accreditation Board; there are 124 professionally accredited American Architecture Programmes, 58 of those are Bachelor’s programmes, 95 are Master’s-only programmes; 30 schools have both Bachelor’s and Master’s programmes and there is one accredited doctoral programme. I should just note that among these programmes in the United States, it really does not make any difference whether you have accredited Bachelors of Architecture or Masters of Architecture, for someone seeking to become a licensed architect. Either way students are prepared to take a professional licensing exam that sets them up for professional practice.

For comparative purposes, it is interesting to note that there are 70 accredited Landscape Architecture programmes; there are 74 Urban Planning programmes that are accredited and 77 Interior Design programmes that are accredited. I should point out that there are only about 35 or 40 schools in the United States which provide multiple programmes across disciplines, that is to say, architecture, interior design and landscape, or architecture, interior design and urban planning.

It should also be noted that within architecture programmes - I think this has been noted by several other schools that have reported up to now - there has been a decline nationally in our overall enrolments in programmes. Over the last few years, although enrolments have stabilized in the past year, in an overall sense, enrolment in American schools has gone down about 20% over the past four or five years. This enrolment has also declined in Great Britain and is declining in other programmes in Europe too.

The National Architectural Accreditation Board has established some broad standards requiring that schools meet certain perspectives, general perspectives on architectural education. Those perspectives cover the way architecture interacts with the academic community, the way it is influenced by students, the way it is influenced by the regulatory environment, the way it is influenced by the profession and the way it serves the public good. There are certain institutional support standards that NAAB expects schools to meet. It expects schools to be actively involved in long-range planning and in self-assessment; it expects that a school is going to have sufficient human resources and a strong enough administrative structure to
Fig. 1
BAC students at the Instituto de Empresa. School of Architecture, Segovia, Spain.

Fig. 2
BAC Summer Academy.

Fig. 3
Collaborative Learning, BAC Studio.

Fig. 4
BAC Students and Faculty.
support the programme. Historically, we have looked at the physical resources and the financial resources that are available to support a programme. We have also looked at information resources and data management: we want to make sure there are strong statistical reports that are filed each year and each school is required to file an annual statistical report. We also look at faculty credentials to make sure that schools are meeting at least minimum standards among the faculty members who are teaching.

The key to what NAAB has been doing, however, has been to look at educational outcomes and curricula. Those are the so-called NAAB student performance criteria. These criteria are assessed when a visiting team shows up at a school and looks at student work. The team looks at what is happening on the campus and then makes some broad determinations as to whether the students are being broadly educated. They determine whether the students are graduating with lifelong inquisitiveness, whether they are able to communicate graphically in a range of media and finally, whether the students are able to assess evidence, understand people, place and context of a building and recognize the disparate needs of clients, communities and society.

Those student performance criteria are broken down into specific realms. There is a realm of critical thinking and representation. These essentially constitute what almost amounts to a checklist of communication skills, design thinking skills, visual communication skills, documentation, the ability to investigate, fundamental design skills, how students use precedents, whether they can order projects, whether they recognize cultural diversity and whether students have skills in applied research. There is a second broad area of integrated building practice technical skills and knowledge - I will not read all of these: they are obvious; they are the key elements of what would be considered design.

What is important in this list, however, is that our recent analysis from visiting team reports as they have been out to the schools over the last two or three years is that while most schools show sufficient knowledge in most of these areas - pre-design, sustainability, environmental systems and so forth - the one area where schools fall down most consistently is in comprehensive design. This is the ability to show that their students have integrated all of these other areas into one design that reflects all of these single elements.

We also expect to see that students are able to demonstrate leadership and awareness in practice; that is, the ability to understand social and professional responsibilities. They need to understand the business of building and be able to negotiate and collaborate with each other. Students must demonstrate the ability to understand the diverse roles and to work with related disciplines. In addition, they should have the ability to integrate community service into the work that they are doing. Those likewise break down into specific items, again, almost like a checklist: the ability to show awareness of human behavior, to practice management and legal responsibilities as well as ethical and professional judgment and community and social responsibility.

What all this tends to mean is that there are over thirty student performance criteria that a visiting team looks for when they visit a campus. It becomes almost a checklist enterprise. Many of the schools, and even NAAB itself, have actually begun to wonder whether this kind of exhaustive checklist is really producing the kind of well-qualified graduate that is ready to deal with the kinds of issues that are being presented in practice. We have started to compare ourselves in terms of this extensive and prescriptive checklist to other professions. Law schools in the United States, for example, are only asked to meet about half a
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Fig. 5
Distance M. Arch Intensive.

Fig. 6
BAC Summer Academy Pre-College program.

Fig. 7
BAC student exhibition space.

Fig. 8
BAC Sustainable Design student with thermal detector.
dozen criteria. Students need to know something about legal analysis and the substance of law; they need to be able to write; they need to be able to have other professional skills and they need to know something about the history, goal structures and values of the profession. There is not, however, a checklist of thirty criteria that lawyers have to meet by the time they graduate.

Similarly, in medicine in the United States, there are only about fifteen broad criteria. A student needs to know the general premises of pharmacology, for example; one needs to have some experience in clinical practice and primary care; one needs to know about multi-disciplinary content areas; one needs to be able to communicate but the fact of the matter is that to become a doctor in the United States requires that a student meet fewer criteria that to become an architect!

So NAAB, in terms of doing the analysis for a total review of our accreditation standards which will take place next summer, the summer of 2013, sent out surveys to 27,000 individuals. These were architects, educators, a range of people involved in the profession. About 4,000 of those surveys were completed and were sent back to us. I should note here as an aside that in those 4,000 surveys that were returned, there were 500 pages of additional comments that were made! I am still reading through some of those comments.

There are five broad areas that educators and practitioners felt that we needed to look at most aggressively as we begin to revise the accreditation standards. These were: sustainability, a preparedness to deal with the changing economy, Building Information Technology (BIM), use of new technologies and the ability to work collaboratively in teams.

Fig. 9
Chinatown Initiative, furniture building for public library.

Fig. 10
BAC Historic Preservation Program.
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Fig. 11
Study online: Anywhere, Anytime.

Fig. 12
BAC Landscape Institute, South Africa.

Fig. 13
Historic Preservation.

Fig. 14
BAC student field trip to Falling Water - Mill Run, Pennsylvania.
When I spoke to our executive director, Andrea Rutledge, about the trends that we are seeing in what is happening in those schools which are changing their curricula, she indicated that we found is that the key to curricular change is not so much one of an arrival at a programme of a charismatic new leader who can lead the programme out of darkness. What precipitates change most, is that the programme has been committing itself to undergoing systematic programme self-assessment, in a way that has engaged the faculty in understanding that change in the curricular structure is essential. Moreover, the outcome of self-assessment has to be, not just change for its own sake, but a change that results in improved student learning achievement. Change cannot be just about assessing program input; it is really about assessing learning outcomes.

We know that interdisciplinary learning is essential; we also recognize that getting programmes to work across disciplines is, at the very least, difficult and in some circumstances, impossible. This is because trying to get people to adjust their schedules, their tenure expectations, and their ability to move from one building to another in the same day is difficult and we understand all of that. The challenge that we all face is how we overcome those logistics. This has already been referenced by the Head of the Programme in Florence.

A great deal of change is taking place because many of us in this room are of an age whereby within the next five to eight years, we are going to be out of this business. That is a great opportunity for the institutions that we are working with to implement, finally, the kinds of changes that we ourselves find difficult to embrace. Overall, what we are finding is that the programmes that are making change in their curricula are drifting away from formulistic education and, partly in response to student pressure, more towards collaborative, community-based, hands-on work.

The changes are also taking place in terms of increased learning online. Some of us were in a very lively conversation last night about the impact of online learning and the creation of online studios and of hybrid studios. We are all looking at the fact that there has been a decline both in enrolment and in employment; we are all looking at ways of doing cross-disciplinary learning. In addition, we are all looking at ways of exposing our students to a greater extent to learning in practice and empirical hands-on work.

This coming summer, therefore, as I have mentioned, NAAB will be holding in the United States a comprehensive review of all of our accreditation standards. We hope to move from the checklist of thirty-odd items to a more rigorous assessment of the way we subjectively assess learning outcomes. Those subjective assessments entail performance-based portfolio reviews throughout a student’s progress and through his/her studies at a school. We are looking increasingly at the way schools calibrate their faculty for consistency; we are looking at faculty training as a way of improving learning outcomes. NAAB itself has spent a lot of time over the last few years training the people who go out in teams to look at schools. This is because there has been criticism, some very fair criticism, of the fact that the way a team is structured and who leads a team can play a major role and make a major difference in the way a school is assessed.

Finally, I would note that the key areas for diversification that are appearing in those schools which are making significant curricula change, are greater in cooperation of interiors and studies in health, particularly around evidence-based design; a greater work in landscape architecture and the connection between landscape and sustainability and what it is we teach in traditionally defined architecture; the teaching increasingly in an online environment and digital environment of sustainability and historic preservation. Thank you.
Juri Soolep
Professor, Umea School of Architecture, Umea, Sweden

In the present contribution I am going to talk about accreditation and quality assurance. I assure you, it will be boring! I know the boredom of it from first-hand experience, having been for three years a Dean in Estonia Faculty of Arts, in the Faculty of Architecture and writing the reports. It was institutional accreditation, it was professional accreditation, it included accreditation for science and development- you name it, it was all there! I have spent the last years doing it, so be prepared for this twelve minutes of painful experience. Nevertheless, the Nordic Academy of Architecture has established Mission Impossible: we want to turn this accreditation and quality assurance into a sexy, political, essential and nice challenge!

The Nordic Architecture Academy is a collaboration of sixteen schools, joining the countries of Scandinavia and the Nordic countries, all the schools that have been nominated for their professional qualifications and directives, so we represent the Nordic part of Europe within architectural education. There was a cost for us to go through the accreditation and quality assurance for several reasons. A working group was formed and I was asked to chair it. It was hard work, I am not pretending it was not, but hopefully its work has now come to the point where it can go in several certain directions where it can be introduced and reflections may be made as to what this work was about and what it has achieved. It was started in 2009 with the working group and firstly it focused on different accreditation system in our countries.

We approached it with caution because we were worried it would be a case of applying another layer of accreditation on top of all of those that we already knew and that it would be a painful experience. So we approached it with caution, but within that development of the work done, we were sure that some kind of accreditation manual was needed. We therefore proceeded with the work of asking ourselves the question of definitions: what is accreditation, what is evaluation, what is quality assurance? We then mapped the situation in each country and at the very end, we came to the experimental text of accreditation and quality assurance.

The working group covered several terms and then a policy discussion was held in Copenhagen. I think that it was useful and it is my pleasure to thank all our distinguished experts. NAMES I would like to thank them for their input. We have now created this text and this text has been edited. Our next job is to promote it and have some kind of feedback. From the feedback, we think there are three kinds of organisations in Europe who deal with these matters: they are the EAAE, the European Association of Architectural Education; the Architects’ Council of Europe, and an informal network, (name unclear) which connects all the member states. I would also like to say there will be a working programme on the 24th and 25th of January 2013, when we will try and organise this conference or seminar in Copenhagen to sum up the work that has been done. The question is why.

Accreditation and quality assurance are imposed on schools in very different forms. We would like to see these combined under some kind of umbrella accreditation where we can stand and take the lead instead of having all kinds of formal and informal organisations that operate in different ways in different countries as happens at the moment. Schools very often cannot take an active process in this policy-making: this is what the Nordic Academy wanted to change.
This is one of the things that we can use to spark off a political discussion and also be part of. There is a critical mass that is missing in the schools. Estonia has one School of Architecture, Latvia has one school, Iceland has one school, thus it seems to me that accreditation and evaluation of any form has to be international. Even within Sweden, where there are four schools, we think that the critical mass could be regional and therefore this path was taken further. The Nordic Academy of Architecture is an institution that is publicly based: it discusses things, it changes things and we would like to go further and to take a more active part in the setting of political and educational agendas as well as those on a regional level.

Let me say a few words about its background. This is what the working group started dealing with: we were looking at whether this accreditation manual could create the possibility of new models of cooperation and development funding, as well as financing and recruiting of students if we could come together and use this forum of accreditation and see where it actually goes. Then of course there is the background from the European perspective, the body of the Council of Ministers of the EU and the ones that are outside the EU, like Iceland and Norway, and of course the professional qualifications directed by Brussels which works as a kind of shadow falling over us. In light of the European background that I mentioned, we would be interested in hearing the recommendations, comments and reflections of ACE, EAAE and also definitely from ENHSA.

The work was not started from scratch, it was an ACE commission for accreditation and quality assurance that had already been started, so we could rely on the work already done by ACE. Nevertheless, their accreditation, evaluation and quality assurance as terms were those defined by ACE so we took the decision to use slightly different wording. We went for approval of European listing, approval for meeting European educational standards, approval for joining professional bodies and approval for access to marketing. One might ask why it is important that all these things are looked at separately. It is because they are mixed together in different countries in very different forms. Sometimes approval for an EU directive is also an approval for meeting national educational standards and so forth, so we wanted to make sure we always know what is happening.

In a European context, professional practice is being mentioned as a necessary and quite probably obligatory thing that will be connected with professional or educational accreditation. With our own accreditation system, we can therefore be ahead of it and we can possibly influence it a little. Both the study of 2010 and the ACE working group study about accreditation systems elaborated on the theme that there will be pressure on the member states of the EU to harmonise some kind of accreditation system, and even to have some kind of European accreditation system. We obviously wanted the real support of the schools when the accreditation becomes essential and where the political dimension behind it lies. We therefore thought it might be wise for the member states of the Nordic accreditation and the Nordic Architecture Academy to form an accreditation body or board.

There are three good reasons for this. NAA is well positioned because we work collectively and so we can do it in a coordinated form. The Academy of Architecture has been joined together for ten years, so there is a system and a culture and a regional understanding of architectural education which is similar but at the same time diverse. We also think that all NAA members will participate and that will give it a respectable grounding so that everybody will become involved. And of course it is voluntary. This means that it might become something that we do not need to do, but it will be good if it is there. The accreditation board can be a very strong
supporter of schools, also from the viewpoint of the Ministry and universities. Here we have to ensure that it is understood how the financing and structural efficiency of a school has to work in order to make it possible that this accreditation of a school will actually be collectively understood in the same way.

The political dimension is a theme that was mentioned at the Copenhagen seminar because Iceland and Norway are not part of the European Union so it requires a larger union rather than just an EU network. The concept of accreditation is rather simple: we would like to nominate about five members from each country, making up around forty experts altogether to create a pool of experts who are both respected by the profession and the Academy and who have experience there. For the first part, the director of the NAA could coordinate the work, but as it takes off and finds further development, there would be separate coordinators in the process.

We have the intention of making a two-stage process. The first would be a consulting commission, where there would be nine members. The things that are to be presented would be nothing extra to the accreditation systems we already have, they would use their professional qualifications directive form, which is easy and then a short separate formal statement that would be discussed by a panel of experts and then there would be a visit to the school. This would look like the English system and would consist of a borderline fail area and high standard ranking. That briefly is how we tried to transform accreditation and quality assurance into something that is not so very boring.
I would like to start by saying what a pleasure it is to be with you here at this conference. I had no idea this event existed and it was exciting to discover there is a European consortium akin to what we do in the United States, working to further the quality of architectural education. I bring you the American perspective.

I have just finished my IIT Deanship as I step up to the faculty of IIT; it is the first time in quite a while that I will be a full time teacher, so it is quite exciting for me. I am finding this out first hand and I have to tell you that I am enjoying it so far. In bringing the American perspective and speaking with this group, I have a number of thoughts to share with you.

I have been in active administration since 1983, but if you had asked me as a student if I would ever end up being a dean, I would have kicked you, because back then I thought of deans as “people in suits”. I have, however, been very rewarded to have the opportunity to administrate schools. This is because administrators have to look in a lot of different directions at the same time to fulfill their purpose. I like to say that we are the angels who mediate between heaven and earth; I leave it to you to decide which is the university administration and which is the faculty and students! (As an aside, I apologize for having no slides: I thought that ten to twenty minutes was too short a time to include any visuals.) In any event, in doing so, in being angels as administrators, we also have to mediate between that which is specific to our individual schools versus the world at large. That world is the world of society and of how its policies and so forth affect the definition of architectural education. We also mediate between the world of practice and the academy; there, we try to anticipate what the practice ambitions contain and how education can anticipate that.

In my time as an administrator, I have been trying to look at trends in the profession and see how they might affect the education that we deliver. I thought therefore that rather than answer these specific questions that were complied for us, I would take a different tactic of just conveying some information from the American perspective as to what kinds of trends and changing values are affecting, or at least raising, questions for the education that we might be delivering.

I am sure that you have noticed, as have I, the rise of interest with design education in the general culture. There has been a growing appreciation of what a design perspective brings to other areas across the spectrum and most specifically, to business. This has been coupled with a trend in which I became interested over a decade ago. This was the trend of the larger firms being interested in expanding the services that they offer. I remember back that at the 2000 ACSA administrators’ conference, they invited someone from Gensler, which I believe is still America’s largest firm, to talk about the service offered by the firm in strategic planning for their clients. I thought this was interesting because usually strategic planning is the purview of business and the management consultants. I wanted very much to hear how an architect was prepared to offer strategic planning to businesses. In any event, it turned out that Gensler had hired somebody with an Master of Business Administration to come into their firm and provide that service! Things have changed now. I am sure that your schools and your faculties have become interested, as have the American ones, in the way in which an architectural
education might prepare one to be more versatile and offer these expanded services that firms are seeking.

Consequently, those two developments have led me to proclaim that the architecture degree will be the law degree of the 21st century. The 21st century is the century of the visual more than the textual; we can see this pervasively in our culture with our emphasis on visual learning versus textual learning, and the way that entertainment and its use of visuals has moved towards “infotainment”. I think that we are going to see this trend across disciplines in the university and I believe that architecture can take the lead here. I would venture that the unique quality we have in architecture is in training the hand, the mind and the eye. Architecture teaches us to see the world and to translate that from our hand into creative forms.

These are consequently some other trends in America and, at least from this morning’s presentations, I also hear them being investigated over on this side of the Atlantic. These are ideas of more emphasis on teams and collaborative learning as well as other collaborative work; there should be inter-disciplinarity: reaching across disciplines and learning how to work with those trained through other processes. There is also the question of research and what that will mean to the design process.

We have also seen trends that those with a design education, like those with a law education, are going on to provide services of many different kinds, not just traditional architectural services. This falls sometimes within the domain of architecture, but quite often now, graduates are going outside the field and using their design education to serve other kinds of enterprises. There is a beautiful slide from Syracuse University, which has tracked their graduates quite closely out of the School of Architecture. This shows that around 40% went into traditional architectural practice; the pie chart was then sliced into very narrow slithers showing all the other kinds of endeavors, including everything from pastry chef to mayor!

This provides us with real potential to develop architectural education more self-consciously to recognize what has traditionally been the fact, that - at least in America - only 50% of our graduates go on to become registered architects. This was referred to earlier as to what this will mean for accreditation standards. That will be a topic in next summer’s (2013) NAAB ARC, that is, the Accreditation Review Conference. It will be very interesting to have this collective conversation. NAAB, the National Architecture Accrediting Board, is an organization underwritten by America’s four principal professional organizations, those being the ACSA, or the Association of Collegiate Schools of Architecture (of which I am now president); the AIA, the organization of the practitioners; the NCARB, the regulators; and the AIAS, the American Institute of Architecture Students, representing the students. In evolving our accreditation standards for education, we involve lay professionals to give the perspective of society on what architectural education should offer.

We have also seen, as have you (as I gather from this morning’s presentations), an interest in the design process per se. Interestingly, NAAB has all these accreditation categories or standards, but nowhere do they mention design quality which, if you scratch the surface of any Faculty of Architecture, is probably the most important issue in the end. Accreditation does not actually tell you if your students design well or not. This is something which I have always found curious, but then again, assessment of design is, as you know having taught it, a very personal and non-quantifiable condition that makes qualitative review difficult.
Some of the other trends that are raising questions about education are of course the new technologies available. This goes further than simply the digital applications: it has raised for American practice a whole new way of doing business, and a whole new perspective once again on the services being offered to a client and the life cycle of a project. As a consequence, this has led to an interest in many schools these days in business practice itself. This is firstly to empower the architect more - I was alluding to that earlier when I talked about the expanding role of practice - by making that person able to be more active in the whole structure of a project from start to finish, from the beginning of the idea's definition (strategic planning) right through to facilities' management. In my school, for instance, we have instituted a Master in Building Delivery (MIBD). This utilizes design to develop an entrepreneurial practice. It has been very interesting because we thought that it would bring a lot of people back into continuing education, people who were out there for ten years in a firm and who decided they wanted to be a little more the client. What we actually found, however, was that our professional degree-seeking students were increasingly interested in this kind of course to the point where, in our Master’s programme, we actually opened up the number and kind of courses they could take to serve their professional practice education. It will be interesting to see what the accreditors think when they come to visit us.

The traditional course was very focused on whether someone wanted to run an architectural business; whereas we now allow students to satisfy the requirement focused on whether somebody wants to be a real estate developer.

This raises very big questions alluded to earlier about the accreditation standards and more fundamentally, how architectural education can structure itself to facilitate this expanded definition of the architect. This has, of course, always been going on: architects have always thought that they can do everything. These days though, even as architects (knowing our genius), we realize that we need tools not traditionally part of formal architectural education. This is important to me also in terms of how we can keep our students interested in architecture. Again, what we deliver, that no other discipline does, is design education.

It is true that there are “design” schools which teach a design process, but it is not the same as what architectural education delivers. It goes back to the idea of training the eye, using the hand and having those two coordinate through the mind.

I would like to conclude with just a couple more things that are on my mind as pressing to discuss at a meeting of schools. I am very worried about what happens to women in the profession; I amongst many others. You probably know the statistics for your particular culture, but in America, they are pretty dismal. 51% of those we educate are women and then by the time they are ten years from their degree, there are left only 15% who have risen to become architects. When you then survey who are the heads of architectural firms, the numbers are even more dismal. Being a seasoned feminist, I know there are many reasons for this. Some of them are positive, others are more negative.

Approximately fifteen years ago, we started talking about “minor practices” being a legitimate path for the use of your Bachelor’s degree. Women report to different cycles in their lives than do men - still, but there are some other factors that come into play in this. Therefore, I am using my term as President - I just started in July 2012 - to bring into higher focus a discussion that has been taking place in America amongst eminent professionals about why this is so and what we can do about it. I am hoping that some answers will be found as a result of this.
Another thing that has risen in America, at the instigation of AIAS, the students, is an examination of studio culture; I am not sure if this has reached over here yet. One of the accreditation standards is concerned with studio culture. Every school is now required to have a studio culture statement; it addresses some of the genuine problems that were inherent in the culture of architectural education. These include how a studio is run, what kinds of values it conveys to students and how those values then surface in the practice of an architect. We have therefore tried to become more mindful of issues such as time management, asking questions such as why do we have to stay up for three nights before delivering the final project? It also includes respect for others, which gets at the culture of the sole genius being the best designer. There are other similar topics. It also concerns how faculty treat students; we have changed from calling them “juries” to now calling them “reviews”.

When I first saw this issue surface, I was quite skeptical as I thought that possibly the best years of my life were spent in the design studio. I have, however, come to be very much in agreement with this trend because I think that architects either trained this way, or somehow by osmosis, have an underlying lack of appreciation for the value of their time. We under-bill for our time, and we too often sell it for free. This attitude starts in the studio. We should be reengineering the way that we educate our students in studio to more aspirational attitudes and values. It is said that we all teach based on how we were taught and then we try to evolve our approach. Yet these traditions hold us very strongly and it requires some truly innovative thinking to get beyond that.

I am aware that this conference is trying to look at questions about different ways of delivering education and I would be very interested to hear what people have on their minds. It may be called “Greek time”, but this issue of procrastination might actually just be academic time!

Lastly, just as an aside, I would like to mention that I have also recently started as a member of the board of the Society of Architectural Historians. If I may be allowed to put in a plug: let us not forget the historians. They are essential to our culture and to the Schools of Architecture. They are themselves on an interesting odyssey to expand their perspectives. This is not only in what they teach but also in what they do. They may not even teach, so this is a very interesting issue that is happening over in America. With that, I would like to thank you for inviting me.
Wolfgang Haack
Coordinator for "Access to the profession", ACE Executive Board

Professional Qualifications Directive (PQD) - Extract from the ACE report 2012/2013

The PQD is a cornerstone of the architectural profession's regulation in Europe and sets the conditions under which migrating professionals have their qualifications recognised in other EU Member States. Maintaining automatic recognition of qualifications and revising the minimum training requirements were Architects' Council of Europe’s – (ACE) key objectives in this area.

The main bodies involved in this process were:
• EU Commission
• EU Council (Presidency Jan-June 2013 Ireland)
• EU Parliament

The individual positions toward a modernization of the PQD by these three bodies were presented and negotiated in so-called trilogue consultations from March 2013 onwards and were concluded in June 2013.

The common resolution of ACE and the European Association of Architectural Schools (EAAE) promoting a minimum of 5 years of academic training plus 2 years of professional training (5+2) formed the initial advocating position, which ACE continued to promote.

In December 2011, the EU Commission initially propagated in a draft legal text a combined 5+1 or 4+2 solution. ACE had frequent meetings with the EU Commission (COM) to discuss the COM policy proposal. However, opposition to the introduction of practical training requirements by Denmark, Finland, Spain and Sweden (with support from Greece and Hungary, altogether a blocking minority) in the EU Council induced the EU Commission to change their position on the duration of the education/training from 5+1 or 4+2 years to 5+0 or 4+2. The EU Commission was reluctant to impose additional legal requirements on those EU Member States, where up to now no practical training is required. However, the architectural profession maintains that practical training is not designed to compensate for shorter periods of academic education but is an additional/complementary necessity.

To assist comprehension, ACE submitted documents on practical training. However, COM officials indicated that if agreement on the practical training were not reached, then the idea could be dropped altogether. While the Commission were keen that practical training should be supervised (though seems to have dropped earlier insistence that it should be remunerated), ACE stressed at that point of time that a harmonised curriculum were not feasible and that the training should be defined at national level.

Although ACE had contacted the EU Parliament’s Committee on Internal Market and Consumer Protection (IMCO), which led the debate on the modernization of the PQD in the EU Parliament, it also relied on the Member Organisations (MOs) to contact their own Parliamentarians/members of IMCO in order to advance ACE’s position – and also with regard to the EU Council, which is not within ACE’s immediate sphere of influence. Here, the Member States were the actors and ACE’s role was limited to alerting MOs to the issues/risks and furnishing them with suitable arguments and materials with which to lobby.
To ACE, the legislative proposal described above gave rise to intensified work in the areas professional training (Professional Practical Experience, PPE) and Continuing Professional Development (CPD). Initial work on developing a definition of PPE provided the basis for extracting a short political paper to append the ACE response to the modernization of the PQD.

In the end, the three bodies involved entered the trilogue consultations with their individually defined (though identical) positions

- EU Commission: 5+0 or 4+2
- EU Council: 5+0 or 4+2
- EU Parliament: 5+0 or 4+2

which were confirmed in the trilogue.

Even though it was understood from the beginning that these are minimum requirements for cross-border access to the market in EU Member States, ACE was aware that this would also prove a blueprint for the national legislation and access to national markets.

Provided that EU Council and EU Parliament agree – which seems ever so likely – the modernized PQD is expected to come into force in September 2013, followed by a transposition period for the implementation in national law of 2 years.

There are indicators that the minimum standards defined in the novel PQD do not meet the architects' professional requirements:

- Quite a number of European architectural schools offer more than 4-year courses,
- many professional registers demand higher standards including professional training,
- negotiations about Mutual Recognition Agreements (MRAs) with Architects’ Associations from non-EU countries show that their requirements are far above.

This is why ACE will continue to promote the 5+2 model.

However, we have achieved substantial benefits for the architectural profession:

- Concerning the automatic recognition regime, 5+0 or 4+2 for „architects“ is more than the currently valid 4+0 model.
- Landscape architects, interior architects and urban planners continue to profit from maintenance of the five levels in their registration procedures as well as from the newly introduced common training frameworks, which can under certain circumstances provide automatic recognition for these branches.
- Architects will not be subject to the so-called partial access regulations. Consequently, non-architects or persons not meeting the minimum professional qualifications requirements for architects will not be able to claim the use of the professional title of architect or to take over tasks that may only be executed by architects.
- The introduction of a professional card will not be made compulsory but depend on the consent of all professional bodies.
Debate

Pieter Versteegh, Switzerland

With regards to a professional or professionalizing doctorate, to me it is very important to have a practice basis; I think it raises some questions that when research is done on these programmes that there is also a part recognised as a practical activity and that we continue to work.

Marvin Malecha, USA

I can tell you that at my institution we have a faculty study group related to professional conduct. We have a PhD programme which is research-based; I would call it traditionally research-based because of the fact that it is a Doctorate of Design, which means that we have a real spread of topics at any one given time formed by interdisciplinary committees. That way, at any moment in time at the college we can have research going on in cognitive processes on the one hand, while on the other hand, there may be something to do with AIA because of the engineering staff we have. We have identified three permanent scholarship areas in our college and I have some material that I can share round.

The study of the Doctorate of Architecture is one thing and the study for the Doctorate of Design is something different. Because of regulations in the United States relative to museums and the Doctorate of Architecture as a professional degree, which would make it susceptible to certain accreditation, my faculty has chosen to use the term Doctorate of Design, with a focus on professional practice. The concept there is that in the case of architecture, the internship process required for licensing would be one component of it with increased membership coming from faculty. The second component would be an increased number of courses related to professional conduct, which relates to everything from leadership to energy management to some very specific things. Between those two is a process of writing a detailed case study for a period of two or three years. This would be two years, but actually six semesters as it would be full-time. The real designation would be between the two: if it is hard research that a student is looking for, then it is a PhD programme; if it is conduct of practice, and case study analysis, then the professional doctorate would be more appropriate. They are very different from each other and they are distinct from each other.

That is an up-to-date version of what my faculty has put together. It appears that we will have a Doctorate of Design, a professional programme that will eventually have concentrations in architecture, in landscape architecture and design and in industrial design and so forth. This is what is in our mind at present. Our model in our campus is veterinary medicine. If you study veterinary medicine, you come to a point where you work at a teaching hospital as part of your experience, and then you come to be a doctor of veterinary medicine. If that individual wishes to conduct research, he will then enter a PhD programme and continue with PhD studies. That is the idea, to make this a very clear designation; it is really intentioned in addition to concentration at the Master's degree level. This gives the opportunity to someone who wishes to look at forms of design practice or new elements in professional conduct, to give them the opportunity to explore that as a separate form of scholarship.
Ted Landsmark, USA

I understand that Marvin’s programme has addressed the issue of differentiation of long degrees, particularly at the doctoral level, better than at any other programme that I can think of in the country. He is indeed the right person to answer that question. The national accrediting board only accredits one professional level doctoral degree in the country. It has to be remembered that in the United States, a Bachelor’s of Architecture that is accredited, a Master’s of Architecture that is accredited, with one Doctorate in Architecture that is accredited all mean exactly the same thing when it comes to sitting for a licensing exam. The question of research, therefore, and how research is integrated into programmes is in some respects a separate question. This is because our professional degrees are about getting people from essentially no place to a place of licensing and the 124 programmes that are now accredited in that regard all do that without regard to their particular nomenclature or title.

Donna Robertson, USA

I would like to add some background as to why there is a Doctorate of Architecture, if I may. It should also be known that we have a five-year Master of Architecture accredited degree programme. This was a change that took place approximately eight years ago. The logic was that if we can have a five-year Master’s, why not have a six or seven year doctorate? It was not intended to be a research-focused degree, although as has been said, the one programme that wants to be a Doctor of Architecture degree programme does have a significant component of office-based learning that takes place, which is regulated by the school. The thinking that went into even allowing that degree name to be used was that in other professions, once you pursue your professional studies to the fifth year, say in engineering, you get a MS. Once you pursue studies four plus three, you get a JD. Once again, why were architects underselling themselves as regards their degree credentials? Interestingly, we allowed this to be a professional degree and then, none of the American schools except one has used it.

Ted Landsmark, USA

The last thing I will just say goes to last night’s awards ceremony. Underneath all this lies the question: What is research? Moreover, what do we call research? How do we evaluate research? How much of what is done in practice to develop a project should be considered research in the sense that it has been vetted, published, shared amongst others and disseminated in a way that it becomes useful to the entire profession? This was raised by the award last night: this fundamental question of what it is we think we are trying to achieve, both in terms of our being educational institutions and in terms of our being institutions that are teaching research skills that are applicable in practice and which enhance someone’s professional credibility. To me, that is the underlying question. Most of us are not here simply to turn out academics: this is not a gathering of PhD programmes in architecture, it is a gathering of means of programmes for turning out applied practitioners, whether our graduates become that or not.

The question then becomes one of how one defines what research is and what purpose that research serves. Is it, for example, purely for advancement in knowledge, or is it for advancing knowledge on behalf of a client or a firm? Those are the kinds of deeper questions that
I feel are all still being debated. Once again, Marvin has been good at this because research implies, amongst other things, that there are case studies that demonstrate not only the success of something, but more importantly, the failures that we do not like to talk about in our profession. Unlike medicine or law, we do not regularly publish information on what did not work. We are too proud to do that.

A number of years ago, Marvin, in conjunction with some of the largest firms in the United States, undertook to begin to develop a series of case studies about what did not work. From this, our students could learn from failure. That is, after all, part of what research is supposed to accomplish. He ran into major problems around that, largely because, when it got down to the really hard stuff and the tough questions, the firms did not want to talk about that, they did not want to have that sort of information published. Yet that is not the case in other fields! In law, everyone knows that one side wins and so the other side loses. In this way, you find out what did not go right. In medicine, there are all kinds of publications which talk about research studies that led to dead ends and did not produce the drug that was wanted and so that is not replicated. In our field, however, our research does not address our failures in a way where we are willing to talk about them as part of the learning process. As a consequence, the very definition of what we mean by research, as opposed to public relations, needs to be sorted out and defined as far as our student learning is concerned.

Kostas Moraitis, Greece

This is not exactly a question, but rather a statement concerning in particular those colleagues from the southern part of Europe, especially from Greece and Cyprus. For our countries in the southern part of Europe, I think that the major pressures out on us to change our curricula are not internal. They are external pressures, political and economic pressures. In this case, I believe that the presentation of Vicente Mass Llorence had a very important proposition, which was to rewrite our way of working in our schools. You propose a second stage in four languages, not just for students in the majority of European countries, but in four languages. That would also be very important for the schools of Greece and Cyprus.

Herber Buhler, Germany

Let me go back to what Mr Haack said. I have to support you. I think we have two circles. The one is the political world and the other is those of us outside it. There are two urgent problems at the moment. The one concerns how to use less energy. The other is an urgent political problem. To discuss and compromise in modern times, in the last century a Europe where we have a duration of studies in architecture of four years. In Europe I think in 1998 people have five years or more, but now it is a compromise of four or five years. Four years means that the result and the consequence of Bologna will be immeasurable; that means an architect will be profiled; and the other is five years for a Master’s. I think we should find a solution that the commission should prolong the reality in real time of five years and not go over this. If we do not accept this, I think we can make a mess as architectural experts in education in Europe. I feel that as architects, we are in another world, in a heaven of faculties, while the reality of projects is based on economics. If we are talking about five years, the question is how to organise the time.
Wolfgang Haack, Germany

Professor Buehler this has already been done; it was done three or four years ago. Your organisation here in ACE launched a common document asking for the five plus two system. So this is normal for everybody; this is according to the commission who say, you are equivalent with your five plus two because Great Britain and the state of Germany do not want the five years. It is common knowledge that we all are asking for the five plus two, which is why no-one is arguing about it. But here come the politicians: perhaps we must present it in a different way when thinking about the political pressure. I am sorry, it is too late.

Marvin Malecha, USA

We have economic issues. If I had a wish list for one thing that could be done in the profession, that would be to take the intern development programme that is being called the internship and bring it back into a collaboration between the educators and the practitioners. This is because as it has slipped away from us, we have lost major control over it and the national architectural administration body in the United States is now talking about a curriculum of courses and that would be all. They are leaning even further in that direction. This is having an extremely negative effect on our students. What I am seeing here is that you are in the very early stages of this and I would urge you not to let this happen. I am speaking to colleagues on the international field so as a form of a precedent, I would say this is a very important matter.

Ted Landsmark, USA

I guess this will be my last comment. We are the educators; some of us are in practice, but for most of this group of individuals in this room, we are the educators. The theme of this conference is how we as educators go about assessing quality and improving the quality of what happens for the students and the aspiring architects who come to our schools. If we do not set very clear standards as to what quality means and what it is we are trying to accomplish, then inevitably those standards will be set by people who know a lot less than we do about what quality represents. Several of us had a conversation last night about the change in our students and how they learn. By and large, they have something we do not have, which is access to instantaneous information at a level and on a scale that was unthinkable to all of us even five years ago. When they do research, the first thing they do is go to Wikipedia. The second thing they do is look at some of the sites suggested by Wikipedia. They understand that Wikipedia is open-source and it is not very well vetted, but it does not make any difference because the students nowadays have access to a wider and deeper range of data about whatever they wish to do research in than any of us have ever had, on an instantaneous, real-time basis. This is incredible! What they do not have, however, is the ability to discern in that data what is good and what is garbage. They do not know what I have taken to calling the connoisseurship of data, the connoisseurship of information, and that is what we can do better than they can. We know quality. They may know a range of data sources, but we are the ones who help them to learn what quality is.

If we cannot agree amongst ourselves as to what those standards will be, then almost certainly people outside ourselves will set standards which will have nothing to do with quality but which will have everything to do with economics, market forces, politics and a range of other
things that are very real; we have to acknowledge those things. I look around this room and it is very much like rooms in America. As educators, by and large we are a group of white-haired men who came into the profession at a particular point in time, have assumed leadership roles and have a particular set of viewpoints about what quality is. That has been acceptable for the last thirty years or so, but as I look around this room, I see that a lot of us, by the time this next set of accreditation standards has run its course, a great many of us will be out of the profession.

The question is, therefore, what is our legacy for the next generation of leaders who will also have to set standards for quality? That is what it seems to me; Marvin started talking about it and the panel have been discussing it, the question of what it is we are here to address over the next couple of days here at this conference. What are the elements of quality? We know about process and structure, curricula sequence and all of that. The bottom line remains: what do we want our graduates to believe is high quality and how will we teach them to distinguish that from garbage? That to me is the essential question.

**Marvin Malecha, USA**

I do not think we can let the academy get off scott free! Peer review and a continuing education culture are essential. I have been asked to contribute several chapters to a publication that address this necessity in the context of a transforming architectural profession. (I asked that I be changed into this role to allow others to do the editing) In the United stats we are in a pattern of regulation and requirement regarding peer review and continuing education, what interests me in the context of this discussion is what I understand to be the entirely voluntary nature of what has been offered by our colleagues here. This is a voluntary system?

**Juri Soolep, Sweden**

Yes, this is the hope and we can make it accessible. If we have the power to deal with administrators or officials or a sub group of directors, we can collect information about this accreditation board upon a level that is respected, then I think we can have a chance here to make things simpler and at the same time, more essential.

**Marvin Malecha, USA**

How have you dealt with the issue of policy and quality?

**Juri Soolep, Sweden**

This is where the respected professionals and academics come in. They do not just look at the documentation papers that are sent to the directive notification; they also come to schools to look at the work being done. This is what we want and where it is voluntary, the school can learn from it. If it is not, then it becomes another burden. This is the concept behind it: everybody is involved, so the vast majority are in it. But then there is the question of whether we can open further and if we can achieve this, and at least in some of the countries make the government see that they are coming into an instrumental or formal recognition of architecture, that would be extremely good. This is indeed what we are hoping for.
Marvin Malecha, USA

I think this is an important issue: we must respect the cognitive process that differentiates between the inductive and deductive approaches to critical and creative thought. To have this awareness is essentially the key to understanding the success of any process. The notion of a panel of experts who specifically address performance is going to make a great difference to a project and to an association. What should be understood by politicians as well as the leaders of universities is that design programs have great openness to this discussion. This is a very important point and it differentiates us from others in the academic setting.

Juri Soolep, Sweden

We hope so. Let us see how it works. That is why we are here to promote it and collect some reflections on it. I would like to say that if anybody can come, it would be extremely nice to see you in Copenhagen next year to discuss it more widely before we publish it.

Constantin Spiridonidis, Greece

I will try and make some remarks based upon the different presentations that we have heard this morning. Firstly, it appears that there is something of an agreement between people who have spoken in the interventions from different places that there is a significant shift in the way that we understand education. The key word in this understanding is something which is named in different ways, which is interdisciplinarity, or trans-disciplinarity, or multi-disciplinarity - and together with this, collaboration and cooperation. It appears that this is something that most of the interventions and most of the lecturers mentioned. If such a shift is happening, then the question of the definition of studio has to be based upon the way that the conception about quality has to be incorporated into this. This brings us to a very interesting question: what kind of studio would we have in this new conception? In the previous understanding and practice that we had in studio work, it was a little, if not completely, different. This is therefore a very interesting issue: how do we organise the studio in order to be more multi-disciplinary or collaborative within the framework of the educational government?

There we can see different kinds of problems. One problem, for example, was the one that was mentioned, that we have in Europe a certain constraint from the European directive saying that we have to have around fifty percent design and the other fifty percent everything else. If more things are then added, other things must be eliminated. This is the kind of problem we have. At the same time, it has to be articulated with the claim that was mentioned previously. This is because the question of the complexity of the studio is not to leave other things out but to bring in more things. When we think of the studio in this way, we have to redefine the way that we are organised. I have to say that we do not know how to do this. It is an open research question in our educational environment, because it is something we do not know how to do. Yet it is something that we want to achieve and it is something which appears as plain from the international milieu of architecture.

This also raises the problem of education and evaluation. It was very interesting to notice that the American system, as it was presented by Ted Landsmark, is thinking about and looking at moving from evaluation based upon the input of education, that is, how we have to teach and so forth, to the other end, which is the outcome. But the input approach has up until now
been split into small pieces like architectural design, theory and history, construction and so forth and that is the old understanding of the theme. However, output cannot be evaluated in such terms. This is a comment relating to the proposal that was made because there you still have this kind of understanding in terms of subject areas.

This introduces a kind of fragmentation in our understanding. At the same moment that we are talking about collaboration and accreditation, it brings separation. In this logic, all this question of accreditation moving towards the competences and the learning output has to be accommodated with a completely different educational system, which is something we are looking for. This is why, at this event, we put the term “learning”, because this is the key word which articulates the outcome conception and which can incorporate the new profile of the student, as Ted mentioned previously. Obviously, this shift cannot just remain at the back: it also has to influence the development of the new Directive. Unfortunately, in Europe, the Schools of Architecture are not active. They always wait silently and when something appears, only then is there a reaction. But they had all the opportunities and possibilities to prepare things so that these things would not happen.

All these years, at this event, we have tried to stimulate the necessity that the quality of the schools is something necessary nowadays. Things are changing very fast, what with the political systems changes and the financial situation changes. The mentality of the schools is like the Sleeping Beauty, who cannot understand how fast things have changed; to deal with the political field is a very bad thing! In the end, things happen: the directives are defined by the administrators and are often partly irrelevant; the changes come from the Ministries because we do not want to change anything and at the end, what is happening? The situation remains problematic and one which cannot give the answers to the needs that we mentioned at a level of understanding of architecture in general. I believe it is absolutely necessary for the schools to find collectively the means to redefine the new values of the new conceptions in architecture, that is to say, as was said previously, the new definition of quality in order to be able to transmit this quality to our students and to our future architects.

**Marvin Malecha, USA**

Just in closing, please allow me a couple of comments. The speed of change is essential, that we know. And how we deliver services and their expectations to clients and architects, the accountability of architects, all of this is changing, when you actually go out into the professional environment. Just prior to coming here today, I was at a meeting of the Design Futures Council in a session they called the World Design Forum. The sessions began in London at the office of Evelyn Ltd a marketing and public relations office which is really an old-fashioned term for what it is that they are doing that is better described as interaction and experience design. When you walked into their office, you noticed that nobody has a permanent office: it was wide open and shifting. Depending on what project was being worked on, people from all different disciplines were intermingling continuously. You could not find the saddles of operation in the office. It was a very interesting thing. Even partners’ offices were only private, partners’ offices for as long as they sat in them. Once the partner was out of the office, a light went on in the office and it became a conference room that anybody could use. So it was clearly a new kind of place.

Looking at our schools as an entirely new kind of place, some of it will be used for this and some of it will be done differently and used for something else. That notion of change in how people
work is evident in many places, such as the New York Times and the building by Renzo Piano. I personally was invited because one of the members of the AIA Board of Directors was actually the man in charge of all the facilities for the New York Times and so he invited us to tour the new building. There, even the most prestigious writers - those people whose names appear regularly on a column in the New York Times - have a desk in an open plan office. They do not have private offices, nobody does. It is a different kind of work environment recognising this change. The notion of what quality is goes back to the issue that was mentioned earlier, that quality is very much a cognitive process that will be different in different places because there are different people there. I think we can find some strategies that could enable us to talk about minimums in expectations and outcomes, yet the truth is that there is going to be a different definition of quality when you work with different people. What does that then bring to a meeting such as this? It is not the schools that respond badly to this question; it is the people who lead the schools. It needs to be personalised.

The point of my last slide is that if you allow it to be a school responding, then a request can be sent to a school and it can end up in the Spam folder! The request then does not have to be responded to, as opposed to when someone receives a more personalised approach. What has to be done is for everyone to accept his or her own leadership and I would here like to refer to the idea that deans are angels that mediate between heaven and hell, but we do not know which is which. It is up to us all here as leaders to be those mediators, to speak up and carry the voice and to mobilise our faculty. This must be taken personally. The issue of quality which we have been talking about is essentially all about people. There was a paragraph of the call that I underlined. We are speaking about quality of learning and not quality of teaching as through the former we can investigate a big number of parameters architectural education is depending upon, beyond the teaching skills of the teacher and the efficiency of implemented teaching method. Learning is student-oriented concept, competences based reference and outcome centered consideration. Teaching is teacher-oriented concept and input centered consideration of the education. The quality of learning very often escapes the interest of the evaluation procedures, which are mainly concentrated to the input than the output of the teaching and not to the overall quality of learning. The (re)definition of this quality is a purely academic issue and it is under the responsibility of schools of architecture to define and to develop it collectively.

This is true, but I would argue that however we keep the methods we use to teach, whether distance or close learning, the people who do that teaching are significantly more important than the framework of the curriculum. That is what quality should ultimately be measured on. I would say to you as deans and department heads, hire the best people; the rule of thumb that was given to me was: never hire anybody that you think is dumber than you are. Always hire people smarter than you are; always admit students whom you know will take your job away from you! That is what is wanted in the programmes, for then you know you will have true discussions about quality because each person will be pushing the other and in the end, your voice will have become important because of that contribution. This is the charge to everyone here today from what I heard. This is a very distressing reformation for me because there was nobody worse at evaluating architectural education than the bureaucrats. We therefore have a responsibility to take charge of this. Thank you for this invitation and thanks to everyone here who did such a splendid job.
The quality of learning is directly dependent upon the quality of teaching.

Do schools of architecture implement systematically a staff development strategy?

Which forms of staff development can we promote under the existing financial and institutional conditions?

How can we enhance the outcomes of the existing staff development practices?

Do the existing staff development initiatives focused on the enhancement of the quality of learning?

Which specificities can we detect in a quality of learning-oriented staff development?

What kinds of initiatives shall be taken by schools of architecture in order to meet these specificities?

To what extent the recruitment of new staff is based upon the capacity of the candidate to assure quality of learning?

Are there any possibilities to improve the recruitment criteria in order to enhance the quality of learning?

Can the recruitment of students have a significant impact on the enhancement of the learning quality assured by an institution?
Session 2 Learning quality and staff development and recruitment

Chair:
Peter Kjaer, Umea, Sweden

Introductory panel:
Tore Brandstveit Haugen, Trondheim, Norway
Ugis Bratuskins, Riga, Latvia
Chris Van Langen, Rotterdam, Netherlands
Nicolau Brandau, Porto, Portugal
Tore Brandstveit Haugen

Dean, Norwegian University of Science and Technology, Faculty of Architecture and Fine Arts, Trondheim, Norway

As Peter Kjaer has mentioned, this is a huge area; it is also an extremely important area for those in charge, for the Heads of Schools, Rectors or Deans of the faculties of Architecture. When I got the invitation to join the panel, it was interesting for me because learning quality and staff recruitment and development are huge concerns. With the learning and qualifications schemes we work from, there is a lot to do. Let me try to answer one of the first questions: whether Schools of Architecture try to implement systematically a staff development strategy. The answer is partly yes and partly no. We are good at some of these issues: we have systems and we have a practice, but at the same time there is also a definite lack of attention being paid to others. Focusing on the heads and leaders, just to explain my focus: I had an idea that I would try to address some of these issues which I consider to be more on a general level, and then I will use examples from my own university.

We are a Faculty of Architecture and Fine Art within a large university, which is a broad one, containing all disciplines, although it has a technology and science background, which is a strong field. We are the largest School of Architecture in Norway; from a European perspective, we are on a medium scale. We enrol around 80 students a year in architecture. Over the last years, we have also introduced a number of supplementary two-year Master’s programmes. Some are close to real estate, but also to sustainable architecture.

One of the challenges these days is to integrate these new aspects in order to build on the architectural programme with its hundred-year history. There are a number of issues to be addressed and I will try to highlight them. When we start to focus on staff development strategy, we have to ask ourselves who our teaching staff are. In most schools, there are professors - full-time professors, associate professors, what we call assistant professors - lecturers and assistants. In addition, we have student assistants, which are important for the learning process. I think it is important to address this because we handle these groups differently within the school. The requirements and systems are not the same for all of these groups. We have a responsibility for all of them so we have to be aware of what professional background the staff have.

There are architects who work mainly either in practice or in business or who used to work there; we also have architects who go into research, into scientific work, research by design and other such challenging tasks. We even have a number of artists who have an artistic background in painting or fine art; we have also employed engineers and we have some staff with a background in the humanities or social sciences. The majority, however, come from within architecture. Thus, when we talk about a complete staff development strategy, we need to address these different backgrounds of our staff as well as the position they have within the teaching framework. In our experience, we have very much to focus on the differences between architects with a background in practice and those with a research background. This is because the ways of staff development are a little different.

The best thing we have had in recent years is a learning setting, that is, an environment where people can learn from each other; it is extremely beneficial to have seminars or meetings like this one in fact where specific subjects are examined and where there is a high quality of debate.
and discussions about important aspects that we are working on. This is very often done among the staff and also between the staff and the doctoral students. We have another area which concerns how to develop the competence in research development and artistic work. We are part of the university system and of a large university; our Ministry of Education states that we have a split responsibility. We have an obligation to carry out teaching, which is the majority of what we do, but at the same time, we must also do research or artistic work. I can certainly tell you that one of the main challenges is to balance both of these. The norm is that we try to plan for both: for the teaching and for the artistic work. We also examine the best way to develop architectural practices. Both with research development and artistic work in practice, we have the tradition whereby if people have a good application, if there is a good plan, there is the possibility of having a sabbatical leave every seventh year. We are still in the fortunate position of being able to fund this. This is certainly one way of being able to go into deeper knowledge for a specific period. It relates both to research and to artistic work, and also to architectural practices.

Possibly one of the most important matters is to have funding resources for studies and to be able to give people the time and the resources that are needed to do the research which is to build up their own competences and also to be able to develop, to go further in their field or in the way they are working. We have something in Norway which I imagine is similar in the rest of Scandinavia. Possibly the most important management idea is that leaders, heads of school and the heads of departments should have a plan and a talk with all staff. We have a system whereby we have some kind of private talks with all staff, which we try to do once a year. One of the issues is to try to help staff develop and to give them the opportunity to discuss on an individual basis what their prospects are for an academic career. In this respect, we also have the chance to build up the way from assistant to associate to full-time professor in their achieving what is recognised either as practice or as research development. In my view, therefore, the most important thing is to be able to plan for this personal development, to have an annual systematic talk with the staff, and to provide these types of resources.

I am not going to go through our curriculum but when answering the question about staff development, I think it is essential to link it to what we are doing in terms of teaching quality. We have a traditional five-year Master’s programme, which is the model in Norway; we also have a basic training for two years. What we do is similar to what I heard just before we started: in the basic training, we still try to maintain a very high degree of one-to-one learning. This means one professor, or one assistant to one student; with small groups there is ratio of one to three and then we bring that also into larger groups. Typically we put all the students into three major groups - 25 or 30 students - and we employ a team of teachers. We have almost only project work and we focus strongly on the team teaching commitment. This has given us very positive results. It was introduced as a model 15-20 years ago; we have no Bachelor’s degree at the end but we do have a point when the basic training finishes. In these first three years, one of the most important things we have done is that we have developed and introduced what we call a learning forum for the three years basic training. The focus there is not a particularly formal system - it is more informal, although we have made it formal within the faculty - but it is a learning forum, where the professors from the first, second and third year are grouped together to transfer their experiences and knowledge from one year to the other: from the first year to the second, and so forth, in the way that we want to maintain the major
focus in our teaching and student development and have a learning cycle from one year to the next and on to the third one.

This learning forum has provided us with something extra, in addition to the formal learning quality evaluation system which is a national one. We have also developed a qualification framework for the architectural study programme which is quite comprehensive. However, we need this increased management and leadership focus which we get in the learning forum. We have recently also done the same for education from this kind of Master’s thesis forum where a group of students and professors come together to benefit from this kind of common learning experience. We are also planning to do it on what we call the Master’s level, which is the fourth and fifth year of the course. The reason for this is that today, when we get to the Master’s level, most of the courses offered are offered by the professors and there is no exchange between the courses; we are now trying to bring these more together as one common learning value. We definitely want to develop this more.

The basic message here is that in addition to the formal requirements regarding feedback and reports, we need these kinds of fora to take discussion and the learning process further. There is one last issue I would like to address. This is related to the daily, weekly and monthly staff development. Most staff are a little stressed due to the time factor: to combine teaching and research or artistic work with administrative tasks from day to day or week to week is hard to achieve as a person has to do their best in two areas. It is similar with the teaching and those who combine this with practice or business. What we have done recently is that within the faculty we have developed more planning models whereby teaching is typically for three semesters and then staff have one semester when they can concentrate on research or practice.

If we truly want to have staff development from a life learning perspective, then we need to have a deeper knowledge building. For this, more time is needed: it cannot be done in one or two hours every day. If we can have this in more concentrated periods, at least it will be a better solution. In conclusion, we need a master plan, we need flexibility and we need the management and the focus on leadership in order to develop the knowledge.
Ugis Bratuskins
Dean, Riga Technical University, Faculty of Architecture and Urban Planning, Latvia

Riga Technical University (University), founded as Riga Polytechnicum in 1862, is the first tertiary education establishment in the territory of present Republic of Latvia. At present it is one of the largest state universities in the country, the number of students in 8 faculties reaching 15 thousand. The major excellences stated in the strategic development documents of RTU are as follows:

- to create a stimulating study and research environment, providing an advanced competitive resource base,
- to improve study programmes by developing a comprehensive block of general and discipline-specific fundamental science courses and a wide range of elective specialization module courses, which facilitate the development of engineering design and practical skills,
- to develop scientific research capacity, facilitating scientific research work, strengthening the potential of the research personnel and actively involving students in scientific research,
- to develop academic capacity involving young scientists and industry specialists in the study process, promoting international mobility of the academic staff, balancing academic, research and administrative work load, establishing a system to facilitate professional advancement and the development of pedagogical skills of the academic staff,
- to improve involvement and personal development of the students informing the public about education opportunities at the University, planning an even study load for the students taking into consideration their previous knowledge and skills, observing the norms of academic ethics and promoting cooperation with alumni.
The stated excellences highlight the importance of learning quality and stand for staff development process in the University.

Architectural studies at the University are held at the Faculty of Architecture and Urban Planning (Faculty) in four accredited by State study programmes in four successive qualification levels with focus on interior design, landscape architecture, restoration of cultural heritage and urban planning. The lower two levels (BA and Professional) are orientated towards development of creative and open personalities in order to provide artistic and technical knowledge, train to think analytically, critically receive and creatively process information, develop creative and practical skills necessary for the professional start, access to profession and successful career. The higher two levels (MA and Doctoral) are orientated towards development of knowledge, skills and abilities necessary in research and scientific work as well as in professorship at the higher educational institutions. Each level of education in Architecture corresponds to definite requirements of labour market.

The mastering of knowledge required by architect’s profession follows the principle of study succession. In order to ensure successful and complete mastering of all required knowledge and skills within the higher-level study program, the general theoretical principles and basics of the profession have to be acquired in the previous stage of studying.

The learning quality is verified through the quality monitoring system that includes:

- regular monitoring of student’s individual performance and progress (responsible body – teaching staff);
- regular reflection of the study results in the Study Management System of the University (responsible body – Faculty administration);
- general monitoring of the study process and results through regular supervision, discussing necessities and reasons of changes in the study programme as well as compliance of the content and scope of the subject or module with the goals of the study programme (responsible body – Council of the Study Programmes of the Faculty);
- regular discussions between the self-government of the students and Programme administration about the identified shortcomings and risks in the study process (responsible body – students’ self-government);
- regular update of separate subjects or modules, or themes of the Programme according with up-to-date statements in the field (responsible body – Council of the Study Programmes of the Faculty);
- regular electronic surveys of the students on the subjects or modules passed, the teaching quality and learning outcome; analysis of the obtained results in the relevant academic units and summarise of the results;
- yearly survey of employers and graduates on the results of implementation of the study programmes.

The studies are based on a balanced development of the necessary creative and practical designing skills through efficient integration of the knowledge acquired during the lectures and professional skills obtained during the performance of practical design tasks. Skills in special subjects are learned and perfected in face-to-face sessions. Training is carried out
through lectures and practical exercises. The content of the lectures includes general theory that should be mastered by all students. Practical classes focus on particular themes when each student prepares an individual theoretical assignment (a paper, a study, etc.) or a study design within a broader general subject.

The selection of study themes and cases is often inspired by real needs in research of local governmental and other professional institutions, involvement of teaching staff in different professional associations, and it is ensured both at the level of practical designing and urban construction management. The employers, namely chief architects of design studios and employees of municipal authorities, are involved in the teaching of the subjects on a regular basis as part-time lecturers and consultants.

The students constantly contribute to the development of the study programme via surveys focusing on the relevance of subjects and quality of teaching. The surveys are conducted on a regular basis by filling questionnaires as part of each study course. The students’ self-government takes an active part in conducting of the surveys. University has developed an electronic survey system as part of the overall study management system. The survey results are discussed in department meetings and during the seminars organised jointly by the Faculty staff and the students at least once every academic year and dedicated to topical issues that are related to study environment and quality.

The qualification of the academic staff, responsible for the implementation of the separate subjects of the Programmes, complies with the requirements of national legislation. Along with highly qualified scientists – full-time professors, practising architects as part-time senior lecturers and lecturers – experts from the profession are involved in the Program. In order to ensure optimal proportion of the students and the teaching staff in special subjects the number of involved part-time experts changes according to the number of students in the respective term.

In order to get better study results, promote better inner informative space and use the limited staff resources in more efficient way at the same time attracting more tutors and experts in the critiques and evaluation of the learning outcomes the Faculty has implemented system of “inverse pyramid” in the organization of study process. Since the most number of students are involved in the lower degree programmes (BA+ARCH) these programmes need more tutors to obtain good study results. On the other hand, most skilled and experienced students refer to higher degree programmes (MA+DR) and their amount is comparatively small. Thus, the resource of higher degree students may be effectively used in tutorship and critiques of lower degree students.

According to the mentioned the study process is organized in two directions:

• involvement of higher degree students into teaching of lower degree students,

• involvement of lower degree students in participation of the development of higher degree students’ academic activities (questionnaires, site studies, etc).

Thus, the traditional study environment structure develops:
A wide age range allows the teaching staff to hand down as much as possible of the experience that has been accumulated by several generations. Senior professors have a minimum number of lectures and they are supported by younger colleagues in their work, yet their presence and counsel are important in preservation of the Faculty academic traditions. However, rejuvenation of the teaching staff is one of the main tasks to be undertaken by the head of each structural unit and the faculty in general. The policy for selection, restoration and improvement of qualification of the academic staff also includes regular involvement of MA level students, graduates and doctoral students in the teaching process in the Programmes.

General outcomes of the improved study environment are:

- lower degree students get overall information of whole study process and complexity of study tasks at each study level,
- higher degree students (future educators and researchers) get teaching practice and methodical skills as well as “manpower” for fulfilment of their study (research) work,
- professors get more time to focus on improvement of subject quality,
- STAFF BECOMES YOUNGER.
Chris Van Langen
Head, Rotterdam Academy of Architecture and Urban Design, Rotterdam, The Netherlands

Introduction

I will shortly introduce the Rotterdam Academy. On the one hand to give my presentation some context, on the other hand because some aspects of our school and our educational system are relevant from the point of view of this afternoon’s topic: learning quality and staff development and recruitment.

The Rotterdam Academy of Architecture and Urban Design is situated in Rotterdam, the Capital of Architecture of the Netherlands. As is the case with all six Academies of Architecture in the Netherlands, the Rotterdam Academy only offers education on Master level. We offer two four-year Master’s programs: one in Architecture, leading to a certificate degree Master of Architecture (March), and one in Urbanism, leading to a certificate degree Master of Urbanism (MUrb).

Both Master Degrees are professional Masters (and not scientific Masters, so they are not Master of Science (MSc) in Architecture or Urbanism). But although there is this difference with scientific Master Degrees, the certificate degrees Master of Architecture (March) and Master of Urbanism (MUrb) gives the holder of the degree the right to register as architect or urbanist in the Dutch Register of Architects and to be professionally active as architect or urbanist within the European Union.
The Rotterdam Academy of Architecture and Urban Design is part of the Rotterdam University of Applied Science. This University of Applied Science also offers a four-year professional Bachelor’s program, leading to a certificate degree Bachelor of the Built Environment (BBE). When graduates (Bachelors) with this degree have done the specialization in architecture or urbanism, they have the right to apply for registration in the Master’s programs in Architecture or Urbanism at the Rotterdam Academy of Architecture and Urban Design.

The two four-year Master’s programs at the Rotterdam Academy of Architecture and Urban Design are designed according to the so-called ‘concurrent system’ (just like is the case with the other Academies of Architecture in the Netherlands; by the way, the Boston Architectural College uses the same system). This means that the programs combine an academic study with working in professional practice. Those two components of the programs are designed as parallel and intertwining trajectories of academic study (4 years, 20 hours per week, 120 ECTS-credits) and working in professional practice (4 years, at least 20 hours per week, 120 ECTS-credits).

By the way, I’m firmly convinced that this concurrent formula is a specific form of curriculum structure that strongly enhances the quality of learning – so it should and could have been one of the topics in this morning’s session about ‘learning quality and curriculum structure’. The model or formula offers, because of its parallel and intertwining character of study and professional practice, the possibility to put the knowledge, skills and attitude developed within academic study directly into use in professional practice, and vice versa, to apply the professional skills gained from working in professional practice within the academic study. From my experience I can assure you that this reciprocal relationship has a very positive effect on the quality of learning.

Focus on staff recruitment: visiting or guest lecturers and tutors

The Rotterdam Academy of Architecture and Urban Design is quite a small school. In total we have about one hundred students within both the two four-year Master’s programs, spread over the four years. But even from the perspective of this limited size, the school has a very limited staff with a fixed contract for an indefinite period: the staff consists of 8 persons (counting up to a total of 4.4 full time equivalent). This staff is responsible for the short and long term
policy of the school as well as for the organization and coordination of the curricula. Only some members of the staff are active as educators.

But in fact, almost all (up to 98%) of the tutors of the design studios, the theory classes and the trainings in different relevant skills, as well as the tutors of the graduation projects and the visiting critics are visiting or guest lecturers and tutors. For almost every specific part of the curriculum (or every specific role), the Academy hires a visiting or guest tutor or lecturer who works in professional practice, mainly as architect or urban designer. Per year we hire about 20 guest tutors for the design studios, 25 visiting critics for the reviews of the design studios, 25 visiting lecturers for lectures as part of the design studios, 20 guest tutors for the theory courses, 30 visiting lecturers for lectures as part of some of the theory courses, 20 tutors of training in specific skills, 20 visiting critics for the reviews of those trainings, 25 graduation mentors, 50 visiting critics for the reviews of the graduation projects, 20 visiting critics for the yearly reviews of the students' progress and development and 10 visiting lecturers for specific lectures. This summons up to a total of 265 visiting tutors, lecturers and critics from professional practice each year. Besides that, there are of course the professionals that tutor and coach our students in their work in professional practice.

We strongly believe in this model for our Master's programs (I'm not too sure whether it would work for Bachelor's programs): mainly working with visiting and guest tutors and lecturers. For us, the Master's programs have to focus on the further development of the professional knowledge, skills and attitude of our students as future architects and urbanists and positioning oneself within the architectural or urbanistic professional practice is key to that. The central recruitment criterion we use in recruiting visiting and guest tutors and lecturers, therefore, is not the didactical or pedagogical quality of the tutor or lecturer, but his or her attitude towards and position within professional practice. That is because we are sure that a firm attitude towards a pronounced position within professional practice of the tutor and lecturer necessitates the (master-) students to confront themselves with this attitude and position and forces or helps them to define their own position as an architect or urbanist.
Because of our focus on the professional knowledge, skills and attitude of our students as future architects and urbanists, we in fact aim to create within the academic study and the educational environment a situation that shows some, or maybe even a strong, analogy to the way it works in professional practice. From that objective a second aspect in recruiting visiting and guest tutors and lecturers comes to the surface: we recruit them on the basis of their ability to coach future architects and/or urbanists in a comparable way as in professional practice. So we recruit architects and urbanists from professional practice that have experience in managing and coaching at their office in their daily professional life.

This of course doesn’t mean that we don’t see the relevance of didactical or pedagogical quality in relation to the quality of teaching:

- The members of staff have had didactical training and coach the visiting tutors during the semester.
- There are at least two sessions in didactical training during each semester, primarily focused on the design tutors: one at the beginning (theoretical context and general tips and tricks) and one at one third of the studio (specific tips and tricks related to the actual experience and/or problems of the tutors in teaching).
- Tutors of whom we are quite certain that we will ask them again are offered a more comprehensive didactical training.
- If they are really no good (and we gather this information also from our students), we won’t ask them again (that is a crucial part of our system: every guest or visiting tutor or lecturer is ‘hired’ for one design studio, theory course or training in specific skills, which gives us the opportunity to ask someone else the following year (either because of the changed content or because the tutoring was unsatisfactory). I can confirm that if we don’t take the consequences of bad teaching, our students will. Part of our system is that the tutors of design studios have to ‘sell’ their studio at the ‘studio market’ and I can assure you that our students will not sign in for a studio led by a tutor that is a bad educator.
**Horizontal curriculum: peer to peer coaching**

This, in fact, is how I would like to contribute to the theme of this mornings’ session: our very positive experience in using guest or visiting tutors and lecturers from professional practice as the main strategy to enhance the learning quality of Master students in architecture and urbanism ‘through’ the educators.

But to finish my presentation, I’d like to add some icing on the cake: another strategy that we have experienced as being very valuable in relation to the quality of learning is peer to peer coaching. To achieve this structurally, we use another aspect of our educational system: the so called horizontal curriculum during the second and third year. This means that during that part of the four-year Master’s programs, students can, to a large extent, compose their own program and students in lower and higher years (or, to be more accurate, students with less and with more experience) are taught alongside each other, so they can also learn from each other. Teaching by tutors within the study program is thus supplemented by input and feedback from other students, with different levels of experience and knowledge. Our experience is that this also strongly enhances the quality of learning.
My school is a new, small, cooperative school established in Portugal after 1982. It has only been there for around thirty years, so it is still quite young. It was set up because some teachers from the former Higher School of Beaux-Arts in Porto did not agree with the Government and the Ministry of Education decision to close them and turn them into two separate Faculties inside the official Universities: one Faculty of Architecture and another one Faculty of Beaux-Arts (with painting, sculpture, design and so forth). In the light of this, therefore, those teachers created this cooperative school (initially with all different levels, from kindergarten up to the university level, a pedagogical concept later forbidden by law...) where we still have painting, theatre, film-making, video work, photography, and so forth. In my school and in Portugal in general, we traditionally base the quality of learning on the quality of teaching. Therefore we insist on the performance of teachers, and pay a lot of attention to their recruitment. We also insist on the quality of the students selected.

Teaching and teacher-training in Portugal was also a tradition in the old days of the Beaux-Arts Schools; it was already in existence back in the sixties. I think this point is very important. We privilege the school-based teacher-student interpersonal relationship because we want to reduce the losses arising from the replacement of corporate learning by the academic system of today. Teachers of Architecture are usually professionals: they keep to their practice while they are teaching. That is why in the 60s most of the exercises they brought into their classes were the programs of the projects they had in their own offices. They kept working as professionals. This was true for all of them. At the end of the sixties, there was a huge crisis together with an attempt to radically change the teaching system and transform the curriculum of Architectural Studies. That was the time when Alvaro Siza left the School.

As a parenthesis: in fact, very often we call the "school of Siza" and we read (so many times!) in magazines about the "school of Porto", but that is something which does not really exist. This is because, first of all, Siza only taught in the school between the middle and the end of the sixties and after 1974, for just a few years. His level of requirement was very high for both activities so it was difficult to reconcile his professional and his teaching activities. And secondly, because there was never a "school of Porto" in the sense of formal design, or shared architectural language. It’s not accurate and it is unfair to so many other teachers - F. Távora, Lixa Filgueiras, Viana de Lima, Arnaldo Araújo, Jorge Gigante, Loureiro, etc. - who actually marked a special way of teaching and learning (attitude, methodology and objectives - including the awareness of the social responsibility of the architect). Nowadays the use of Siza’s name is just a form of self promotion for some!

To return to my main point: Along the sixties, some teachers began to introduce different approaches to the teaching system with quite different exercises. There were also different programs mostly in the first and second year, through Lixa Filgueiras and later, in the third year through Arnaldo Araújo. He was the one who in 1982 started our school. Most of these architects are now unfortunately dead. To continue, the issue of improving the current teach-
Session 2 Learning Quality and Staff Development and Recruitment

...ing must be analysed. Firstly, we must mention the crisis. In Portugal at least, the crisis is very deep-rooted along with the specific legal aspect concerning the employment system.

Secondly, another problem is that of the restrictions imposed by the Ministry of Education in each country after Bologna. All the staff must have a Ph.D. no matter how they obtained it, no matter from where and no matter in what subject. No one understands why this should be so. But we all know the deadline to present our Ph.D. thesis which is 2015. This is, in my opinion, absolutely ridiculous, as it does not improve the quality of the teaching in any way. Yet why is this so? It is so because, at the beginning of the 1990s, around twenty years ago, there were no more than a maximum of five or six professors with doctorates in architecture in Portugal. All of them were teaching based in Lisbon and the degrees were acquired abroad. In Porto, when the Faculty of Architecture was established in 1982, there was not one single Ph.D. in the Faculty. Only at the beginning of the nineties were there two teachers with a Ph.D.: one was an economist, who worked with me in S.A.A.L. program, and the other was a sociologist who had studied in Paris - and they were meant to be the Scientific Board! There was not a single architect with a doctorate! And that was because it was not in the tradition of the Beaux-Arts School’s career to have these degrees and not because the teachers were less competent. On the contrary... Because the Faculty was then inside the University a special program was therefore established, and the architects suddenly became “doctors of architecture”. Now, with Bologna, it was demanded that every teacher should have a Ph.D. (no matter which) and the present situation was created. The alternative was to remove everyone with experience from the schools and put new people instead who, after their studies, with the employment crisis, were in the fortunate position of having a father who could afford a Ph.D. program somewhere outside our country. They could not acquire those degrees in Portugal because they simply didn’t exist. They do now but in the nineties they did not. There were many people without any kind of experience; their sole quality was that their fathers were able to pay for their Ph. D. degree. That is the situation still. Ironically enough, due to the present crisis, it is less of a problem because there are fewer students.

In fact, some schools are closing while others, which three years ago had 120 students trying to get into the first year now have no more than 20/25 candidates. We do not need more teachers, but fewer teachers; it is no longer a problem of qualified teachers, rather, we now must have criteria for sacking teachers! Unfortunately, the criteria for firing teachers are administrative ones; this is a shame because this could actually be a golden opportunity to make the worst teachers redundant, but unfortunately, very often this is not the case and the university is in the position of having to fire the best teachers and of having to keep the worst just because they have a degree. This is the situation in general, although it differs in some schools.

In our school, for example, we had a wonderful Ph. D. student who studied in our school and then went to England. Yet it is the same problem here: the family could probably pay for his Ph. D. otherwise he wouldn’t have gone to England. In 2010, he won the top prize for the best thesis in the country. It was the first time that a foreigner had won this prize. I was his teacher and I was very proud of him. He is currently the Director of Bartlett School. This is however a single and quite unique situation. Unfortunately, most situations are quite different.

Another of the things that I think is very important nowadays is the fact that many people write a thesis and I believe it is important to improve the quality of a thesis. I have already talked about this: there are good examples. In Spain I think that they have very good examples of very
good architectural theses. But regarding universities in Portugal, most theses could have been written by a historian or by an engineer, not necessarily by an architect. When I say improve, I am talking about improving the subject because that is not done by the university. A good thesis is currently judged by the number of pages or the number of quotations, bureaucratic things which are not, in my opinion, actually that important for architects. Following Bologna, the scheme of our school nowadays is actually quite similar to what has been shown by our Norwegian colleague from Trondheim.

There is a similar development; in the first three years I do not think it all that important to have people who have done a long practice but I do believe it is important to have people with practice in teaching. It is also important to have older people, in the sense that they are more able to reflect on all the questions that we have been discussing. I think we can greatly improve the debates taking place inside the school and possibly have the EAAE promote them. I say this because I feel it is extremely important to exchange experiences of the way we teach in different schools throughout Europe and the different exercises we use in our classes.

Personally, I have learned a great deal and I continue to travel around as much as I am financially able to, in order to see how things are done in other places. For instance, quite recently, I watched an exercise at Royal School when I was in Denmark; I learned from it and now I can use what I learned. I maintain therefore that teachers must have, first of all, modesty. They should also be open-minded. There is another very important problem in Portugal that may or may not be different from what is found in other countries. In Portugal, forced by the Ministry, most of the teachers have always had something of an obsession with evaluation. Evaluation has become much more important than teaching. I find it quite incredible that this should occur at all levels, when you teach history for instance, and it often includes Project Design. There is a saying which goes: “If you are not able to learn while teaching, do not teach”. To conclude therefore: we should not forget that the students, as future members of society with a special role in it - something we have been discussing for a long time - are the objective of our work and they are the reason why our schools exist.
Debate

Peter Kjaer, Sweden

There is a question which I would like to ask you, which lay behind the formulation. If we go back a year, Marvin Malecha told us that in the US, almost half of all the work in offices had changed and was no longer classical architectural work, meaning that there is a change in profession, there is a change in the scope of the schools. Let me ask the members of the panel: how are you dealing with that in your institutions? How are you facing the challenge that is coming from society and incorporating it into the programme of your schools and in doing so, changing the schools? This is because you have presented very nicely the procedure for how you run the schools but how are new challenges being dealt with in your schools? For Chris van Langen, I know it is a little different because you have the practitioners coming in so you can see what is going on in the profession. But then I would ask you, what about the body of knowledge, the epistemology of your school, what happens there?

Chris van Langen, The Netherlands

You are of course completely right: we will claim that those changes within professional practice are brought into the school through the teachers that are coming in from professional practice. This is absolutely true. At the same time, it is also right to say that aiming at developing the body of knowledge of architecture within the students’ vocabulary is still crucial. We do this by defining for each part of the curriculum what part of the body of knowledge has to be addressed. This does not mean however that you cannot enter this body of knowledge through the new issues that are arising within the profession.

Nicolau Brandao, Portugal

Allow me to add something to this matter: first of all, the “visiting professor” is something that is very difficult to improve in Portugal. This is because we do not have the money for it. As to the influence of the professional, I am very skeptical about it. I think that one thing is to bring into the school the knowledge that is only obtained through practice and this is very important; what is difficult, however, is to create a barrier between this and the creation of “models”. With the kind of magazines we have - and there are many of them - and the images found in them… It is very difficult to stop a student from just following the image of a Souto Moura’s project instead of trying to understand how the architect achieved his final results. That’s why there must always be some sort of filtering even when you bring the profession into the school.

Tore Brandstveit Haugen, Norway

I would like to address some of the things we are doing in this respect. Regarding our architectural study programme, one important evaluation is that we bring in external examiners either from professional companies or from the profession to be our examiners. This applies to all levels. We focus in particular on the thesis at Master’s level that is more like a full performance with an external team of examiners. In this area, I admit that we do tend to focus on a some-
what traditional view of architecture. There are two other aspects which are important. Firstly, we have a strong focus on a subject called “Experts in Teamwork”, which is compulsory for all students at university. They work by assignments and problem-based learning which brings different groups of students together. This puts the focus on teamwork and organisational issues, which I think is a crucial issue for the future. It is very important to be able to work in a multi-disciplinary way on trans-disciplinary issues. I still think, however, that in order to be a good team worker, students need to have a core and a basic education in their own field.

Another thing we have done in the last ten years is that we have started five or six Master's programmes related to architecture. These are in planning, in urban ecological planning, in real estate development and sustainable architecture. They are in high demand, both from the public sector and from the private sector; these courses thus answer a real demand. Our challenge is that we are not sure as to whether we should integrate all these aspects. I would certainly say that we have to take it step by step. This is because we need to bring up good competences each year in these specific directions. This in effect is our answer: to broaden somewhat the faculty activities.

**Ugis Bratuskins**, Latvia

I would say that evaluation is the key word for this process in our school. It is based on several stages. One stage is the evaluation of the results of a course of study; this is probably something that every school does. It involves inviting external examiners to evaluate degree projects. The other important issue for our school, however, is public discussion of our diploma projects and of Master's theses. We usually try to organise these events in some publicly accessible area, not in the school itself, which allows us to invite more interested parties and to involve them in the process. Another stage of this is the evaluation of study programmes. It refers a little to our previous session and questions of accreditation; it is a rule in our country that every year, a study programme must be evaluated and the study outcomes examined. The opinion of the profession is a very important stage in this. The three basic levels are therefore study projects, public discussion and the re-evaluation of the study programme.

**Constantin Spirionidis**, Greece

I would like to continue the question that you raised in the previous version of this session that asked all of us to think about the staff development process, which is something extremely important; but I would also like to raise another issue that has to be discussed and kept in mind. This is the point that all the activities that we plan in our institutions, be they those of staff development or those of curriculum programming or of teaching approaches, are all based on a kind of model of architecture that we have in mind. This is because education is always based upon something we can call prediction. There is a concept, an image, a profile which we have in mind - consciously or unconsciously - and we try to create, to develop and to produce this profile. Nowadays, however, we find ourselves increasingly in a situation where we can no longer predict what this profile is and how it is structured. There are significant changes which have happened. At this very moment, we are educating architects who will enter into the marketplace and who will practise as architects after five, six, seven or fifteen years. Can we predict what an architect will be like after fifteen years? What are we creating, therefore? Something which, in all probability, will no longer exist. And if this situation
appears to be increasingly evident to us, unpredictability thus becomes a condition of our lives. Therefore, what kind of staff development do we then have to undertake in our schools? What kind of curricula and what kind of educational courses must we develop in order to cope with this unpredictability which has becomes a condition of our professional lives and of our understanding of the world? I understand that there is no clear answer to this or at least that there are various directions for answers, but in my understanding, this is something extremely important for the debates that we develop in this room.

Peter Kjaer, Sweden

You could call that a developed comment more than a question, but I would still like the panel to react to it.

Tore Brandstveit Haugen, Norway

I think it is very interesting to focus on what competences there are and to focus on our curriculum for the coming years, in respect to how we educate and what we teach our students today. It takes maybe five or ten years before they are in practice working as architects or in other positions and then they should have a great deal of knowledge which lasts for their professional life, for the next thirty years or maybe longer. What kind of knowledge do we want to give them these days when we are not able to predict the future? To start with scenarios and planning, and what we may be focusing on in twenty, thirty, forty years, I think in some ways is the wrong attitude. Instead we should focus on how we teach and how we give our students the knowledge to cope with the changing world where the requirements will be changing.

There was a Nordic journal, which asked a number of things in the Nordic countries last year about their views on this and to which we responded in different ways. My point was problem solving: how to cope with complex situations, how to work with complicated questions, that is something which will be an answer for the future. This is because in that way it is an answer to coming changes and a way to develop some sort of solution to answer the coming changes. It could be the climate crisis, it could be different areas or ways of working. We should however address these issues more forcibly and bring more of this type of work and of teaching into the daily work of the students. I think there are many methods and structures, which will help everyone be able to cope with the complicated issues to be solved. Even the design and architectural development of a very small-scale project may have enormous complexity when you examine it in detail. I would like to bring those kinds of ideas into the curriculum. We may then end up asking for slightly different competences from our staff. We need staff who can handle this; staff who can work and contribute knowledge in this field. We may also need a more generalised knowledge background for the majority of staff who can adapt their work over time. We come from a country where the protection of work places is very strong so if we have the staff, we will have to develop plans for them over a long time if they want.

Nicolau Brandao, Portugal

As usual, Constantine, you have put your finger on the problem. I believe this problem to be crucial. Allow me to defend the belief that in a certain way the curricula should be more and
more a part of the professional practice. I think that the curricula must be centered on the questions of ethics: these remain the same. It should also be centered on some kind of basic knowledge about techniques, which will remain the same: rock will remain hard, wood will always be softer and so forth. This does not change, whatever else does. The preparation of the architect should always be general and an open one. Additionally, the main issues are how to serve the community and to address the problems of humankind. In my school we pay a lot of attention to something that was not always there, that is, to the issues of anthropology and sociology.

Another important matter is the way in which we teach and work. We have to teach and so we discuss the best ways of teaching. What teachers should do is to improve teamwork. Our teachers, at least in Portugal in general, are against student teamwork, mostly because - as I said before - of the difficulty of evaluation in the end, as teachers want to be extremely clear as to which part of the work comes from whom. This is because they are very concerned in the end as to what mark the individual student will take, twelve, or eighteen, for example. It is stupid to connect a number with a work, but that is the way it is. So, it's more than that. The teacher must not only learn to allow the students to participate in teamwork and to improve it, but they must also learn to do it themselves with teachers from different areas and amongst themselves and other teachers of design. That is what the curriculum is like at the school at Trondheim: the first three years are connected with situations that are not really logically changeable. In the last two years, we have had many optional matters that are circumstantial. This could continue this year, but next year it could change. If you discover a new material being used for something, a different system of transports, or anything, you can then include it, and then take it out. That is a broad outline of the system.

I think that changes can definitely influence a curriculum. In the end, however, I do not believe in it much. It seems funny to me, because the system that is now in crisis pushed us to make a revolution in our curricula and I don’t believe in it: I think we should stage another revolution in the curriculum! I think we should develop it, changing things internally. This is because the experience of each school - if it was a long-term, honest job - changes according to circumstances, it changes from here to there. In reality, though, our curriculum has been there since the sixties in the schools of Beaux-Arts. Nothing has really changed much. And our students, in the end, are as prepared as the other students. Thus I think the essentials should be taught in the schools and this is immutable: the ethical and humanist questions.

Peter Kjaer, Sweden

I would like to allow myself a comment. Basically, the future is now and change is eternal. Nothing is static, in that sense. I therefore believe that we need to have flexibility in the way we create the curriculum and in the way that we hire staff. The staff that are already there in the faculty, they can develop either through being part-time and doing practice, or by doing research in some area. However, it is a little much to ask them to maintain the whole development and I do believe that we need to find people from practice, at the very forefront of practice, and to bring them into our schools. Here, they should not only teach the students but also teach the faculty. The faculty needs to be in an ongoing situation where they are with the students. It is totally unfair to ask the faculty to be continually upgraded in the newest of everything. It is impossible. So we will emphasise to them that we need to accept the limits,
but at the same time, this is where teamwork comes in. We ask students to undergo courses in technology; we take the best from practice in Europe, from Stuttgart and wherever, and after a week, they leave and then the faculty takes over. But their knowledge is not on that level. So the knowledge disappears. This is a crucial issue: this has something to do with the curriculum, but it also has something to do with the way we orchestrate things and how we make things work together.

Again, practice is many things. In Europe, we have quite a strict concept of what architectural practice is. But if you go to Columbia in South America, for instance, schools there are doing architecture; they are not simulating, they are already in the Master’s programme. This means that practice has comes into schools. This also gives completely new practices and new business models. This way of thinking, of schools just being institutions, we may be beyond that time: perhaps institutions like ours need to develop critical understanding and cultural understanding of how to act and then to act at the same time as we develop our outstanding academic aspect. I think this is extremely difficult; at the same time, I think it is necessary. It is as simple as that.
Session 3

Learning Quality and Teaching Methods

The teaching of architecture and more specifically the teaching of architectural design has been repeatedly discussed in our previous meeting. However, in most of the cases we tend to evaluate the teaching practices without having a clear idea of how to evaluate the quality of learning achieved and even more to evaluate the impact of this teaching in the overall learning quality achieved by the entire curriculum.

Have we established ‘learning outcomes’-oriented teaching practices in architectural design?

Have we developed new teaching approaches to architectural design based upon learning outcomes?

Are students’ design proposals and portfolios the only means to evaluate the quality of learning in architectural design education?

Are they sufficiently adequate to enable the evaluation of this quality?

Do we have to propose to the schools of architecture teaching approaches able to assure a higher learning quality?

Which are the main values and the reference points of the learning quality in contemporary architectural education?
Session 3 Learning quality and teaching methods

Chair:
Pierre von Meiss, Lausanne, Switzerland

Introductory panel:
Juvenal Baracco, Lima, Peru
Jim Low, Birmingham, United Kingdom
Kestutis Zeleckis, Kaunas, Lithuania
Session 3 Learning Quality and Teaching Methods

Introduction by Pierre von Meiss, chair

In architectural education we tend to evaluate teaching methods and practices with a rather fuzzy idea on how to measure learning outcomes. Student evaluation? Examination results? Juries? Appropriate tests or interviews? Post-degree surveys?

It becomes even more difficult when trying to evaluate the impact of a particular segment on the overall learning achievement of the entire curriculum. If we were able to judge the results could be disturbing: what if Liechtenstein does better than Harvard? When one asks former graduates about what they now consider their schools main contribution to how they practise today, they persistently mention exceptional personalities, educators.*

Learning outcome in architecture is less a question of accumulated knowledge than being able to seek and organize knowledge into a hierarchy in view of the making.

Constantin Spiridonidis has put down some very pertinent questions in order to frame this session’s topic. I shall comment and emphasise some of them:

Have we established learning outcome-oriented teaching practices in architectural design?
Are students’ design proposals and portfolios sufficiently adequate means to evaluate the quality of learning in architectural design education?

Today, the answer is probably “not yet”. In most final juries it is “the product” which is evaluated. There is nothing wrong with that, but it reflects merely a small portion of the learning outcome. At its worst, the student may have done exactly what the teacher expected him to do; at best he did the opposite, but was able to convince the jury with his superior design.

Have we developed new teaching approaches to architectural design, based on learning outcomes?

I am eager to listen to your presentations!

Do we have to propose to the schools of architecture teaching approaches able to assure higher learning quality?

We should. Perhaps we could establish a network of architectural educators and committed professional pedagogues to investigate the most adequate strategies to enhance approaches where students develop a sense of self-learning, individually as well as in seminar/group debates. Develop the capacity to question supposed certainties and trends, ask questions, test their pertinence and search for methods to come to grip with the unforeseeable future will certainly be part of it.

Which are the main values and reference points of the learning quality in contemporary architectural education?

An ethical basis; curiosity; a comprehensive and critical knowledge base; motivation to question; love for good craftsmanship; adaptability; ... 

* As opposed to primary school teachers, University professors have virtually no pedagogical preparation. They are not selected for their teaching qualities, but for their research achievements. Up to a few years ago architectural design teachers were on the contrary selected on the basis of excellence of their work in practice (which is o.k., but still did not necessarily make a good teacher). This has changed with the more or less generalized PhD requirement, which, putting it bluntly, increases the risk of hiring a bad teacher and at the same time a mediocre designer …
**Juvenal Baracco**
Principal Professor, Faculty of Architecture and Urbanism, Universidad Ricardo Palma, Lima, Peru

**The Design Studio Spirit**

"In the "Architect Design Studio Spirit teaching there is a stage to cultivate" the architect". This task goes beyond training professionals that are knowledgeable in art, develops their mind and spirit which turns them into passionate adventurers capable of transforming reality and consolidate new spirits that transcend"**.

"Within the philosophy, the term 'spirit' comes from the Latin spiritus," a puff"," a breath"," a breathing out '. It has been often used, to refer to something essentially immaterial and endowed with "reason." Furthermore,"... it means all the various ways of being that somehow transcend what is vital". And it has been introduced by many authors- philosophers as a reality, so to speak, which is "living" and "active". A reality that remains in force over time and allows it to evolve and has the capacity to strengthen itself from each new experience that inspires it. Additionally, and far from any philosophical inquiry, it is not absurd to think that the things we build are also permeated with our spirit, feed on other spirits which interacts with them and enriches them up to the time when they build their own spirit, allowing them to eventually sustain themselves."

The Design Studio"starts its work from the knowledge and awareness of the body. It is indisputable that to cultivate the spirit requires first knowing its complement: the body. The enjoyment of perceptions and sensations is referred to the body. It is impossible to divide the emotions of feelings and you cannot separate the body from the spirit. The enjoyment is a total conception. Furthermore, spaces are generated from the extension of the body and from which the spatial buds multiply to protect man."

"Being aware that the project Design Studio is designed as a total training cycle for architects and it is the space to develop creativity, exploration strategies, tools for understanding - space management and skills to develop as future architects; that their actions are based on the continuous resolution of problems (at different scales), in the theory - critical and experimental foundation related to architecture and its context, and that this dynamic creates a wealth of experience (problems, strategies, solutions and possibilities ) valuable for the personal and professional life. We will focus on highlighting some strategies that have been implemented by the teacher in the learning stage to form the"spirit of the Design Studio", which is an engine that is assembled, calibrated, developed and it conforms a strategy for creative transformation."

"By knowing the teacher, there is no doubt that the talent; passion and commitment are the main ingredients to configure this spirit."

The spirit of the Design Studio is forged with the commitment of students and teachers, where the teacher agrees to be committed to the student and the student commits himself to comply with the requirements set forth by the teacher. Without this dual commitment the Design Studio Spirit would not be possible. The talent, passion and commitment of the students are the essence of the Design Studio, and have been formed progressively by the established guidelines and practices from the beginning which have turned into training routines.

There are guidelines that correspond to the teachers, to the skills and characteristics required to be good transmitters of knowledge and effort motivators for students:

- The constant curiosity and creativity of the teacher in the development of exercises to arouse the student's interest and raise challenges that will motivate him. And the passion of the teacher in the task undertaken is the motivation engine.
- The proposed strategies to develop the sense of inquisition in students, proposing exercises by rummaging in an imaginary world which prevents the use of ready-made solutions in their everyday world.

Other guidelines are consistent with the features that the students who decide to take the course in the Design Studio should have, and is based on the never-ending work, based on the method of trial and error which provokes reflection and the student's competitive spirit and learn to question Conventional processes.

The training phase requires the student commitment of doing a dedicated work, thorough and consistent with deep conviction in what he does.

From the beginning and throughout 40 years the Design Studio has kept the same guidelines and has perfected them for teachers and students but has changed the approach of learning processes. For 14 years, the Design Studio has established a structure that is kept until today. It consists of three stages: Basic Stage, Formative stage and Pre-Professional Stage.

**Basic Stage**

Recreates the idea of the architectural process in its basic steps and activities to their simplified scales in its two initial semesters and is centered on the student himself starring in his own project, begins on his own body and ends in the constructed object.

- Basic Design Studio I (1st semester): Works the human body as a reason for and generator of architectural space with light, the built form and its perception.
- Basic Design Studio II (2nd semester) Deals with the architecture as an intelligent and complex process, the inventive resource to solve it with the use of gravity, the materials and the construction process.

**Formative Stage**

Starts with the reading of nature or on other external means and the awareness of the space within the architectural object in three types of territory. For an identifiable external user or
Session 3 Learning Quality and Teaching Methods
not, and includes the required training for the projected process. This stage is developed in three semesters.

“Huaca-Territory” (3rd semester): Deals with the isolated architectural object within nature and the organization of the internal architectural space, as a reflection of itself.

City Block“Manzana” (4th semester): Deals with the complex architectural object within the city as an artificial product from the human inventiveness and the multiplicity of relationships of urban citizens and the limitations that that means for the space and architectural form.

“Metaphor” (5th semester): Deals with the architectural object embedded in the culture of its time, or in extreme situations of physical or utopian nature. It is based on the premise that every work of architecture is a utopia while it is not built because until that time it is only a cultural event of its time, this could include other art forms as ideas that can be the starting point for new architectures at different times.

**Pre-Professional Stage**

It assumes that all project issues are of comparable complexity, as this is not in the wording but in the complexity of the mind of the designer and what he proposes and what does exist is the organization tasks and coordination that in a case is different and must be practiced according to the learned principles within a context that simulates real working conditions at various junctures in successive exercises to familiarize themselves with the project methodology.

VERTICAL (6th -10th SEMESTER): Architectural and urban exercises at various scales and themes according to the experience of the group.

MEMORY (6th -10th SEMESTER): Every few semesters the students conduct research exercises on their personal early memory under emotional personal and social circumstances in its early childhood and how these circumstances have influenced its formal proposals as a conditioned response by the memory.

The guidelines that describe the approaches are:

The Design Studio is an integration of various concatenated processes (through all levels of the career), refined over the years.

The complexity is not in the wording of the project but in the response of the designer. It is that the designer has the most complete and intelligent position possible regarding the project with changing situations that can totally alter it, so that he can fully reformulate it“Learning to learn”.

In the Basic and Formative stage, students are free to change all the rules and transform all the elements of the project or the pre-existing reality, real or fictitious, in order to express their ideas, with conscious of a pre-existence and establish a changing logic that investigates knowledge and thought.
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The teacher gives the student the ability to change all reality. The continuous work on transformation processes guide the student to develop the required abstract understanding, and all this linked to a multidimensional journey that ends in the manufacture of the object at real scale or at a scale that requires the details of a real artifact, whether in appearance or movement.

Raise "the absurd" as a method to explore new paths. The art, the fantastic, the unreal and the imagined associated to the architecture are just excuses to break paradigms to defy imagination.

The demand and self demand turning the requirements of the teacher into a quality inherent in the student, and consequently a characteristic of the Design Studio.

The random and arbitrary situations are an opportunity for creative development. This controls the levels of connection, structure, depth, inquiry and the application of theoretical concepts to the practice and vice versa.

The ongoing investigation is the backbone to develop unconventional ideas, not only from the teacher, but also from the students. Telescopic Journey (to climb) and divergent, which investigates in human beings, about the case studies and things to promote the search for certainty that are not obvious, but are potential, will allow students to refine their judgment. This does not only focus on managing certainties to verify, encourage reflection on its knowledge and help to solve their conflicts but also interfere in magic and incommensurable universes in phenomenological observation and inside the own spirit of the student to get the sensory perceptual tuning.

The teacher builds together with the student solid foundations that support gradually their activities, knowledge (theoretical, spatial and imaginary) and spirits. Where the first stage is more contained and scaffolding by the teacher, while in the last stage, the support is transferred to the student and its own spirit allowing supporting its own knowledge, methodologies, strategies, arguments, etc. Thus, the spirit of the teacher interacts with the spirits of their students and strengthens the spirit of the Design Studio.

Working continuously in external and internal transformation processes will develop perceptual, telescopic and multidimensional exploration strategies looking beyond the universe.

The student becomes a carrier that discloses his history, the history of his teachers and his preparation experience: the "spirit of the Design Studio". Through experience the student creates a narrative consistent with his history, understands a language, creates new languages and definitely revives and multiplies the "Spirit of the Design Studio."
Jim Low and Hannah Vowle
Senior Academics, Birmingham City University, School of Architecture, Birmingham, United Kingdom

This paper reports on research findings into the current studio culture in architecture higher education in the UK. The research was funded by the Higher Education Academy [Centre for Education in the Built Environment] and Birmingham City University.

The research set out to:

• Explore attitudes amongst students, Heads of Schools of Architecture and other senior academics into the place of studios in learning and teaching pedagogy within architectural education in the UK.
• Explore the belief that “studio culture” is a good thing as applauded in Royal Institute of British Architects [RIBA] validation board reports and that large studios provide “crucial peer learning opportunities” and are a unique learning experience.
• To test the “conventional wisdom” that studios provide a good and essential student-learning environment.

The research is being carried out at a time when studio pedagogy and its accommodation are coming under threat in the UK. It is hoped that the findings will provide evidence to support studio provision in a context of the threats of University space-charging, centralised room booking systems, diminishing capital spending and perceptions by management that studios are underutilised. Also the studio has been challenged through questions about twenty-four hour opening, the ways in which studio pedagogy has been found to perpetuate gender bias, and to be resistant to diversity and widening participation agendas. It may also dispel a view of the studio as a know-nothing, archaic, authoritarian remnant of the École des Beaux Arts.

There were a number of key questions asked in exploring the quality of student learning:

• What did students perceive to be the key factors for a “successful” studio?
• What were the key factors that meant students work in the studios?
• The studio is intended to offer a venue for shared learning, how much do students think they learn from each other and how do students benefit through discussions with other students?
• Describe what could be improved or changed in the studio and how important is it that facilities are available in or close to the studios?

The findings are from an online questionnaire carried out in 2012 with over 450 respondents representing 29 Schools of Architecture, half of all UK schools. The majority of respondents were undergraduate, 69%; male, 54% female, and 99% were full-time students. The survey focused on four sections namely, personal information; course information; attitudes to studio and attitudes to independent learning.
A review of the research literature, prior to the survey, confirmed the rich source of findings on studio culture from the USA. In 2003 the National Architectural Accrediting Board (NAAB) at its Validation Conference together with the American Institute of Architecture Students (AIAS) successfully advocated an additional condition of accreditation, entitled, “Studio Culture”, which requires Schools of Architecture to have a written policy regarding the culture of their studio environment.

We need to recognise changes in the student population. There has been an increase, in the UK, in the number of students studying architecture and also an increase in their diversity, including ethnicity, socio-economic background and prior educational experience. This has been part of UK Government policy to widening participation in higher education. A result of the increased university fees in the UK is the likelihood that students will have higher expectations. Students now have to work in low-paid, part-time jobs as result of financial pressures; in effect it means that we are seeing the end of the "real full-time student". Therefore, students increasingly are unable to work as much in the studios.

Students on graduating are increasingly faced with a construction industry where there is high unemployment. Students and graduates embracing models of collaborative practice, a move away from the “virtuoso soloist” towards self-styled, loosely collaborative group identities such as; Foreign Office Architects, FAT, muf, UN Studio, BIG, SUBdv. In the last three years, in the UK, the proportion of women students has fallen from 28% to 21%. They make up just 16% of the profession but account for 28% of unemployed architects.

Students are predominantly taught by faculty staff of the previous generations, whose values differ considerably. The next few years will see many of these faculty staff retiring.
**Session 3 Learning Quality and Teaching Methods**

**What do you think are the key factors for a 'successful' studio?**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Very important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good quality tutors</td>
<td>93%</td>
</tr>
<tr>
<td>Access to equipment (printers/plotters, etc.)</td>
<td>79%</td>
</tr>
<tr>
<td>Access (e.g. opening hours)</td>
<td>77%</td>
</tr>
<tr>
<td>Own workspace in studio</td>
<td>60%</td>
</tr>
<tr>
<td>Studio environment (lighting, etc.)</td>
<td>56%</td>
</tr>
<tr>
<td>Access to fellow students</td>
<td>51%</td>
</tr>
</tbody>
</table>

**What are the key factors that mean you work in studio?**

<table>
<thead>
<tr>
<th>Factor</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Project review</td>
<td>87%</td>
</tr>
<tr>
<td>Group work</td>
<td>84%</td>
</tr>
<tr>
<td>Project event (e.g. presentation)</td>
<td>82%</td>
</tr>
<tr>
<td>Visiting tutors</td>
<td>78%</td>
</tr>
<tr>
<td>Model making</td>
<td>67%</td>
</tr>
</tbody>
</table>

**How do the following discussions with other students benefit you / your studies?**

<table>
<thead>
<tr>
<th>Discussion</th>
<th>A great deal</th>
<th>A fair amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gaining outside opinions</td>
<td>52%</td>
<td>32%</td>
</tr>
<tr>
<td>Sharing ideas</td>
<td>51%</td>
<td>37%</td>
</tr>
<tr>
<td>Sharing references/precedents</td>
<td>47%</td>
<td>34%</td>
</tr>
<tr>
<td>Gaining knowledge</td>
<td>46%</td>
<td>36%</td>
</tr>
<tr>
<td>Software advice</td>
<td>41%</td>
<td>31%</td>
</tr>
<tr>
<td>Technical</td>
<td>36%</td>
<td>36%</td>
</tr>
<tr>
<td>Presentation methods</td>
<td>29%</td>
<td>34%</td>
</tr>
</tbody>
</table>

**How valuable is the tutorial contact in the studio?**

<table>
<thead>
<tr>
<th>Contact</th>
<th>Very valuable</th>
<th>Quite valuable</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 1 tutorials</td>
<td>84%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>1 to 2/3/4 group tutorials</td>
<td>42%</td>
<td>38%</td>
<td>10%</td>
</tr>
<tr>
<td>1 to 5+ group tutorials</td>
<td>23%</td>
<td>30%</td>
<td>13%</td>
</tr>
<tr>
<td>Reviews/crits</td>
<td>68%</td>
<td>23%</td>
<td>1%</td>
</tr>
<tr>
<td>Seminars</td>
<td>20%</td>
<td>25%</td>
<td>29%</td>
</tr>
</tbody>
</table>
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What the studio is used for apart from formal teaching sessions

<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group work</td>
<td>94%</td>
</tr>
<tr>
<td>Design project development</td>
<td>91%</td>
</tr>
<tr>
<td>Model making</td>
<td>85%</td>
</tr>
<tr>
<td>Research</td>
<td>51%</td>
</tr>
<tr>
<td>Meeting socially</td>
<td>48%</td>
</tr>
</tbody>
</table>

Number of times a week students meet with their tutor within the studio on average

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1%</td>
</tr>
<tr>
<td>1</td>
<td>33%</td>
</tr>
<tr>
<td>2</td>
<td>57%</td>
</tr>
<tr>
<td>3</td>
<td>6%</td>
</tr>
<tr>
<td>4+</td>
<td>3%</td>
</tr>
</tbody>
</table>

The tables above illustrate how studio culture is both a rich and intensive context of teaching and learning and that staff and students recognise the value of peer learning that is supported by interaction in the studio. They refer to undergraduate respondents to the online survey.
Some conclusions

- **Challenging times**
  The context of the studio in UK architecture education is evolving due to changing economic, financial, technological and social conditions.

- **Studio culture: the value of peer learning**
  Studio culture endures as a rich and intensive context of teaching and learning. Students have strong feelings and well developed ideas about studio culture. Staff and students continue to recognise the value of peer learning that is supported by interaction in studio, especially in undergraduate studies where studio can facilitate the fundamental shift in thinking necessary in the transition from school pedagogy to undergraduate studies. Strong studio culture needs to be established and embedded from first year in order to get the maximum benefits.

- **A more complex picture**
  There is a more complex picture of the influences both on student working habits and on their perceptions. Postgraduate students appear to be less dependent on the studio for learning, having progressed from ‘passive’ to ‘active’ tutorials, but still appreciate the fundamental value of informal social interaction it provides. There was a recognition that mixed studios would be very welcome, bringing together students at the various stages of their studies to their mutual benefit.

- **Resurgence of the studio**
  Studio culture is seen by senior architecture academics as central to architecture education. There has been a recent resurgence in the use of studios for ‘making and drawing’. The studio remains a fundamental part of students’ learning as a constructive process of dialogue with peers and tutors, at best a means of preparing for practice through working in teams, both formalised timetabled contact with academics and peers and the serendipity of informal dialogue and collaborative exchange.

- **A rich student learning experience**
  There is evidence that much student learning takes place between students, independent of tutorial input, and that students who interact with peers and academics in the studio succeed better than those who work in isolation. Many students were clear that it is the symbiotic relationship between staff and students that is crucial to learning; that only having access to one or the other would not offer the same rich learning experience and that this in effect happens in the studio.

- **Caution**
  It is also evident that the studio can foster a competitive, intimidating culture and unresolved issues of detrimental, unprofessional and biased working habits remain, reproduced through studio practice both in academia and in employment. Both students and academics have strong opinions for and against the 24/7 studio. Whilst it offers flexibility that fits around the complexity of contemporary student lifestyles balancing other responsibilities and aspirations, it can also distort the value that students’ attach to time. This devaluation of time does not assist in the development of the time management skills that are required for employment.
• The productive studio

For academics devising and operating studio policy it seems that key issues influencing the degree to which students make use of the studios available to them work in tandem. For instance, there is consensus that students learn a great deal from one another and that this happens when they are easily able to meet, work together and socialise with their peers and also with students from other years and levels in the studio. A key factor affecting the degree to which they can work in studio to take advantage of this is whether or not they feel they can leave their work there safely rather than carry it back and forth. Some felt that secure lockers large enough to take models made all the difference between working in studio and feeling that the only option was to work at home. Many students felt that having open access and open plan studios available to mixed groups of students both during and outside of scheduled teaching hours also nurtured a productive studio culture.

• Conventional wisdom: “studios are a good thing”

This has been a brief snapshot of the online survey of UK architecture students. The research provides the evidence to support the long-held “conventional wisdom” that the studios “are a good thing.” The resurgence of the studio provides a unique student-learning environment.

Hannah Vowles, Senior Academic in Architecture, Jim Low, Senior Academic in Architecture and Holly Rose Doron, MArch student, Birmingham City University, School of Architecture, Birmingham, United Kingdom, carried out the research during 2010-12. Further analysis of the data collected in the online survey will facilitate understanding of attitudes of particular groups and demographics towards aspects of architecture education in the studio when year of study, age, gender and ethnicity are used to filter responses, as well as information about the particularities of provision at the various participant schools.

Photos: Holly Rose Doron
Kestutis Zeleckis
Head, Kaunas University of Technology, Department of Architecture and Land Management, Kaunas, LITHUANIA

Synergy of Small Things

“Great things are done by a series of small things brought together.”

Vincent Van Gogh

Studies of Architecture have started in Kaunas in 1922. In 1970 faculty of architecture was moved to Vilnius, but continuity of tradition of architectural education was kept in the Institute of Architecture and Construction. In 1995, after the restoration of independence of Lithuania, the full studies of Architecture were restored at the Faculty of Civil Engineering and Architecture. At the European scale it is a small school with 200 hundred students in Bachelor, Master and Doctoral studies. Motto of the school: Contextual architecture. Its unique features if comparing to the other schools of architecture in Lithuania are the following: balance of artistic and technological disciplines in architectural education; cozy atmosphere of the studies and close contacts between the students and teachers; integration of both academic knowledge and practical skills; close integration of research and education.

The 20 years of independence brought a lot of radical and quick changes to society. Sphere of higher education does not make an exception, e.g. introduction of Bologna system, new teaching methods and ideologies, new technological possibilities, etc. Students, their initial abilities and demands are changing too.

11 points of European directive describe the desired results of architectural studies. In the light of the above-mentioned results the following challenges in the field of learning quality and teaching method could be observed during the last decade:

- Strict curricula of the studies with limited amount of hours for the groups of the subjects. It limits sometimes the necessary flexibility of the study process for deepening of precise skills.
- Time shortage: it is always too little time for the teachers and students especially in the disciplines of architectural design.
- Less motivation from the side of students at the beginning of the studies.
- Individualism and lack of team-work skills; lack of professional communicational skills at the beginning of the studies.
- Lack of analytical skills and feeling of “real situation”: it is easier for the students to understand architecture as a pure art or just nice form.
- Need to develop spatial thinking and artistic skills because the artistic skills that are brought to the school, during the entrance are decreasing.
- Lack of professional responsibility in general and lack of understanding of the architect’s responsibility in society.
- Etc.
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Fig. 1
Recreational area in the campus designed by the students for the students.

Fig. 2
Collection of the task of Abstract Architectural composition of the 3rd semester done by one student: big number of different tasks is favourable for development of the skills of usage of architectural language.

Fig. 3
Abstract painting develops creativity of the student and ability to articulate ideas in different artistic languages.
How we should deal with the above-mentioned challenges? On the one hand, the stability and tradition of the program creates additional value; on the other hand– the changes or improvements should be made and additional flexibility of teaching methods is needed.

At KTU we see the participants of the study process, teaching methods, tasks, etc. as an elements of one complex system. Complexity means that even some small changes can have huge effects on the whole system. As a result of the attitude a lot of attention is given to small things: small calibrations of already known teaching methods, indirect forms of motivation, additional tasks and possibilities for self-improvement. These “small things” have huge potential for the improvement of the results of architectural studies.

While sharing our experience about the “small things” we would like to point out the most important moments of the studies in our school.

Even with the limited time schedule and definite need for the architects to have a good knowledge of technological aspects of architecture, the Artistic skills are considered as basic for activation of the right hemisphere. Two goals of artistic drawing studio could be mentioned here: 1) development of spatial perception and feeling of the form; 2) development of the skills of artistic improvisation. Achievement of the both goals is assured by combination of two tasks: artistic drawing of the real objects with focus on the proportions, composition, volume, etc.; artistic improvisations while using different techniques of painting – those are not related directly to architecture but increase creativity and develop artistic self-confidence.

Spatial thinking is one of the key abilities of a successful architect. Requirement to make 3D Models as a part of each project is obligatory in our school. Process of production of the models by hand at the beginning of the studies allows for “feeling the volume through making it” experience. Later, production of the model helps to validate the design solutions of the students by themselves.

There is limited number of hours used for abstract architectural compositions and there are two possible ways to use this short time in architectural studies: one big task for the semester as it was done some years ago in all schools in Lithuania or many small tasks during the semester. We are in favor of the second one: it puts an accent on development of articulation skills of architectural language instead of just presentation of the results of abstract design.

Problem oriented learning is not a new thing but small calibrations can make it more effective in the studies of architecture:

- Real locations for the projects and obligatory site analysis with focus on the actualities of the context. It allows the students to get in touch with the real life situations that could not be modeled with the high precision within pure academical tasks.

- Integration of subjects of architectural design and building constructions. Results of the studies demonstrate that parallel development of the knowledge of building constructions and design skills allows for better results in both subjects.

- Integration of urban planning and final bachelor project. During the 7th semester students prepare an urban project on a large scale. Spot for the final bachelor projects is often selected on the base of the work of the 7th semester. Such continuity of the projects increases the motivation, responsibility and feeling of the context of the project.
Fig. 4
Part of the project of renovation of Kaunas Downtown: the actual topic and public interest gives additional motivation for the students.

Fig. 5
Project for renovation of Khashuri square in Georgia. All projects were exhibited in Khashuri and the winners were greeted by the Ambassador of Georgia in Lithuania.
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- Practical tasks in theoretical courses for obtainment of theoretical knowledge through **doing** instead of listening. Two examples could be mentioned. The first one: subject of urban history. Besides the lectures a practical task to prepare architectural sketch of the typical cities of the selected periods is given to the students. While working in the groups students identify the "bricks of urban fabric" after analysis of a certain number of the historical cities. The analysis involves obligatory aspects: transport and engineering infrastructure, street culture and public spaces, urban generators, functional zoning, morphotypes, etc. While presenting the project to the colleagues students must explain urban form in the cultural context of the period: technologies, political system, social structure, etc. The final exam of the subject is based on the problem-oriented questions and various information sources could be used in the auditorium. The second example: subject of landscape architecture. Besides the theory the practical part exists there. The last one focuses on real small tasks or real situations, e.g. design of the courtyard of the faculty. It is a recreational outdoor space of the students. The last fact gives additional motivation and helps to understand relation between design solutions and needs of the users better.

Tasks outside curricula make an important addition to the curricula of studies and help to improve learning quality. The following types of the additional tasks in KTU are used regularly:

- Inner workshops. There is tradition since two years to have one workshop per semester. Students of different years are invited. Team-work is a typical form of participation. Real architectural tasks or actual themes are selected as topics for the workshops. In the last year the inner workshop with the initiative of the students was transformed into an international event. Examples of the topics of the workshops: architectural concept of KTU campus; revival of Kaunas ZOO; idea for the renovation of Khashuri square in George (organized in collaboration with the Ministry of Foreign Affairs of Lithuania); recreational space of the students in campus, etc. Some of these projects are realized in real life later.

- Inner competitions organized as an addition to studio work with the help of social partners.

- Provisions of information about the competitions and encouragement to participate with part of the expenses covered by the faculty. The following events could be named: East-East, Isover competition, Archiprix, etc.

Creation of favorable conditions for learning from colleagues should be considered as very important "small thing" too. Atmosphere of positive competition, self-motivation and learning from the colleagues at KTU School of Architecture is encouraged by the following means:

- Public exhibition of projects inside the university;

- Exhibitions outside of the university, e.g. exhibition of paintings in the neighborhood municipality;

- Public presentation and defense of the projects since the first years of studies.

- At the moment involvement of the students into evaluation of the projects is considered.
Fig. 6
3D model is an obligatory part of each project at KTU.

Fig. 7
Results of the measurement practice are presented in the posters and exhibited in local communities.

Students are required to exhibit their works since the first years of the studies. By so doing, they are encouraged to learn from each other and indirectly participate in the evaluation process.
Practice makes an important part of the study process of architecture. Benefits of the architectural practice in the architectural office are understood by the students easily and proper motivation is demonstrated, while the practice of architectural measurement is sometimes seen as obsolete or old fashioned. To demonstrate the usability of the results of the measurement practice and increase motivation of the students these activities are combined with research of vernacular or historical architecture. Presentation of the student works to local societies or stakeholders become an important and attractive element of the practice.

Master studies in Architecture are research driven at KTU. To get better results it is very important not just to perform formal research tasks, but to get involved into scientific activities as much as possible. To assure that the following steps are taken:

- “Local tasks but global problems”. One widely actual research theme is given for one student for two years. During the three semesters students must master and combine three research methods or ways: deduction, induction, analogy or research by design. Continuity of one topic through three forms of architectural research assures better understanding of the peculiarities of scientific approaches and possible ways of usage of science for design purposes.
- Involvement of students into research projects as technical or research staff. The projects conducted during the last year in the Department of Architecture could be mentioned: investigation of dependencies between spatial urban structure and security of inhabitants in Lithuania; investigation of utilisation possibilities of military architecture, etc. Common scientific publications are often prepared as one of the results of projects.
- Organization of the scientific conference for master and doctoral students. It creates a discussion forum where young people feel unconstrained by the presence of mature researchers.

**Conclusion**

While observing the quality of the study results, such as design skills, understanding of context, ability to work in the team, etc. we can state that the above mentioned “small things” do a great job for assurance of better learning results. “Small things” give additional flexibility to the program and allow reacting quickly to various changes of the situation: differences between the initial preparation of the students; less motivated group, etc. “Small things” in some cases can play a very significant role in the development of some skills needed by the practicing architect and supplement significantly curricula of the program.
Debate

Kostas Moraitis, Greece

Thank you very much for your presentation (referring to the keynote lecture by Jean Loup Castagne): it was extremely interesting and helpful for our way of teaching. I have two small objections, however. First of all, you are speaking of a way of teaching that is equal for theory lessons and for design lessons. I believe that in design lessons there is a tremendous difference between architectural teaching and the other academic way of teaching. That is to say, in architecture we use a non-verbal way of communicating. This means that the teacher is not only a model of a person or of a professional, of somebody who knows, but he is also a model of an activity, something which is a great deal more complicated. Sometimes we cannot understand that we are a model of an activity because we work in a school and obviously what we cannot do is present this while continuing our work with other teachers. The second point is that because of this difference, students in the school have to learn from the beginning a language, which they do not know. It is a language, which is not well-structured as is the verbal way of communication. In semiotics we distinguish in French langue and language. Architecture is not an organised langue, c’est un language - it is a language. This means it is not a well-structured way of organising things. However, it is a very important compositional problem, constructing architecture. This relates to a second problem: that students do not feel that this compositional way of thinking needs a lot of time and a lot of effort to put things together. I have to say that for me, those are two very important problems for design studios. The first is that we try to communicate in a non-verbal way; the second is that we try to teach a compositional way of acting. Obviously, all thinking means restructuring, it means composing things. In architecture, however, like in painting, or in sculpture, in teaching like this, we have to compose things which are non-verbal and that needs a difference in the way of teaching and that means a re-evaluation of our way of behaving.

Jean Loup Castagne, France

I would actually like to answer the non-question that was raised earlier by Konstantinos Spiridonidis about the non-verbal language of architecture. Perhaps this would be a good one to start with? It was not actually a question so I do not want to answer it exactly, but my point of view on this is that communication is used differently from languages. In architecture, it is my opinion that the language of representation, the language of non-verbal communication is the language that is to be used between architects, or from architects to engineers, but if you want to communicate with the people who are asking you to design a conference centre, for example, that non-verbal communication is not enough. That is the first part of what I believe; the second part is that both verbal and non-verbal communication in architecture are teachable. It is not a gift from God, it is something that some students are naturally good at and others need more help and time with. There are also some, I am afraid, who, despite all the help the school and the teacher provide, will never manage to find a way, or take so much time that it is going to take years for them to perform. I believe, however, that everything is learnable: it is a question of time and of how much money and time you want to put into the teaching.
Maria Anagnostou (student), Greece

I have a question specifically for Mr Castagne, although anyone else may answer it also. I am a student at the Aristotle University of Thessaloniki where I have had great teachers for five years now. Some teachers were better than others, while some were not so great because of their communication skills. I have an example. There was a time where I was present at the presentation of a project; there was a female student and when she finished her presentation, after she had explained everything she had done, the teacher simply told her: “You should not be here!” When the student asked why, he told her: “This is very bad - you should go to another school.” When she asked him why it was that bad, he said: “Seriously, this is very bad. Go to another school. Why are you here?” My point is that the student in question did work, she spent hours doing it, she learnt the programmes she had to learn to do the project. Perhaps the design was bad, perhaps the sketches were bad, perhaps the concept was bad, but the question is: whose fault is it? Is the student’s fault and perhaps she should not have been there? Is it the teacher’s fault? Perhaps he did not explain things properly, he did not tell her that she had to work more than the others because she did not yet have the skills. Or is it possibly the fault of her parents, who told her that she had such high grades that she should go and become an architect, because it is a good profession. I believe that talent is something that you get through hard work, you do not always have it from the beginning, you need to work to find it, to make it. Some students just do not have it from the beginning: they need more hours, more time to acquire it. My question is therefore: whose fault is it that the story I recounted happened.

Jean Loup Castagne, France

Exactly! It of course depends. At the beginning of your account, you said that some teachers were good, while others were not so great. That is your opinion. If I asked someone else, the list of teachers might be a little different. Sometimes, everyone agrees that a certain teacher is great and everybody, every single student loves him or her. But it is a personal feeling. Sometimes we have a teacher who has a strange way of teaching studio; he does not teach architecture, he asks students to think about the concept, so drawings and such like do not matter, everything is about the concept. He wants artistic representation of the concept, meaning the heart of the thing, the meaning of the building. Many students do not like this, because they do not know where to go. But some students really love him and think it is a great way to proceed because it fits their habits and their way of thinking. As for the second part about whose fault it is, I do not want to be a judge, but I was a teacher before and as a teacher I would not use that sort of vocabulary to a student. Yet maybe the teacher was hoping to give some sort of electric shock to that student, to say: do you realise that what you are presenting to me today does not match my expectation as a teacher? Perhaps, if that student were with another teacher, it would be a little different because that teacher would have recognised a few things. Maybe the particular teacher in the example did not recognise anything in the student’s work. Maybe it was a problem of non-verbal communication: he did not see what she was trying to explain, even through communication, verbal or non-verbal. So just to be sure the student realised how far she was from his expectation, the teacher said something quite terrible. The only fault I think there is, is that as a human being, as a teacher, as a student, we must forget that we are not judging the person, we are judging the work of the person and that is a shift which means that I would probably have a word with the teacher in this case, just reminding him not to judge the person, but the work.
**Pierre von Meiss, Switzerland**

That is probably where you are right: that he had to answer the question why the project was so bad. That is something he is supposed to do; as a teacher, he has to answer that question. He can say it is bad because of a number of reasons but he cannot just escape the why by simply saying,"It is bad, go to another school!". That is not helping; it is not doing his job, it is getting into the personal and the psychological side of someone. I remember we had a teacher who said to a student:"This project tells me that you are lazy." Is this really teaching?

**Jim Low, UK**

Was that within a crit, that exchange between the tutor and the student? What I meant was that was intimidation, which is one of the things that comes out in the research. That is the caution about the studio and the crit, that there can be intimidation of students, particularly of women students. It can be a sort of stage, particularly for older males, let me say it. It is very easy to put students down and I hope that this is one of the things that is changing within architectural education, where we are moving away from this crit and the stage within the studio and the crit and we are moving towards a review. Quite honestly, if the teacher felt that, the way to have done it was to have seen the student privately and to have exchanged opinions, not in front of the peers.

**Jean Loup Castagne, France**

I hope that we answered the question.

**Kostas Moraitis, Greece**

But what has been presented as a problem with teaching, as in the example of"your work says you are lazy", just presents the problem of transforming a non-verbal communication into verbal communication and this is the central problem when teaching architecture. It is the same as teaching dancing or violin playing or of teaching art. Of course, in our tradition, the professor has to speak and has to explain by speaking. In the Oriental tradition for example, if the student of Zen does not manage to arrive at satori, the teacher cuts his finger with a knife and then the satori comes. We believe in another way of thinking; we use verbal communication. The problem discussed by Kostas Terzidis yesterday was the problem of transforming verbal quantification to non-verbal quantification. It is only now that I understand what Kostas Terzidis was trying to do, which is a very important thing. But the central problem of design studios is that of transforming non-verbal communication into verbal communication. Quite probably, the professor of the young female student did not manage to control his feelings and simply said:"you are very bad", rather than saying that the project was very bad for the following reasons. But the central problem we are discussing is the contradiction between verbal communication and non-verbal communication. This is what I believe.
Pierre von Meiss, Switzerland

But from your experience as a teacher and as I hear, a good teacher, is it not the case that in order to teach even architecture, or the violin, you have to be able to formulate it in words? You must evaluate it in words, to tell the student what to do. The other way is that you play the violin yourself in front of the student, but I do not think that is necessarily better because that leads to imitation. The verbal critique then has the advantage of a certain margin of interpretation.

Kostas Moraitis, Greece

With a good designer, a person has to be a good speaker at the same time. The problem is if you look at it from the other side: a good speaker that can explain everything but who cannot design anything!

Jean Loup Castagne, France

I do know a few people who are very good at verbal communication, so good that they can sell you anything, even bad design. Some are students and some are teachers. The other point I want to focus on is that sometimes students are evaluated in Lyon only on the projects. They are not even in the same room! They go out and the teachers judge the projects. Students hate this because they want to be able to explain a few things that the teachers do not understand; they want to be able to defend the project. Possibly it is through lack of work that something is not clear enough in the presentation, but the thing is that the teachers often say to me that is the way things are in real life: there is your project and if it is rubbish, you fail and there is only one winner. One of the teachers teaches a group of thirty. There are thirty projects on the wall. He chooses this one, this one and this one and says, the rest are no good! That is it. It is a game, an experience. The bad thing is that when it turns into a grade, it is terrible. For school is not real life: it is the place where students have the right to make mistakes and to learn from their mistakes. The only time they cannot really make mistakes is in the final test. They should be guided towards that test and frankly, if the student wants to take the test, it is up to him to know whether he is able to succeed or not. He has to receive some guidance, however, about his level before going in for the test, so as to avoid that kind of crash.

Denise Pinheiro, Brazil

I think that perhaps one of the problems is that of communication and of a bad way to say things. Another problem I think is that - at least from the experience we have in my school - sometimes teachers say a certain project is good or bad and their evaluation criteria are not clear as to why one project is good and why another is bad. Obviously, the way the teacher in this example behaved hides the problem of the criteria because he was so abrupt on this matter. The question is how we can evaluate projects.

Jean Loup Castagne, France

Not being an architect, I ask myself exactly the same question. The teacher accompanies the student for three or four months and then at the end, there is a bad project. How is that pos-
Session 3 Learning Quality and Teaching Methods

sible? I tried to discover the answer to this. The answer I found is that our teachers say that every solution is acceptable, that there is no one single solution. This is not true; the student must forget about that. Some teachers want students to find a solution, which that particular teacher has in mind. This applies to some teachers, not all of them. It is then up to the student to figure out whether the teacher is telling the truth when he is talking to the student about there being no single solution.

The large majority of teachers evaluate projects on two levels. On the first level they ask whether it answers the programme, if it works. Does the solution, provided by the student, work or does it not work? This is a subjective point of view and there are some arguments between student and teacher about this. This is because the teacher does not think it will work while the student obviously thinks it does. The second level is being able to justify the choices made. I think that when you combine those two aspects, I think it is possible to get a rough idea of why a project might be bad or not. The other problem, which we face in France - I do not know if this actually works - is that teachers tend not to evaluate a project but to compare projects with one another. They classify the projects from the best to the worst. I think this is a strange way. If you define objectives, a project may achieve different objectives and have the same grade, being equal, not because they are the same project but because they have met the same objectives or different objectives; yet at the same time, they are equal, there is no one project better than the other. Obviously, when you are in professional life, there is only one winner.

Geoffrey Makstutis, UK

I think part of the problem that we are facing here is that we are talking about evaluating the project as opposed to evaluating the student’s learning. The project is a vehicle by which we seek to find out what the student has learned. It is one of many potential ways in which we can access the student’s learning. If we continue to talk about evaluating the project, we are talking about evaluating an end product, which is not the student’s learning. The student’s learning is a journey, the project is something which they present at the end. Regarding the issue with a student being told: “This is rubbish, you should go to another school”, I would come back and ask why the student got to that point in the first place! Who was working with that student to help her understand that learning journey? If we therefore move away from the idea that the project is what is being evaluated and move to a position of asking what the student has learned, then we might be able to have a more meaningful discussion amongst ourselves and with the student.

Johan De Walsche, Belgium

I do think that the project can actually serve to evaluate the process. There is a new recent publication called Imperfect Cities on architectural judgement. The argument is that you have different sets of criteria to use. Depending on what you see, you automatically change to another set of criteria. It is often implicit. It means that the project determines the kind of judgement you will make in an implicit way. That is my first point: that it can serve both. Another point is that, from observations of evaluations, I think that the best students are those who are able to show the criteria that they have developed during their design so they make
the jury speak about what is relevant for them. They can go beyond the criteria that were set in the beginning and the jury will appreciate this and they will have a very good jury. What is the saddest thing is when the jury does not understand the student's point, even if he has made them. For this reason, I think you need the right, appropriate peers that understand what a student is doing. I think then that it is very similar to the art of appreciation and the art of interpretation, which is related to connoisseurship and very implicit things that we develop in a very tacit way. I think it is an explanation why very often the appreciation is common, although you are not able to be very precise about criteria.

Maria Voyatzaki, Greece

I think, hearing the discussion, there are many things which spring to mind. I think that the evaluation and the appreciation - I like the word Johann used, appreciation is much more important than evaluation - is a learning process as much as the teaching and learning process itself. The feedback you give to a student is crucial. I would rush to say to Maria that probably the person who gave her this feedback is unprofessional, he is not constructive, that he is not helping in any sense and I would identify much less with Jean Loup about the teacher trying to shake the student in order to motivate her in any way. I consider it an unacceptable way to treat a youngster who is trying to do something in her life. This is however a psychological issue we can leave aside. I think the way we look at the work of a student is dependent on where we come from, and on what our profile and our priorities are. If we go into a school with a designer's hat on, then we are looking at the project and we judge it upon professional criteria in the sense of practice criteria. We are looking at it to see if it works, whether it is aesthetically pleasing and so forth.

The way we perceive architecture and the qualities of a project is the framework upon which we judge a student's project. If you are a confirmed educator - irrespective of your actual profession, whether you come from a practice background, or a research background, whatever background you have - if you are an educational professional, you look at the process, the journey of learning which was just mentioned, and you evaluate or take into account the entire relationship you have had with a student throughout the development of the project. When you give feedback to the student, I feel you somehow have to simulate what the content of a reference letter would be that you would give this student to get a job, or to get a place at another university after that student graduates from yours.

I remember when I taught in England, there is a sort of set of the same phrases that are added to a reference, depending on the level of the student. One of the most useful lines I found was that the student uses instructions or tutor advice constructively. I think it is very important to develop a relationship; the way you look at a project is how you create or develop good listeners, how you exchange ideas and how you become a good listener as well. Possibly the tutor that Maria is talking about was a dismissive person altogether because of reasons of arrogance. There could be a whole pile of stuff behind the relationship between the student and the tutor. The most important thing that I am trying to put across is that you have to look at the entire process, even the interpersonal relationship that has developed, which is to do with respect, with trust and this has to be mutual.
Susanne Komossa, Netherlands

If you look at schools, and ways of teaching, studio teaching and design teaching, I think generally you can make a difference between process-orientated and object-product-orientated. That is of course a position in architecture. I am from Delft; we do not know what good architecture is, so in the end the public has to decide on that but we can teach students the process. In that sense, the process is more than a didactic tool. This is because we can assume that the process the student has to learn to handle and all the means that can be used to achieve something within that process are exactly the same as a practising architect should use, at least. Usually, of course, famous architects do not tell you their process. Sometimes they do, although rarely, but they usually show only their product and then the product is judged. Yet ultimately, the product came into being by a process of collaboration.

We assess and evaluate graduate students by developing their project and following the process; they take a position and every step can be questioned. We do this by questioning them constantly: what do you want here, what do you want to achieve, what are the means, do you really think you will need it? By asking over and over again, you could reach a student who says, 'I want to make inhuman architecture' and then you can discuss that, there is a point to discuss: how can we make this type of architecture? But in all these discussions, the product is not the thing; it is the consistency of the argument and how the design reflects the argument. I feel, for example, in your practice and experience, there are still people who know what good architecture is.

Jean Loup Castsgne, France

But that is in Lyon, nowhere else in the world! This reminds me of something I built with an art teacher. For one semester, each student’s project was about art. That particular teacher was interested in competency approach, not the English version of competency, which is an immeasurable thing, but competency like being able to design an artistic object with plasticity and so forth, using an adequate form of communication. There was a third competency that was using relevant reference in the domain of art. That was fairly easy to measure.

Regarding the second one, however, how does one measure those things? It was difficult, so we defined it in three capacities that we could measure. We then had a mid-term evaluation, with those criteria - and that is the important thing, those criteria were defined at the beginning and communicated to the students. Mid-term, the teachers did the evaluation and they sent back information to the students, saying which level they had achieved for which competency and students got information about how teachers saw them and had to compare that with how they saw themselves.

Then came the final exposition. There was a grand jury and the teacher said it was going to be too complicated to evaluate with competencies, what else could be suggested? I suggested they do as they always did: classify which was the best and that best was to be worth seventeen, or fifteen, or nineteen, whichever figure was chosen. Then we could evaluate the competencies just as was done at mid-term alone, without a jury. She argued that it was never going to work, the students were going to hate it. I told her not to worry, just to do the jury, do the artistic exhibition and make the proclamation and the students would get their grades. Then I met her and she did the evaluation based on competency and then I tricked her. I said no,
those students who get all competencies as good or very good, what are the grades, and they were the best grades. The weaker ones get the lower grades. It was consistent; I explained to her that she was measuring two different things, but what is the expression of the process? Now you will give the grades that would have been given by the jury and the explanation will be the feedback on the competence. There were absolutely no comments, not even students who failed the test came to complain! This never happens in France!

Pierre von Meiss, Switzerland
This is because you were able to explain the reasoning behind the marks.

Jean Loup Castagne, France
Exactly.

Nicolau Brandao, Portugal
There are two remarks I would like to make about this question of teaching projects. First of all, we haven’t yet spoken about what level we are talking about. This means teaching project in the first year is one thing; in the last year and the final project it is something else. This is because I also think that to make a project, even in the last year, is not only a matter of appreciation or evaluation, as a project is a subject where a student introduces everything he has learned. I still think that if you have to learn while doing it, then the project is still a process. In the first years, the process is much more important than the final result. In the end, it is just like a graphic, the process is less important than the final result. Finally, in the arena of professional activity, what matters is the final building, which has been constructed. The process of the project is not that important. In my opinion, the teacher therefore has to communicate with the student at these different levels. In the first year, it is one way, and in the other years, evaluation is done on a different level, with the teacher finding different ways of communicating it.

Jean Loup Castagne, France
I totally agree that it is different in the first year and then say, the fifth year. I think the difference is in the level of exigency; the general objectives are however the same: what kind of architecture is your school producing? How does the teacher in the first year help to build in small pieces the big puzzle of being an architect with the specification values that are in your school? Different schools have different approaches. Your student is not the same as a student at another school.

Nicolau Brandao, Portugal
I totally agree with you. What I mean is that even the self-criticism of the student that he or she does at each level is increasingly accurate. That is why something is changing. Another point that we should mention is that students are quite different from each other, even the same student through the years will change in two or three years. The way we communicate with him, therefore, could even be to provoke him, to say this is bad and that will be enough
to make him go home and think about it. Sometimes this is the best way to engage a student’s interest or to make him feel something.

**Jean Loup Castagne**, France

I would just like to be very clear on one point. Research does not support this theory at all. You gain more from a student by helping him instead of by putting him in a difficult situation. Thousands of experiments have shown that being aggressive towards a student, you get less than by being kind to him. It does not mean treating him like a convalescent, or being complacent. By being honest, polite and constructive, you will get ten times more than by simply saying, this is bad, you should go to another school or study something else. I just wanted to be absolutely clear on that point: it is not an effective method.

**Nicolau Brandao**, Portugal

I am not defending this particular method, but sometimes, on certain occasions, certain teachers - I am not including myself in this - do this and sometimes they get results. This should be said.

**Herman Neuckermans**, Belgium

I have remarked several things, which have been said and I will indeed be very short. I would like to make a comment about the discussion of the issue of non-verbal communication, which for me is only one side of the coin. The more fundamental aspect of the non-verbal aspect of our behaviour is the designer’s way of thinking, as it has been called by Nigel Cross. This means the designer works and thinks in and with images. Non-verbal is of course the consequence of that. I obviously agree with what you said that in explaining the images, you need verbal communication. This is one thing. So the graphicity, as Cross calls it, is really the core of the way we think as architects. The second point is that it happens I was the dean of the school and we have hired tens of practitioners over the years. Those who said, “this is bad, this is good”, even if the judgement was correct, these people were fired. We did some research on the behaviour of teachers, which is very difficult to do, because we did video recordings of tutoring sessions and some of the teachers were very reluctant to do this. It was however very revealing and it connects to the point that Pierre suggested that you can do research on pedagogy in architecture. That is what I wanted to say.

**Maria Voyatzaki**, Greece

Students should use their interpersonal relationship with their tutors and if it is non-existent to find the guts – when they get criticism which is only intimidating to tell them that they are not good either. Aggressive and impolite as this may sound it is as aggressive and impolite as the tutors intimidating commentary; after all our students are the only ones that can give us feedback on our teaching qualities.
The quality of learning is strongly influenced by the profile of the student cohort in a school of architecture.

Which are the most significant characteristics of the profile of the student cohort to be recruited in a school of architecture nowadays?

Secondary education plays a significant role in the structure of the profile of the students recruited in higher education.

On the assumption that there could be communication channels between schools of architecture and secondary education what could the former ask the latter in order to assure a number of competences, skills and knowledge that could have a positive impact on the quality of learning in an architectural education environment?

How can we formulate this claim?

Are there any existing mechanisms towards such a collaboration perspective?

How can we detect the expected competences in the recruitment process?

Are there good practices, tested tools and successfully implemented processes?
Session 4 Learning quality and students’ recruitment

Chair:
Hansjoerg Hilti, Vaduz, Liechtenstein

Introductory panel:
Helene Bangert, Muenster, Germany
Lucke Butcher, Manchester, United Kingdom
Carrie Bayley, Manchester, United Kingdom
Maria Anagnostou, Thessaloniki, Greece
Kyriaki Gavogianni, Thessaloniki, Greece
Christianna Tsingou, Thessaloniki, Greece
Introduction by Hansjoerg Hilti, chair

"The quality of learning in a school of architecture is strongly influenced by the profile of the student's cohort."

"Characteristics of architecture students?"

"...can a secondary education provide a number of skills and knowledge for the future of architectural education?"

"Do we have examples of good practices, tested tools...?"

Most architecture schools have incoming students with a wide variety of secondary educational backgrounds. The question is, should or could architectural schools influence secondary education for improving skills for the future of architectural education? This question has been raised on many levels.

As members of society who live and work in a built environment, it is not unthinkable, that more architectural knowledge could be introduced in secondary education. At the same time, we have to admit, if all academic disciplines would ask for the same, secondary education would be overextended.

Architectural knowledge within universities can be brought into secondary education where the architectural faculties could provide insights and experiences for secondary students. It will allow the incoming cohort of students to have an idea of what architectural education is all about.

To my understanding there are other schools which offer practical experiences, research projects and testing tools. In Austria, for example, they offer a degree combined with architectural education as well as some secondary schools with courses about the built environment.

In our university in Liechtenstein we have positively experienced a "children's university" for 8 to 12 year olds and "trial lessons" or workshops for high school students. I am not aware of any other practices available.

The topic mentioned above has not been discussed by the student panel at all. The students from UK, Greece and Germany exposed their activities and experiences and their mental state within the universities.

That leads us to question what is essential in and for an architectural education. The student panels have shown us the student point of view.

What the students are asking for are participation, partnership and more individual treatment.

Helene Bangert informed us about the outstanding example of student participation in Muenster. There are two Vice-Deans in the school and Helene is one of them even though she is a student. This niche allows students to be represented within architectural faculty from someone who is just like them.

The example from Manchester shows an exceptional engagement of student groups in the university life.
The students from Thessaloniki have emotionally stated their need for this kind of personal partnerships.

My interpretation about the comments from student representatives are that students want to be treated as adults and as partners.

The majority of universities have a very strong hierarchy. The distance between students and the teaching staff is enormous. If we compare the leading companies of the digital revolution (age average 20 to 30 years and lower competitive hierarchy) with most of our institutions we should be alarmed and react.

The students from Greece revealed very clearly that the essence of learning has to do with personal contacts, relationships and experiences.

To my understanding the following story from Louis Khan should be considered when we wish to shape the architectural education for the future.

"School started when a man, sitting under a tree was talking about his experiences, not knowing that he was a teacher, and a group of people were listening, not knowing that they are students."
Field report – student participation students in the administration at the msa | muenster school of architecture

Background

Having been founded over a century ago, and with a recognised high standard of education, in 2000 the msa was the first university in Germany to introduce a Bachelor / Master degree programme according to UIA / UNESCO standards.

The five-year consecutive Bachelor / Master structure built upon the previously successful teaching programme, which for its part already had European recognition, and was devised in accordance to the EU Directive 2005/36/EG for the Recognition of Professional Qualifications, and of the council for the recognition of professional qualifications.

In 2010 the msa was one of the first architecture faculties in Germany, which achieved the Notification of the Master Degrees in the Countries of the European Union and has a pioneering role for other architecture schools. Basically it is crucial for the quality and the uniqueness of the education system at the msa, that the practical relevance is deeply integrated in the teaching. Still it is always a question of how to involve things.

Starting with interactive studying and a kind of learning-by-doing experience the students can learn to solve problems and questions by giving things a try with different installations and experiments. This is completed with a great input from the professors who each of them are still working in practise or have their own office. Practical experience in maximum can surely only be taught by building a house from step A to Z. This is where the involvement of practise in the studies gets difficult – but not impossible. For several times students of the msa have had the possibility to realize a whole project. For example the library for architecture, design and art faculties on the msa-campus is a project run by students conducted by a professor and his office. Students have experienced the complete realisation process from outer design and conception over to inner design, management and calculation.

Another example is the pavilion for an exhibition in front of Muenster’s cathedral in cooperation with the state museum. Again students under the direction of an office of two alumni students could get experiences that they normally only get far after their studies.

Education

Over the years of the Bachelor studies students get a founded basis for design and arts. It can be said that the msa focuses on the creative and design part of architectural education. Unique to the school is a programme of impromptu design workshops that forms the first phase of the Master studies. These design seminars, situated in architecture schools abroad and in Germany, are an incomparable offering for students at the msa. The designs take place within 4 weeks. The students study three or four workshops in the course of their first master semester. Most important for the youngest Master-Semesters is to find their own position in the architecture
landscape. The students learn to decide fastly by changing the teacher and context in a short while and for several times. Students are deeply integrated in this programme by organising the whole process of travel, contact to the other universities and so on. This is a small part of the students participation system.

**Student participation system**

The participation model of students in all areas of university life is exemplary in the German higher education landscape. The student body sees itself as a part of "muenster school of architecture" and is consciously and responsibly involved in organising the msa. Thanks to active student involvement in important tasks and faculty policy decisions, participation represents a significant element of the msa.

**Student tutorship**

The special commitment of students in this participation model means, that they have a strong identification with their studies. Mid-level faculty does not exist at the msa, and are replaced by the tried and tested tutor system. As tutors in the faculty team, around 60 advanced students are directly involved in organising teaching. The relationship between lecturers and students is significantly characterised by this close cooperation. Thanks to this model, students are given the opportunity to experience social responsibility and critical debate, paired with the corresponding skills, to prepare them for working as an architect.

The departments of the faculty in which they work represent the different thematic teaching units of the msa. The seven departments are subdivided into the single chairs of each professor and his tutors. In addition to the chairs, there are infrastructural units like the photo workshop or the digital laboratory, a small café, plot service and the print workshop which are independently run by tutors.

**Student as Vice Dean**

As it is the particularity of the msa, to involve students across of the faculty, the participation model is most clearly visible in the Dean's Office: one of the two Vice Deans is chosen from the ranks of the student body, and is involved in the responsibility of the Dean's Office on an equal footing. This is nearly unique among German universities, and perhaps also in international comparison. Since 2000 the msa is running this system and until now, the sixth student vice dean is in charge.

Weekly meetings and a close dialogue characterize the work of the Dean's office. The professors in the deanship are elected for five years, the student is elected for one year. The Faculty Council elects the Dean's Office. In this body, 5 of the 12 members with voting powers are also students. Furthermore, students of the msa are involved in various university-wide decision-making bodies and the Senate of Münster University of Applied Sciences. Concluding all the facts in this system, it has been approved as a great method of bringing the teaching body, the administration body and the students body in a face to face relation on learning and working. Still there is a clearly visible hierarchy between the authorities, but they absolutely account for each other.
Carrie Bayley and Lucke Butcher
Architecture Students Network, Manchester School of Architecture, Manchester, UK

Enhancing the Student Experience

This paper seeks to outline the role that students themselves play in enhancing the education environment at Schools of Architecture. Two examples are used to put forward this argument: i) the Manchester Student Society of Architecture (MSSA); ii) the Architecture Students Network (ASN). Presentations outlining these two case studies were presented at the 15th ENHSA in 2012 by Carrie Bayley, a representative of the MSSA, and Luke Butcher, a representative of the ASN.

Investment in Enhanced Peer Learning

The Manchester Student Society of Architecture (MSSA) is the official student group representing every student at the Manchester School of Architecture. It is run by students, for students, and works closely alongside tutors and lecturers across the Manchester School of Architecture, Manchester Metropolitan University and the University of Manchester. Its principle aim is to improve general well-being of students through both academic and social activities. This ranges from regular social events, to have fun, get to know people and to let your hair down, to pushing for even great facilities (Fig. 1). At the end of each year the society hosts an annual Summer Ball that enables students and school staff to celebrate their end of year achievements. The MSSA is also heavily involved with arranging exhibitions through out the year, including the end of year degree show which is a great opportunity to showcase students work, and guest lectures (Fig. 2). Traditionally the MSSA has been self-funded with all profits being put back into improving student life; funds are raised through social events, merchandise, and sponsorship from external companies. Today the society is supported directly by the school of architecture, with
Fig. 2
MSSA BDP Lecture.

Fig. 3
MSA Grizedale.
financial support alongside professional support, the financial support in particular makes it unusual among most other student societies at universities in the UK. The MSSA can also provide support for students and acts as a platform for all students to voice their opinions and ensure they are heard by the decision makers at the school. The MSSA is structured in a typical manner to other student societies in the UK, with a Chair, Vice-Chair and Treasurer.

It takes a certain student, with a certain passion, to take part in activities beyond the remit of the necessary components of their degree. However often the things accomplished through that extra-curricular involvement add to the quality of the student experience as a whole. Increasingly the MSSA has found that students who are more actively involved in the extra-curricular activities at Manchester are better able to distinguish themselves from their less involved peers in a tough climate for employment. What it is important to emphasise in this context is the importance of the role of the staff and the school of architecture play in supporting students to make their participation in extra curricular activities more effective. If not properly supported or encouraged the MSSA has found that students find it difficult to go beyond the roles typically associated with a student society and as such the impact of the student society on enhancing the all around quality of the learning environment, for both students and staff, is significantly lessened.

In response to the work of the student society in Manchester, the school has collaborated with students to recruit and pay a selection of the cohort to run sections of the student society – student ‘Coordinators’. The MSSA believes this to be a unique offering on the part of the architecture school in the context of the UK. This financial support has ensured the societies longevity beyond the typical cycle that dominates student societies wherein a single active student drives a society and when that student leaves the society ‘dies’ until a similarly active student attends the school. Furthermore this financial support has freed students involved with the MSSA from the time-consuming activities of seeking sponsorship, shifting a greater focus on improving the societies quality and strengthen the discourse between the society, the students and the school. These student ‘Coordinators’ assist the committee members of the student society, undertaking activities linked to social, academic and communication secretary roles—designing posters, sending emails, maintaining an online presence. They also staff an office within the school that ensures a physical presence for the society where things can also be sold to help fund the societies other activities. In paying students, the school also recognises and reflects the importance of the role that students play in shaping their educational environments.

These ‘Coordinators’ are an extension of an existing programme wherein students from the Masters programmes are recruited as paid teaching assistants to complement teaching in the undergraduate programmes. This facilitates the passing on of knowledge and for students to make a valid contribution to the learning of others, something which aids their own education in return. Teaching assistants are given brief objectives, or a brief structure, from which they shape their own methods of delivery. Ultimately what is taught are the basic skills that are needed for the studio environment from drawing, modelling, software etc, freeing up valuable time in the studio with the tutor. I would also say that in a sense the student is better placed to impart this knowledge because unlike the tutor they are equipped with the most recent skills necessary to complete a course in architecture as they are applying it to their own work. The framework therefore allows for the most relevant skills to be passed to/from the current generation as methods progress and allow for investment of these skills directly back into the
school and its knowledge base. In addition it fosters relationships between those undertaking under/post graduate degrees and also provides an opportunity, like with the MSSA roles, for students to earn during their studies in a way that is related to their chosen industry. Arguably because the students are being paid there is a higher level of responsibility, trust, and an obligation being placed on them to deliver greater quality than if they were simply volunteering their own time for free.

An additional opportunity for enhanced peer to peer learning comes in the form of three week events based workshops prepared by 5th Year MArch students who create and deliver outward facing workshops and events to first and second year architecture and landscape architecture students across the two BA courses (Fig. 3). These workshops engage with public space and the city. These are fully integrated into both curriculums and form a crucial platform for students across years to collaborate and to some extents direct their own learning. It strengthens ties between the different years whilst also inspiring and introducing new ideas, design methodologies and communication skills.

Further afield the Manchester school of architecture participates in various events such as workshops with other schools to projects with other communities further enhancing the quality of learning in environments outside of the studio. For example students participate in the Caribbean Winter School Programme organised by Muenster and every post-graduate unit is now encouraged to have a partner institution in a European country with whom they can engage in workshops and exchange ideas. An example of this is the recent live project in which students collaborated with Atelier One and students from Paris to deliver a contribution to the canal festival in Manchester. There is also a post-graduate studio unit dedicated to live projects—MSA-P. Collaborations and links with practice, such as the Atelier One project, are further enhanced by associations between the MSSA, the Manchester School of Architecture and the Manchester Society of Architects which provides a platform for students, staff and practitioners respectively.
to have both formal and informal discourse (Fig. 4). This discourse culminates in a number of events such as the Manchester Architecture and Design Festival, key lectures and other informal social occasions that facilitate networking.

Beyond these city wide networks students are given the support to engage at national and international levels. What is important though is that students can initiate these projects—schools should provide a framework to set in motion and support these activities—without feeling they (the students) are being obliged to do it. One such more tangible framework that is being developed in this case is the Architecture Students Network which allows students of different universities to come together. The following section will discuss the role of the Architecture Students Network in more detail.

**Agenda-based Student Networks**

In 1981 students from all across Europe met at Liverpool University, every year since then approximately 400 students from every part of Europe have come together for two intense weeks of workshops, lectures, exhibitions and the exchange of ideas and culture. This event, which went on to known as the European Architecture Students Assembly (EASA), has since been held in ambitious and inspirational situations including a train travelling across Scandinavia, a renovated WWII destroyer moored to the banks of the Danube and even, in 1988, behind the Berlin Wall in communist East Berlin. In 2010 EASA took place in the UK for the first time since the first meeting in 1981, taking place in Manchester with support from the Manchester School of Architecture (Fig. 5). Furthermore the same students who were involved with the Manchester Student Society of Architecture became involved with the organisation and running of the EASA event (Fig. 6).
EASA is unique and is arguably the only organization of its kind in Europe. Primarily it is a network of student run by students for students. In contrast to more 'conventional' student societies, including to an extent the MSSA, EASA has no central organisation or board. There are over 40 countries that cover the whole of the continents student population, each country having two 'National Contacts,' whose role is to spread the word of the network within their country and be the link between individual students and other countries in the network. Typically National Contacts come together once year to discuss any topics and choose the venue for the following EASA. The most striking feature of these meetings is there is never a vote on any decision; rather all decisions are reached by consensus of all present.

It is in the spirit of EASA, and as part of the legacy from the Manchester event, that students involved with the MSSA set about establishing a new viable network to promote communication between students across all UK schools – the Architecture Students Network.

Whilst the ASN was being formulated a number of separate events were being organised across the country to highlight the growing disquiet amongst architecture students about architectural education in the UK. One of the first events was the Pavilion of Change organised by ZAP, an exhibition exploring the costs of an architectural education and the hardship that some students endure (Fig. 7). The even also succeeded in showcasing the enormous ability that exists in UK schools of architecture. Other events included the RIBA’s Tough Times Forum held in the summer of 2011 and the Polyark events. The next main event, in November 2011, was the ‘Charter for Change’ organised by the What Now? Collaborative and ZAP. The Charter aimed “…to instigate an immediate reflection on the current situation for students, which is evidently flawed, both financially and academically. The Charter forms a record of ideas for change and sought to ignite a ‘call to arms’ for those who talk a lot and act a little. This Charter is devoid of institutional pressures or politics, created by those affected, for those affected. It carries a wealth of integrity as it evolves directly from the demographic for whom it serves. The Charter For Change was more than a discussion to be shelved.”
Whilst the intentions behind these events are to be applauded, and recognising that they were all successful in their own rights, what they served to highlight was the disjointed nature of architecture student societies in the UK and the lack of a collective ‘voice’ amongst students.

The previous “student organisation in the UK” that had sought to bring together disparate groups of architecture students, Archaos, had begun to “die a slow death” and was in desperate need of renewal or being replaced altogether. Archaos has in fact been a victim of what affects all student societies in the UK, it had once been run by a highly motivated and engaged group of students however no students came forward to replace them once they had graduated and moved on to professional practice. However, Archaos was successful with proposals to introduce recommended minimum conditions of employment and indicative rates of pay for Part 1 (Year Out) students. In reality though once Archaos had achieved one of its original aims (minimum conditions of employment and indicative rates of pay), few students had heard of or knew what Archaos was.

It is within this context that the ASN came into being, officially replacing Archaos as the official student group representing architecture students in the UK and taking up the various positions previously held on committees organised by groups including the RIBA and ARB (Fig. 9). The ASN now works with The Standing Conference of Heads of Schools of Architecture (SCHOSA) in raising student issues and sits on the RIBA Architects for Change Committee, promoting Equality and Diversity in the profession, and RIBA Education Trust Funds Committee.

Despite now being involved with other groups and organisations the ASN set out to be an independent network of students from Schools of Architecture within the UK. First and foremost the ASN is a communication network that will support and promote architecture student events, have the capacity to harness student opinion and to engage with other established, relevant, education organisations, both nationally and internationally.
**Fig. 9**
The ASN on the AJ Homepage.

**Fig. 10**
The ASN.

**Fig. 11**
ASN Maps.
The following objectives were discussed at initial working group meetings:

- A student-led organisation.
- Providing students with a voice on national and international platforms.
- Independent.
- Agenda based.
- Enabling.
- Based on trust.
- A cellular structure that is both simple and durable in organisation and management.
- An annual conference supported by working groups.
- Gathering opinion and synthesising it.
- A communication facilitating action.

The intention is that these objectives would be reviewed on an annual basis so that the ASN is representative of current students and current issues affecting students (Fig. 10).

Taking a lead from the structure of EASA, ideally to facilitate these objectives there are 2-3 representatives from each school of architecture in the UK. To date representatives have attended from Manchester, Westminster, Portsmouth, Sheffield, Birmingham, Bournemouth, Queens Belfast, Greenwich, and Oxford Brookes. To help generate contacts support was provided by the SCHOSA. A series of ‘host schools’ are then tasked with organising working groups to discuss issues and an annual conference brings together the representatives, allowing them to meet face to face. The Manchester School of Architecture and the Manchester Student Society of Architecture has committed to funding a position to support the ASN, through the existing TA or ‘Coordinator’ system, providing a permanent ‘secretary’ or point of contact to manage the network.

As the ASN continues to develop it is hoped that the network will continue to grow until every school of architecture in the UK is represented so that it can accurately represent the views of students (Fig. 11).

**Summary**

Mechanisms such as the MSSA and ASN allow students to take a greater level of ownership over their education. Being involved in actively shaping networks, relationships and other collaborations are basic skills that are not only needed to develop a fruitful architectural career, but are key to wider life skills. It is important that all schools of architecture, across Europe, question the role they play in enabling students to take a more active role in their education.
“Growing a Tree” - ArchiTeam

Introduction

ArchiTeam is a group of young architects, who have joined together envisaging the promotion and spread of Architecture. ArchiTeam was originally formed in 2008, during a trip, giving the traveling group a new character and identity.

The principal aim of ArchiTeam is to gather information and experiences through traveling in order to create an electronic Architectural City Guide.

ArchiTeam is continuously expanding, now it consists of a large group of architects and architecture students envisioning the advance of Architecture worldwide.

All started in 2002, when two students of architecture at the Aristotle University of Thessaloniki decided to plan an architectural trip abroad having the opportunity to visit new places and, most importantly, to see buildings of architectural interest. There was always the query why those in charge of funding educational excursions of such kind for students of architecture remained inactive, and the truth is, that after extensive research, no one managed to find out.
There are times when someone can have a bright idea and the responsibility to do what seems obvious and mainly what seems important to them. And that is what these students decided to do to satisfy their need for further knowledge and experience in the field of architecture. They organized the first "architectural trip" in Berlin; without any special help, away from organized partisan interests and with partial ignorance of the risks. The result was more than satisfactory; a sufficient number of architecture students joined them and visited Berlin following a “handmade” program, giving special emphasis on modern architecture.

The whole process (at that time, the Internet was still primitive compared to the incredible amount of information available today) was mainly educational; research for maps, bibliography for the search of modern buildings, analysis of their architecture, prioritization and classification. The hardest thing of all was of course to organize the daily program. Because, we believe that it is a valuable experience for every architect (and not only architect) to plan such a trip on their own following this process.

On the next trips, it was of course much easier to calculate distance, transportation within each city, time spent per building (according to its size and importance) and the “time for shooting”, always bearing in mind the number of travelers, as this is probably the most important parameter. Typical of this are the scenes in Tokyo where over 80 people were walking for 10-12 hours daily on the streets trying to spot some hidden miniature buildings found on some maps that we had received from Germany and spending a lot of time to find the buildings due to unrecorded numbers of plots and the absence of English signs. Beyond architecture the experience we gained was precious.
In 2008, we continued to organize architectural trips to new places. During our stay in Brazil, we had the idea of using the enormous file that had already been created, the maps with the locations of modern buildings, the routes and of course the photos. Given the almost non-existent or very few guidebooks of contemporary architecture, the idea to create an online guide to contemporary architecture used by all potential travelers around the world took shape and the ArchiTravel.com was created.

Then, through hard work, we created our team, ArchiTeam, and having as a main tool our website, ArchiTravel.Com, we are today a small group of architects and architecture students from Aristotle University of Thessaloniki and we have created a variety of web applications. Everything is about Architecture and Architectural Tourism, a term which is being looked into by our group.

We’ve been members of ArchiTeam for almost three years now, and it has been a unique opportunity for us to learn about contemporary architecture, appreciate it, collect information about it and then deliver that information so that those interested can see it and benefit from it. We do believe that our websites are an essential architectural tool for every architect, especially for students like us who long for knowledge and experience in their field.

One of our activities is our ArchiPaper website. We all know that things are changing rapidly nowadays; so we should be well informed so as to inform others about these changes. It’s not just a page to announce award winners. We consider it more like an architectural newspaper that everyone can read, being an architect or not, and be aware of what’s going on in the world today, in terms of architecture. We always have to be on the lookout for new groundbreaking architectural achievements and that keeps us alert. Architecture is taking big steps towards the future and we are trying to keep up with them.
Then, there’s ArchiTravel, the very first of our projects. ArchiTravel has enriched our knowledge in so many ways. We are constantly searching for new buildings and are always up-to-date. We are able to get information on all the significant contemporary buildings and transfer that information to the site so that fellow architecture students and architects have access to; look-
ing at so many pictures, reading so many texts and analyzing all that, has certainly helped us acquire a new perspective on life. The fresh ideas that come to mind during the brainstorming at the beginning of a project are for sure the outcome of the work we do in ArchiTravel. It’s more than just flicking through an architectural magazine. And of course, ArchiTravel provides us with all the information we need to visit all these buildings. That’s what is truly amazing. With the exact address, location on the map and specific directions (whenever that is possible) anyone can find their way.

With the help of ArchiCalendar we’re always informed on what’s going on in the world when it comes to architectural events. Apart from learning about events that take place in Greece and the fact that the site provides us with all the necessary information to participate in them, it is a way to learn about festivals, lectures, workshops and exhibitions that take place anywhere in the world.

The segment of Point of View is one of our personal favorites. It is a unique opportunity for us to learn about the things that trouble us in architecture from distinguished personalities in the field; all this time we’ve met and conversed with architects, journalists, photographers, artists and many others. All these conversations have taken the form of interviews which are published in the Point of View website so that others can watch and read what these people told us. We value their opinion and we have unforgettable experiences, special talks and personal contacts with the people who form our character everyday.

Finally, there is the project of Destinations, the trips that we organize as a group. On our last trip to China we got to visit the traditional architecture of Beijing as well as modern Shanghai and the 2010 EXPO. At first, we thought it would be difficult for so many people to move around the city, visit all the sites and at the end of the day have time to admire the contem-
porary architecture that China has to offer. By the time we landed in Beijing, all of our fears disappeared. We all had so much energy, we were all so keen to discover this new land and at the same time visit all those skyscrapers and museums and modern housing complexes that we had read about in architectural magazines. Also, visiting the world EXPO was a big deal; we got to know each other better and made new friends, we had fun, we learned a lot and broadened our horizons.

All in all, we have to say that ArchiTeam is a group that we enjoy being part of. The other members are like a family to us and we think it’s really beautiful that our love for architecture and our love for what we do bonds us and helps us project our work to others. It is really about learning, being informed, traveling and having fun.

Studying architecture is not that easy. Except for the lessons you have to attend, you have to do a lot of research and reading to enhance the knowledge provided by our professors. And it is through personal search and especially exposure to architectural events (workshops, exhibitions, projects, lectures) which architeam offers, that you can be inspired and acquire valuable skills.

By being members of ArchiTeam, we can get all the extra information we need for the courses in a more appealing way than reading books. We search for the buildings teachers refer to and read what certain architects wrote about them. We participate in trips and get to know other cultures, traditions and lifestyles. We also have the chance to visit the outstanding architectural places of a country or a city, take pictures and write our impressions about them. We attend architectural events and interview well-known artists, architects and people dealing with architecture in every way.
All these activities are really useful for our studies and supplement them. By visiting new places and interacting with eminent architects and people who share the same interests with us we gain a profound insight into architectural issues.

We believe that our action is like “growing a tree”. A tree we planted, we looked after with love. We watered it, pruned it, we gave it sky to breathe.

ArchiTeam managed through its projects to be trusted by thousands of people, who are now friends, and to create a reference point for those who do not face architecture as a business but as a matter of life.
Debate

Hansjoerg Hilti, Liechtenstein

I would like to give people from the floor the chance to start a discussion with the members of the panel. Over the next hour and a half I would like to ask the students to tell us what they think about what they have heard over the past two or three days. Do not be polite: please tell us honestly what you think this "old man's society" is doing here!

Maria Voyatzaki, Greece

Knowing your sense of humour Hansjoerg, I do not think that you truly meant your first comment after the students' presentations saying that they have not responded to the questions we posed them. In fact, I feel they have responded very boldly by offering alternative ways of being taught. Thus I think they have answered our questions, implicitly telling us that we do not do what they are expecting us to do. I would like to challenge them and ask them to tell us where we do not do things right and what their actual expectations are, not implicitly but directly. I hear from this panel that there are many different ways of understanding this "alternative" education that they have anticipated, starting with involvement in the administrative issues. From Munster, we heard that they are even trying to influence appointments and that is very important. They also talk about taking on private, independent initiatives such as field trips, so they have been trying to tell us many things through their presentations, implicitly answering the questions posed. All that we need, therefore, is for them to air their views more openly and for us to listen to them.

Hansjoerg Hilti, Liechtenstein

I completely agree. Would one of the panel like to start the response?

Helene Bangert (student), Germany

In addition to what we have told you in our presentations, I would also like to say that the last two days have been very interesting for me to know what you are doing and thinking about in order to improve. I was very surprised to see such a wide offering of methods, both learning methods and teaching methods. One suggestion though: what often is good for students, because most of us are adults and we are no longer in school, is that it is not the method or the theory of teaching which is needed, but just giving us motivation. If I am a student and I start studying, I know what I am going to do: I know which courses I am going to choose and follow, which projects I have to do in order to get my degree, but in Munster it is the motivation we get which forms the basis of our studying. We do therefore, in fact, need a school, and the school is what makes the studying possible. What is needed though is just a little more motivation and pushing to help students do a little more work over and above their projects.
**Maria Anagnostou** (student), Greece

I would like to point out three things in regard to our point of view. The first point, which I think I made yesterday, is that the student needs to know and to feel that the professor cares and that he cares for the student in every way. The second thing is that, in order to take initiatives in a university, architecture students need to be inspired by their professors. They need to see that their professors are not only there to follow a standard programme, which they have in front of them, but that there is something more. The third thing, which we three girls from Thessaloniki believe, is that the studying experience is very important and that means the experience in every way. The simplest example is that in the five years which I have been studying, perhaps the only time I went to a building construction was in my second year with Mrs Voyatzaki. This was however the only time that I went to such a construction. This is a very basic example, which shows that we need more experience as students, including perhaps more workshops in our universities parallel to our other activities.

**Luke Butcher** (student), United Kingdom

The last three days have been interesting. It has been interesting to hear the different approaches across Europe to architectural education, hearing some things I have been familiar with from Manchester as well as hearing other things which are similar in some ways but which are different at the same time. In terms of how students view this new approach to education, as it could be called, I think it is about giving students the freedom to know that they can self-educate. As Helene was saying, students are adults and as such they can organise themselves - sometimes! They can also get things done; the motivation to do those things - there is an analogy I have heard related to the way of teaching which I think works quite well in regard to the way I have been taught over the past three or four years.

The teacher is like the shepherd: he only intervenes when you are about to run into the electric fence or do something terrible! Apart from that, though, you are left to wander freely and to make your own mistakes and your own choices. You can then grow as a person individually rather than being led down one direct path. I feel that teaching is about that guidance. It is also important for there to be a mutual respect between the tutor and the student: it is not authoritarian from the top, nor is it about the student thinking he can rule the school, it needs both parties to work together closely. In order to do that, the school has to listen to its students, as we have at Manchester. There, they give us the opportunity whereby if we have an idea, students can go to the staff and know that if the idea is well thought through and has been given sufficient consideration, it can obtain the backing of the tutors who will let us try it out. This may have been done through the student society or the student network and it has, in my opinion, potential for great change across the whole of the UK. I hope that answers the question.

**Hansjoerg Hilti**, Liechtenstein

I would like to add something that has just come into my mind. Before I came here, I tried to remember what I gained from my studies and what I really remember about them. It was a long time ago! What I remember is a friendship towards one particular professor, who was the oldest one in the school. He was an architecture historian but there was a friendship. I do not
remember his lectures any more but I remember his friendship and his personality. He was open to friendship. Something else I remember: as a student initiative, we brought a young philosopher into the school and we worked together with him. He learned that brick-laying was something tangible - for him, it had been very abstract; in turn, we learned, as brick-layers, to think with him. These were the two things that came to mind and all the rest I do not remember. There we have student experiences. Sometimes we talk about how many hours we are doing, about building physics or whether a design studio has a little bit more light, or less light, but there are other things we must think about too.

**Herman Neuckermans, Belgium**

I was completely delighted with the examples and with the initiative that the students showed and developed. Some of them already existed, especially the city trips, but nevertheless, I think that your presentations were perfect. I have one question, one that we as an association have had for years. In your opinion, what is the best way of contacting the students? I ask this because there have been many occasions when we have wanted to contact students. For example, I have in mind the MACE project which is the repository of architectural data which is available. It may be something of which you are probably unaware. It is something where the EU spent a lot of money and the EE put a lot of effort. We could not however reach the students because EASA has a yearly changing presidency or council and there is no transfer of data. I think we as an association would frequently like to have contact with students; if you can find a way to organise this, through this yearly changing presidency, it would help very much in communicating in both directions.

I have a final comment concerning what was said about choosing the subjects. You claim some sort of complete freedom in choosing what is interesting for you but you also have to agree that while Hansjoerg does not remember what he was taught, he is nonetheless here because of what he was taught. What I am saying is that if you remember the diagram - it was not shown, but explained by Donna Robertson from ACSA, concerning where the graduates end up going, I say - and this is something I have been experiencing for over forty years - students do not know what the future will be and where they will go. Sometimes, therefore, and I can give you many examples of students who, when they were students questioned why they were having to take certain courses, later on found it was what they were actually doing. There were many reasons for this: perhaps there were no other opportunities for them to do anything else or suchlike. For this reason, you have to be aware of the fact that those who make the programme for students do have some intelligence!

**Luke Butcher** (student), United Kingdom

I will reply to the second point first. I agree with what you were saying. It reminded me of the discussion we had on the first day where we were talking about Wikipedia concerning tutors and other sources of information. We mentioned how it is the tutor or professor or the staff at the school who has that knowledge and experience to help guide students in making the right choices and sorting out the garbage, as I think we termed it, from the good stuff. I think students do respect and understand what the staff are trying to do; they recognise that the professors have been through the process themselves and they have things to offer. It is not
therefore about saying we want complete freedom to be able to choose everything; I think there are opportunities within smaller silos of information that we have to learn where we can have freedom to choose. I do not see it as being total freedom across the whole of architecture, which is a very diverse subject in many ways and which comes with a great deal to know. It is more about having pieces of freedom within that, hence the analogy of wandering in a field and being kept away from the electric fence. The fence could be this big, or it could be so big, but you have this certain area to learn in. I think this is quite often the way knowledge works. There is a large body of knowledge that you are developing and exploring and it is not always about being told: you need to learn this and this, and you must forget about everything else. I think that this way can sometimes turn students off learning.

Hansjoerg Hilti, Liechtenstein

I would like to ask, how can we contact students? Before we hear a reply, I would like to give an example from my memory: if every one of us has only one friend amongst the students, we have enough students.

Luke Butcher (student), United Kingdom

Allow me to say something on that point. One thing, which has been mentioned in this discussion, as well as during the break, is that there is the potential for an organisation like this, one which is made up of students across Europe, and similar to how we are trying to do at the ASN in the UK. It seems to me that there could be some sort of setup along those lines, which would not conflict with things like EASA because it would be doing things a little bit differently. There would then not be the problem of changing over of councils and the like every year because it is not dealing with the same sort of event as EASA deals with: it is just about communication. The best way of doing that, I believe, is directly through the students. Either the professors or the students themselves can put forward a representative of each school who would then become a contact point. You would then be relying on those students to disseminate information. What may be needed is perhaps a group of heads to find out what is impacting on the students. It might be called a European Student Network, for example. This is what it would seem sensible to have.

Maria Voyatzaki, Greece

I somehow feel that we should be exploiting and benefiting from this encounter. We should learn from the case studies that the students have been bringing forward and the knowledge they have, but also extrapolate certain things from what they are trying to say, at an abstract level. I am not a pedagogue by profession, unlike Jean Loup Castagne or Dimitris Mavroskoufis who were with us. We are as intuitive as they are: we have been trained as architects and we teach architecture, so we do not have more credits than they have apart from the experience we have in education. We sometimes fly by the seats of our pants, the same as they do. We work on an intuitive basis. Despite the fact that I said I am not a pedagogue, having recently had two children, I have been reading about pedagogy and the ways of bringing up children and I have realised that the experiential part of learning is very important. You realise its importance
when it comes to learning foreign languages: the earlier you get into it through games and playing, the more spontaneous you become in your use of that language.

Reading between the lines as I listen to the students, I think that what they have been trying to tell us through their initiatives is that we have to give them room for informal education. We also need to help them with that. The students would not be with us if they could do it all by themselves. From what they are saying to us, I feel that they need some guidance; they are stretching out their hand to touch ours in order to work together. We are, however, in some way over-conscious of the formality of what we offer as education in terms of the credits awarded. We have been trying for a long time to set up field trips in my school and all anyone cares about is whether the students are going to miss a week out of the semester when in fact they can learn an awful lot from that field trip experience. What the students have therefore been trying to tell us is that we have to formalise informal, lateral education within our curricula to match with what touches their hearts, with our collaboration. Perhaps I am misreading their intentions: I would appreciate their feedback on this.

Constantin Spiridonidis, Greece

I must say that we were quite anxious about this session, but the results have been extremely positive. It is a relief, the way it was done and run. I feel, after this experience, that we are facing the consequences of a system established many years ago - we have already discussed this in the previous sessions - this system of teacher and teacher-centred education. This system automatically creates two sides: those who teach and those who are taught; it creates the teachers and the students. In this relationship, it appears from the presentations we heard in the morning that the students need to escape from this system, in order to develop their own dreams, initiatives, feelings and learning experiences. It means that the school does not fulfil all the necessities that students have in their minds. This is a kind of failure of our institutions. The fact is that the students need to have this energy which cannot be developed within the framework of the institution: they must go out to find other means or other possibilities to do this. Beyond that, I think that there is a hope. The hope is that increasingly, within the milieu like ours, the possibility of going in another direction, to depart from this teacher-centred education system and to pass into another conception which is that of student-centred and learner-centred education, it is something which gives us hope that we can overcome these kinds of divisions. Why do we have to speak about teachers and students, since both of them in this new conception are learners? This is already a common ground, which may create very new conditions of organising our schools as schools and not as institutions. The difference between school and institution is tremendous; it is a radical difference. We therefore have to rethink it and I am really very happy that during the previous sessions we had the opportunity to introduce, through different presentations, this new conception.

I think that the pedagogues we had here helped us greatly regarding this new direction. They helped us to rethink our system, but to rethink it from the very bottom, to ensure through this learning process not the top-down approach, but a bottom-up one. They also helped us to understand that education of the architect, the learning process, is a parametric one. It is open to uncertainties and open to improvisation to a great extent. I think that this session today allowed us - it allowed me, certainly, I cannot speak for others - to feel the consequences of what we have had up to now and to open the window to something which is coming.
Helene Bangert (student), Germany

What you said is really nice; there is however one thing I would like to add. There is no failure and no division on your part. If you gave us too much, if you gave us everything that we are doing ourselves, we would not allow our brains to work and develop creativity. I think you give us a good basis from which to start and we are satisfied with this. Please do not think there is any kind of failure; you just have to be open, prepared to take us seriously and to give us a little more motivation, but truly, I do not believe there is any failure at all. What do the others on the panel think?

Christianna Tsingou (student), Greece

I agree with Helene. I do not think it is a question of failure. I believe that as a student, I have the need to take initiatives in order to feel active in the school. We do need our teachers to be with us at every step of the way. We do not have to feel as if we are passive listeners or passive learners; we have to be active. I think that what the professors should possibly consider or rethink is the approach to communication with us and not the curriculum.

Carrie Bayley (student), United Kingdom

I think you can also link the question back to the topic of what we think of the conference. To some extent, this is one of the learning environments that could be similar to something, which is in a school that there are people talking to a group of people. What I personally have found from this is that the most relevant and the most informative conversations come from outside this room where different people meet and discuss all their different ideas about what is happening during the day. It is about making those informal discussions a part of something that is more integrated into this more formal part. It is as if the conference is in two parts: there is the formal part and the informal part. Both of them contribute to the overall learning and the quality of what people take away from it. I think this is similar in education.

Pierre von Meiss, Switzerland

I would like to leave aside these very nice general comments a little and come to some more concrete points. Over the past few days, you have heard that, as we know, architectural education does not necessarily lead only to an architectural practice as a designer and that indeed many of the architects end up doing rather different things. My question is, to what extent the panel members feel as students that this openness is also reflected in the curriculum and in the kinds of courses offered. My second question is linked to that. I am now quite old, actually very old! Looking back, I see that the European architectural schools are a little conservative in their organisation, in terms of this outlook. For example, we are still unable to accept a student who has perhaps a biology degree into a Master’s programme. We do not even accept a graduate who is closer to the Master’s programme, say a graduate with a geography degree. There are endless barriers! The barriers are also for you: if you finish your Bachelor’s degree and you want to do industrial design, even that may not work out. You may not even be able to go with your Bachelor’s in Architecture into a Master’s
programme on industrial design. All these barriers are in contradiction with what we say when we claim that architecture can lead to many things or to anything. I would appreciate your reaction to this.

**Luke Butcher** (student), United Kingdom

I think there is a general failing - I am going to use the word failing - of institutions, not necessarily schools, although they do have a part to play in this, along with the architectural press - books, publications - and also the bodies that govern architecture in not recognising what you are talking about, in the way architectural education prepares you for things that are not just architecture. I think it comes down to the question what an architect is, or what an architect does. There are issues of expanded practice where many people are being trained to be architects and then they do not become architects. Yet they are still doing things, which could be considered architecture. The question is how institutions and bodies recognise that. I think around 40% of graduates do not become architects after starting. I remember seeing figures in the UK where a large percentage of those go to work in the construction industry or other areas of the built environment and they are doing the work of architects. It just seems perverse that there is all this architecture being done by people who are trained as architects but who are not called architects, which we ignore. As a student, it is extremely frustrating: you feel you are almost forced to go and get your licence to be an architect. Yet I can think of instances in the UK where people are doing architecture but they are not licensed as architects. They do not call themselves architects but they are still doing really interesting things. There is an organisation in Scotland called Pigeon Perfect - they are exhibiting at Venice this year - they are architecturally trained. There are other examples. As a student therefore, it can be very frustrating, especially now. Some of the things I showed earlier about the Pavilion of Protest and the What Now collaborative highlight that. People are almost rejecting the licensing because they either feel it is not necessarily adding anything or that it is in fact constricting or limiting them. This is something I have spent a long time looking at: I spent a year looking at this expanded practice in a Master’s thesis piece. It is amazing how diverse the profession really is, and yet we still have this single idea of what an architect is. I think that this is still reflected in some schools and in some parts of the curriculum, while in other parts it is not. There is an internal conflict which I think needs to be resolved; it is not just for schools to do this, but for the whole profession of architecture and those interested in architecture to deal with. This may answer the question, but it may have raised more questions than it answered.

**Maria Anagnostou** (student), Greece

I will talk only about my school. I think that one basic thing which is missing is the practice of what it is like to be an architect in real life. We do not see this during our five years; this is something else we have to find out on our own. There are many students in my year who work outside the university, in offices, just to get the experience. I think that someone at the university could do something like a workshop outside the university in an office so the students can learn what it is to be an architect in real life, working in an office eight hours a day. I think this is currently missing.
Helene Bangert (student), Germany

I have just one small question. Speaking personally, I do not see this as a barrier, but if someone who did a Bachelor’s in biology, for example, and then did a Master’s in architecture - if this were possible - would he or she make a good architect? Do we not want to teach people who, when they are finished, make a good architect and then think what they want to do?

Frid Buehler, Germany

I just have two short points to make. Firstly, I would like to add to what Constantin Spiridonidis said: I think having this panel of students was a complete success. The second thing I wanted to say was that I have become aware that the process of changing the relationship between students and professors has occurred more in our schools than we tend to think. I believe the students are on the way to accepting this partnership; I think this is also a success of Bologna. If you think back, Bologna was founded in the Sorbonne, not by politicians but by university teachers. These teachers wanted to return to the roots of Renaissance universities where the universitas of studio or professorum was a reality. I think that one of the goals of Bologna was to establish this in this new system. Therefore, for me, it is called Bologna and Sorbonne, it is not called Yale or anything else.

Jos Leyssens, Belgium

I have to say that what Pierre von Meiss was saying is absolutely right. It is also a comment I made a couple of years ago. It is important to know that there are about 550,000 architects in the profession across the whole of Europe. As I calculated a couple of years ago, we have about 160,000 students in architecture in all of Europe. This is a very high number. Let this be clear: architectural education in Europe is of a very high quality and I am absolutely convinced that young architects, or educated Master’s graduates in architecture can do plenty of things. As far as I know, however, schools do not show enough to these youngsters what other possibilities are available for a graduate with a Master’s degree in architecture. I also think that there is not enough information up front. We have a very sexy profession: if you go and see movies about architecture or about architects, everybody is very enthusiastic and wants to do this. I have a question for these youngsters here: what were your expectations of what you were going to do in the future? Did you have enough information about what an architect is, or about what architecture might be?

Maria Anagnostou (student), Greece

I believe that I will never know everything about how to be an architect. I would like to study for another fifteen years in order to learn everything, but it is not possible. I have to know some things and then find my own way, I believe.

Hansjoerg Hilti, Liechtenstein

I would like to add a question. What we saw from your statements is that you work quite hard with this non-formal area and then within the formal area, you work within the institution and
outside it. Do you get credits for the work you have done besides your architecture studies? Or do you get paid for that?

**Maria Anagnostou** (student), Greece

I will speak for us: no, we do not get paid for what we do. In fact, we pay to exist! This shows how much we love what we do, how much we want to do it, how much we want to see it growing. Personally speaking, when I finish the school, I plan to be one of those who will support it with my work by funding it.

**Hansjoerg Hilti**, Liechtenstein

This shows something. I think the students are now graduates because they learned a lot from what they did aside from studying and maybe even more than in a usual classroom. Unfortunately, we do not accept it as a learning process, at least we do not give it credit. For their lives, they learn quite a bit if they do something as these students here have done or what the students from England have done or what has been done in Muenster.

**Luke Butcher** (student), United Kingdom

In Manchester we get paid for some of the things we do. If you are teaching the lower years, you get paid as a teaching assistant, which I think is equivalent to an associate lecturer, or something along those lines of pay. The school also pays some members of the Student Society: there are four positions, which are paid. Effectively, there is a committee, which makes the decisions and then there are four paid members who enact those decisions. This has meant a lot more can get done a lot more quickly: this is because those people are free at that time and they know that they are getting paid for what they are doing. It is not as though they feel that they are working for nothing. What they do is obviously always appreciated, but it feels more appreciated when they are actually being paid for it. I think it links into issues of students working for free in practice as interns and generally architects not being paid enough in any case. If you start expecting students to do things for free at school, then they start to expect not to be paid when they go into practice and they expect not to earn very much in later life and then suddenly we find ourselves in a position of low pay. I have recently discovered that in the UK we are the 82nd position of worst paid professions, below policemen, yet we go through six to ten years of training. This seems mad to me!

**Helene Bangert** (student), Germany

We are also paid but it is more a kind of symbolic payment. One student who is a tutor can do another job while he is studying as obviously he has to live. Payment is however more symbolic: it is what students get in exchange. They can use certain infrastructure, they have a small office, they can have access to computers, a telephone and printer: this is the way the school wants to give us something back for what we are doing. Each kind of project, maybe an event or a lecture, this is for us, so we do not really need to be paid and we do not need to get credits either because all this is done for the students.
Ramon Sastre, Spain
Continuing the reflection that Constantin Spiridonidis started regarding this failure, I would say that, while all schools are certainly improving, the students we get in schools are teenagers and we deliver adults. They start in a school that gives them everything; they know what they have to study on their courses. It would be very bad if they finished in the same way as they started. They naturally have to look for things that are not in the school; the school will never provide everything for them. This would not be good for them: students have to learn to look for themselves and find what they need and what they lack. The school can of course give more and more but the students will always need more beyond this.

Selahattin Onur, Turkey
My question is very much related to the second part of the topic of the session concerning student recruitment. To quote the first question: what are the most significant characteristics of the profile of the student cohort to be recruited in a school of architecture nowadays? I would like to ask the panel participants to try to remember their initial confrontations with their architectural education, their very first years when they came out from their secondary education. When remembering that experience, could they think about what the most significant characteristics of the profile of the student who is coming from earlier education need to be? Moreover, how can the early education of our incoming undergraduates be informed and how should these young students be prepared in order to be fit for a healthy and prosperous architectural education? This is my question. I would like the panel to think about what they thought was lacking when they came to university and what they thought would have been good to be equipped with when they came into architectural education so they could have performed better or enjoyed their education more.

Luke Butcher (student), United Kingdom
That seems like such a long time ago - six years!

Christianna Tsingou (student), Greece
The first thing that perhaps comes to mind is that the schools should promote what the students do, what the professors do: they should project their work to people outside the profession. This could be through exhibitions of projects which are open to the public and which students from secondary education can join in with and see.

Carrie Bayley (student), United Kingdom
I think the question links back to a few of the earlier questions. Those are the questions such as: Why did you come into architecture? What did you expect of the profession? I think that the people who are coming into schools are from many different backgrounds; this brings a diversity, which needs to be exploited by the different schools. At the same time, the schools need to maintain a level with which everyone is comfortable, in that each student can then become equipped with the basic skills that they need in order to pursue architecture. They also need to
maintain that diversity which people have come in with in order to enhance the overall quality of the learning environment. That in turn links back to the sharing of ideas amongst people.

**Luke Butcher** (student), United Kingdom

When you start studying at an architecture school, one of the biggest changes is that a university education is different to a school education. For me, one of the biggest things to get over was quite simply the different ways it works, such as having lectures where there are 200 people in a room, rather than a classroom where there are thirty. It is a different way of learning. Another change was the different types of seminars and studio sessions. Further, it was a change not having contact every single day with a teacher: when you are at school, at least in the UK, you see the teachers every single day. When you are at university, however, you might only see a studio teacher one or two days a week. This puts a lot more responsibility onto the student. We were talking earlier about the freedom a student can have. I think in the first year, it is about giving students the confidence and the independence to be able to go and do those things. For me, successful programmes allow students to develop that confidence. In terms of what should be selected in recruiting a cohort, I think that it is quite dangerous to start saying a candidate should do this and that, or be like this and this. This is because, as Carrie was saying, the diversity in the profession is what makes it such a great profession. We should be encouraging this diversity; as soon as one starts putting restrictions on the sort of people schools want to have, it sounds dangerous to me.

**Kostas Moraitis**, Greece

I have a strange question, a rather difficult question that will be directly principally towards the students from Greece, from Thessaloniki. You have presented an idealised environment of studies. Naturally you are good students, you have a rather good relationship with Mr Spirionidis and Mrs Voyatzaki, you generally have a good relationship with your lessons, but my feeling is that - especially for Greece, I cannot speak for other countries - sometimes, university campuses are rather like battlefields. They are battlefields of opposing political identities and opposing political activities and actions. Let me explain this to other people who are not Greek: I do not mean ideological battlefields, I mean real battlefields! I do not know whether things like this happen in Italy or Spain or in Portugal, but in Greece, this ideal that has just been presented does not actually exist! I would like some advice therefore: survival advice for the next years, especially what will happen after the end of your studies. Will you continue to work here, as architects? Will you continue your studies here, either at Master’s level or PhD level, or will you try to leave Greece? Finally, what will be the help of an organisation like the one we are speaking of today?

**Maria Anagnostou** (student), Greece

There were a lot of questions there! Firstly, I totally agree with the concept of a battlefield: it is awful for the students. We were thinking about this before when we had the comment about how we can contact students. In our university, this is impossible because the students cannot be organised in any way: there is no way for them to be organised at the present time with the way they are now. Personally, because I greatly believe in the experience I can get
abroad, for my Master’s I will choose a country other than Greece. This is more because I want to have the experience of attending another university. Because I love my country very much, I want to have a job here - that is, if I can find one! I know it is difficult, but I want to be here, in my country because of the great love I have for it. My suggestion for those who study in the universities of Thessaloniki is to be more active if they do not want the battlefields to exist. We have seen in the last year and a half that there has been a beautiful movement of independent students who do not want these political battlefields and who are trying to do something to eradicate them. I hope they will succeed and obtain what they want eventually. I will finish my studies in one year but I hope that these students now, these independent students outside the political battlefields, will manage to establish some sort of order in our universities. This is because it is truly a mess.

Hansjoerg Hilti, Liechtenstein

At least there is a chance that the graduates are experienced in various things when they come out of the school.

Jos Leyssens, Belgium

On behalf of the profession, I have the following to say. Most of the people present are heads of schools, you are colleagues and yet at the same time, you are in competition to some extent. This is because you want to get as many youngsters as possible into your school as schools get subsidies from the government based upon the number of students they have. This is a very perverse system: you should be tested on quality and not on numbers. This is the reason why we have so many young architectural students all over Europe. For me, it is a big problem. This is because a large number of these youngsters start with very high expectations of the profession. There I return to my previous question, which has not been answered by the young lady: she told us that she wanted to continue to study for fifteen more years. If you are in the profession, or whatever you do, you are going to do further studies. I myself am here because I am interested, I want to study about my own profession and this is why I am here. Architects continue to study all the time. I think this is true of all professions: if you take it seriously, you continue to study about your own profession. What I would like to know is, before you started this course of study, why did you choose these particular studies and what were your expectations? Had you in mind that you were going to become an individual architect that was going to come up with some conception to make houses or other buildings, or was it something else? Or did you simply not know what it was all about? I would appreciate a response to this question.

Hansjoerg Hilti, Vaduz, Liechtenstein

Let us return to the panel for a moment, as they are the authority on this matter.

Luke Butcher (student), United Kingdom

I chose to do architecture from quite a young age. This was partly because nearly everyone in my family is a builder or works in the construction industry as carpenters or plumbers or even
driving concrete lorries. I have grown up around the industry but obviously never actually been encouraged to go into that side of it. Architecture or surveying were the avenues I had been encouraged to look at or to follow and from that an interest specifically in architecture grew. When I came to study, it was initially with the idea of the architect as someone who designs a house or a skyscraper: I thought that was what I would be doing. I did not appreciate all the other things that went on. I thought it would be drawing and making pretty pictures or models. I did not appreciate the management side of things as well as all the other things an architect does. As I have gone through six years of training, I have found out all the other things that an architect can do and now I have not got a clue what I actually want to do in terms of being an architect or a practitioner! I would like to continue into research and perhaps do a PhD, but before that I would like to go out into practice and try a few things there first. I have to say that I am probably more confused now after six years of training than I was before I started!

**Helene Bangert** (student), Germany

I totally agree. When I began my studies, I believed I was straight on my way to becoming the best architect in the world, with my own office and so forth. I was a little naive! Meanwhile, through the studies, I learned about the possibilities that I had. In my case, for example, with the job I do, I am quite uncertain as to whether I want to become the classic architect and follow that path after my studies, or whether I want to do something more in the direction of public relations or something else. There are so many possibilities. When you start, however, I do not think that any student actually knows what possibilities there are. I am not confused, though!

**Maria Anagnostou** (student), Greece

I would like to add the point that what I said before about wanting fifteen years more to study, I meant it! This is because there are too many things and I am confused too: I do not know exactly what I want to do next. I am waiting until I complete my studies and then I will have to choose. I could continue with more studies but I am not sure. Everyone is confused: there are too many things that an architect can do and no one knows when he or she gets to the school what the possibilities are.

**Stefano Musso**, Italy

I would like, first of all to thank you, Maria Voyatzaki and Constantin Spiridonidis. We spoke last year about the need to listen to the students and I was glad to see that the level of the presentations and above all, of their answers, has been quite impressive. This also means that our schools are perhaps not so bad after all. With all the shadows and lights, they are not coming from the moon: this means that something good is still happening. In my opinion, we always have to remind ourselves that while we talk a great deal about how to improve the quality of the teaching, now we are also talking about improving the quality of the learning. Learning is of course not only on the side of the students but also on the side of the teachers. It is an open process, an interactive process. This means we cannot hope for a possible universal definition or a total formalisation of what learning is. A learning process should be lived between teachers and students. We can also never forget the principle of goals: that sometimes you do something to obtain a goal and at the end of the process, the goal is completely different.
We cannot forget that - as my mother said - good students learn despite their teachers. What I would like to ask our colleagues is what they think the students should or could do in order to contribute to this change of mentality, the paradigm shift. Very often, both this year and in previous years, we have asked how we have to act or to behave as teachers - teachers who are all different from each other - in order to improve the quality. We have now asked what the expectations of the students are, to which you all responded. I totally agree with those of you who said you expected teachers to be able to motivate students, to take care of them, to deal with something which a student can feel really belongs to her life and something that she believes in, something that is not only a matter of a job. I am now curious to know what you believe - taking yourselves as a good example of the products of the schools - the students should or could do apart from what has already been described in your proposals. I do not mean this in a formalised way, evidently, because you do not have any staff or faculty council and the students are much more numerous than the teachers. I would also like to know your colleagues think, that is, the other numerous students in the schools, for if it is true that professors are different amongst themselves, students also differ from each other.

Dag Boutsen, Belgium

I apologise if my question comes a little late because there have been many questions. Regarding the matter of credit, and how we can reward this type of extra-curricula learning, such as management skills, communication skills, and so forth, I just wanted to refer back to the presentation I gave two years ago on the fragile team which we launched and which has now been running successfully for two years at St. Lucas. In these two years, we have thirty students who have earned credits through, instead of, for example, participating in a design studio, working out all kinds of activities, which were beneficial for both the institutions and themselves as well as in the networks. With these students, we have been organising two international student conferences in which many schools here have been participating. We evaluate the work of these students as if it were part of the course. This is because there are so many skills that they have developed which are, as I said, beneficial to everybody, that this has become a very normal procedure. We also have student deans who are colleagues in the top board of the school. They are also rewarded with credits for this. I do not believe that paying money does the same thing, symbolically or not. This is just a plea, not a question, for the credit system to be used and for more of these activities to be done.

Chris von Langen, Netherlands

I would like to return to this relationship between tutor and student: this is more of a warning than a question, although there is a question at the end. The warning is that we should perhaps be careful not to become too sympathetic to the students. Sympathy is about identifying yourself with the other person. Tutors should not identify with the students and students should not identify with the tutors; we should instead possibly indulge in a system of empathy whereby we respect the otherness of the other party and the difference between tutors and students. I think this would be a wiser way to develop this cooperation, which is indeed very valuable for what we call the quality of learning. As a form of soft criticism, I feel this empathic way would have led to having a student on every panel during this meeting and not only on one panel.
Hansjoerg Hilti, Liechtenstein

Before we return to the students, I would like to share a short anecdote with you. I have a friend who is a social worker who works in a prison. Once, a prisoner asked him: "Do you know the difference between you and me?" The social worker shook his head. The prisoner replied: "You have a key." There is the difference! Would one of the panel like to react to the statements that have been made?

Christianna Tsingou (student), Greece

I feel we have covered the questions with the points we made earlier. The most important thing for us as students is that we are motivated -not only from professors and teachers or tutors, but also from fellow students - in order to help us be more active, whether it is within the school and the curriculum or outside it. From the students' point of view, what I think is also important is that a professor or a tutor can transfer to us his or her experiences as well as the knowledge that he or she has.

Helene Bangert (student), Germany

I would just like to make a comment about the credits or payment reward, which is that I think both work. I am not sure though that if we gave credits for everything the students do which is not directly connected to what our education or teaching structure has, whether they would not be missing something. Perhaps you do not have the same system, but in our system, the students have to collect 180 credits in the Bachelor's degree before the Master's. I therefore wonder whether, if someone collects 50 credits for something other than a design project, he is missing something. This is a question I would like to pose.

Herman Neuckermans, Belgium

Some of you will know that I am an EAAE agent and I would like to add to something I said before about motivation and freedom of choice of programmes. You probably know, but I would like to underline it, schools have a profile. What is on the daily menu and what is à la carte differs from school to school: it is linked to their profile. Yesterday, in the General Assembly where there were only a few people, EAAE produced a guide to schools of architecture online. You can consult a copy of it and a copy of each profile can be found there. That provides a way for students to choose a way that is more motivating to the individual student. It would be good to look at this, especially if a student is thinking of moving from school to school. This is the main purpose of this guide.

Maria Voyatzaki, Greece

I apologise for sidetracking the discussion but I have been meaning to say something which could now sound irrelevant. I would like to make two or three comments on the points raised by people in here. We have been dropping terms from psychology. We are of course amateurs; if a professional psychologist heard us using these terms, he or she might easily conclude that we are misusing them. I could not agree more with Chris Younes about the
empathy versus sympathy issue. I would drop into the discussion the term of the role model. This would touch upon both Jos’s Leyssens and Kostas’s Moraitis points on the ACE and the educator’s role in the system and how the students perceive the different roles. Back in the seventies, Frei Otto suggested that the fees for an architect for a building should be higher as the building gets closer to zero energy, when in fact at the time it was not an issue. They thought he was a romantic and everybody overlooked his proposal.

Talking about education in times of crisis when money is necessary for things to move forward, very critically one should look at how ACE should promote the idea of higher fees as buildings get closer to zero energy, for example. There you should be the role models, in the same way that we educators should abstain from politics and the way you perceive it or the way it is happening so that the students get the right idea when they enter the university to leave them aside. We should be the role models in showing how to be out of this. I would like to conclude by congratulating the panel. It might have sounded, since Constantin and I thought of this idea of inviting the students, as if we are blowing our own trumpet, but it is absolutely not this! We are not involved in the professional way in which the students handled their presentations from their communication skills, the clarity of the presentation with very straightforward statements, to their brilliant English and above all their views. This reminds me of again the importance of this experiential free way of dealing with your education that brings us back to what Luis Barragan used to say: Don’t look at what I built, just look at the things I’ve seen.

Jean-Loup Castagne, France

Unfortunately, we do not have time to ask another question. I would like to say two things, however. Firstly, let me address learning as a definition. You learn something when you are presented with new information and your representation evolves. Something in your mind changes. That is learning. There is a definition of it, therefore. You can teach by providing a lot of information. The other point is that as I was observing, I was preparing a lot of questions because I think this discussion is great! All those questions were asked but one, which was, what about studio evaluation? That question never arose. What about the evaluation of the product? I was a little surprised it did not come from the students. Moving on, I wanted to say that I find this a great moment. This is a moment where students and teachers are talking together in a constructive way. It is not for revenge, it is not something where the teacher is proclaiming: I am the teacher and I know the answer! Teachers are listening, students are speaking freely and for this, I think it is a great moment.

Hansjoerg Hilti, Liechtenstein

Let me give the last word to the students on the panel.

Maria Anagnostou (student), Greece

I would like to comment on what Mrs Voyatzaki said. In this period that we are, we tend to criticise the politicians, the ministers and the Prime Minister and the advisers to the ministers and Prime Minister. From what I have seen, however, I believe that a person builds his political
character from the time he enters university. This is true in Greece, at least. At the age of eighteen, nineteen, twenty, a person starts to become who he will become in his political attitude in the future. This is something that should be formed and improved upon so that these kids at the age of eighteen have the proper basis to become human beings. They should learn how to behave in their political statements and actions. I believe this is important because in our university we are sometimes unable to pass through the corridors because of the actions of those students who are politically involved.

**Christianna Tsingou** (student), Greece

I would like to add a very quick comment about the credits and the rewards. Personally, I do not believe that the credits or the ECTS system or payment in terms of money is what we as students are looking for. It is just the recognition of our work, of our achievements and of the projects that we do. We are simply looking for some motivation, sometimes simply some verbal encouragement and help with this.

**Kyriaki Gavogianni** (student), Greece

I would like to give you some advice: you should invite more students here! There are very many questions and we are just a small sample of the students involved.

**Helene Bangert** (student), Germany

I have one final comment. This does not concern any of the questions, however. This is an experience from our school, but always think about the fact that if you involve students in your work and in your school, you will always have a system of constant evaluation. If the students are involved, and you are acting and sometimes arguing with them, you can be sure that evaluation is always good, because it is always ongoing.

**Luke Butcher** (student), United Kingdom

The only point I would like to reiterate is the point mentioned slightly earlier about how to communicate with students. I think only having the six of us here shows the need for these sorts of discussions to happen among students themselves on an annual basis as well. I believe there is definitely a need to bring more students together from different institutions to talk about these different issues. This could then help inform schools and other bodies such as the ACE about how the profession can move forward.

**Carrie Bayley** (student), United Kingdom

Something I take from some of the comments is that there is something of a misconception about what certain groups of students do. I think this also comes from cultural differences between the schools. It is an area in which Manchester is particularly successful. It is not seen as a confrontation; it is seen as a way for students and staff to approach each other. That in turn engenders a mutual respect. It is not about a sympathy, it is about learning from each other.
Hansjoerg Hilti, Liechtenstein

I hope we understood the message that we all received. I would like to thank the students very much for accepting the invitation to come to this conference and for being genuinely open in the discussion. I think it helped us quite a lot. Thank you very much.
Session 5

Synthesis and Conclusions
Session 5 Synthesis and conclusions

Chair:
Constantin Spiridonidis, Thessaloniki, Greece

Introductory panel:
James Horan, Dublin, Ireland
Ted Landsmark, Boston, USA
Marvin Malecha, Raleigh, USA
Pierre Von Meiss, Lausanne, Switzerland
Hansjoerg Hilti, Vaduz, Liechtenstein
Debate

Constantin Spiridonidis, Greece

It has become a tradition to have this kind of closing session. It is a session where a final discussion takes place and where it is possible for new ideas and new perspectives to be raised and where a final conclusion can be reached. For this reason, we try to organise the last session in a way that will provide us with an opportunity to review the different sessions that have already been presented. It also allows us to open a debate from a general perspective around the theme of this meeting. I would like to say that one of the main concerns when organising this event is not so much the technicalities and the practical aspects of the event, but rather the agenda. This can really be a headache and cause a lot of anxiety! This is because you never know how the sessions will go, what kind of discussions will develop, and what themes and issues will emerge from these sessions. This is why the closing session is always some type of an evaluation of what has happened and makes it possible for us to rethink some of the points that have been discussed.

I have to confess that I feel that this time, the sessions ran better than we had expected. As far as I am concerned, a number of issues were raised which I considered very important; for this reason, I would like to emphasise some of them and I am sure that the other colleagues will add still more issues. From my point of view, I would like to present those outcomes of this experience which were for me the most important. When we discussed the possibility of concentrating in the meeting on the question of learning, it was something about which we were a little unsure. We were uncertain how this theme would be accepted by the audience. It was something of a surprise that we found a ready environment for this. It was also very interesting that in most of the presentations, this new understanding and shift in understanding in the way that we conceive education and more specifically, architectural education, appeared to be something that was already there.

I am very glad that this event became something of a catalyst to bring to the surface the realisation that there is a new conception of educating architects that is being created slowly and progressively. In turn, this gives us the new possibility of imagining new things, considering new perspectives and of revising the logics and the values that we have so far developed in our professional activities as teachers. I also have to say that it was a pleasant surprise to listen to the Americans and hear that the NAAB is thinking about the possibility of moving the model of accreditation and the evaluation of studies from something which was based upon standards to something which is based upon learning outcomes. I think that it is a very decisive step, since from the official aspect - if one can use the word official - of architectural education debates this kind of issue takes a more coherent version and raises the very interesting issue that we have to discuss in the future, which is how we evaluate learning outcomes and learning itself.

Up until now, all the practices we have developed in this domain of evaluation have mainly been based upon the evaluation of the input, and not of the output. I feel that this therefore opens a completely new perspective and view of the way that we educate our students and the way we conceive of their education and of the profiles of the architects that we would like to create. This is something I find incredibly interesting; I am sure that in the future we will have many opportunities to discuss these issues and to investigate them further.
The second issue - again, as far as I am concerned - that arose from this event was the high degree of significance of the collaboration between ourselves and the specialists. It was a surprise to see how useful and interesting the impact of the specialists was, the pedagogues, the people who are considering and investigating the question of learning and teaching. It was exciting to realise how many things we have to share between us and how many issues we can investigate together. I believe we have to go ahead together with these experts in order to rethink and revise the ways that we are working and the ways that we are teaching in our classrooms. I think this is another thing, which has to be kept seriously in mind and we must look for new possibilities to extend this discussion.

The third point which emerged from the discussion we had in the third session regarding teaching methods was that all of us, expressed through all the interventions, tried to define a new way of understanding the teaching, looking at and defining the outcomes that the courses that we deliver have to assure. That was a discussion started here in this room. The differences in the conception of moving to learning outcomes-oriented teaching have very often been discussed here. In both the presentations and the discussions which were held, what was interesting to see was that the term of learning introduced a new obligation into the way in which our courses are designed. At the end of the discussion, I would appreciate Jean-Loup's comments on this. This obligation is that we have to learn how to clarify and to define in the most direct and appropriate way, what the learning outcomes which we are expecting from our courses will be. This is something which does not happen in our current practices where it is not always very clear what we want to achieve. By introducing the concept of learning, however, this becomes a necessity. It is something that we have to learn how to do because - speaking at least for myself - it is something that I do not know very well how to do. I do not know how to translate the non-verbal, which Kostas Moraitis mentioned frequently yesterday, into the verbal explanation and description of what is expected in order for something to be achieved in the end.

This is the one dimension, which appears to me to raise an interesting issue for discussion; the second one is that these learning outcomes have to be shared with the learners. Our students never know what the expected learning outcomes from the courses we deliver are. Or at least, they do not know this very often. I feel that this is because we do not know how to deal with this subject very well ourselves and so in turn, this area remains equally opaque for the students. From the discussions that we had with the pedagogues in this room and from the presentations that were made, it appeared to be very important that the students, the learners themselves, have to know what the expected learning outcomes are of a course in order to have a more meaningful and more direct involvement in the education process. I therefore think that this has to establish a new relationship: a relationship that currently does not exist. Perhaps this is true only for our school, but I am afraid that the last session with the student panel raised this very issue, saying that we do not have this necessary relationship with our students, which would permit the learning to be done in an appropriate way. There I believe we have to concentrate and exchange ideas and perspectives in order to ensure better results on our educational processes.

I feel that the last session revealed this problem and this distance. Even though we tend to say on a surface level that there is a good relationship and good collaboration with the students, I think we are far from having a very close and constructive relationship between us. This
has to be developed and for this reason, our schools have to encourage and support a real
dialogue with the students in order to express the varying anxieties of students as well as the
different wishes, the different expectations and the different perspectives that they hold and
have cultivated by themselves and which they try to fulfil during the period of their studies.

These are my general thoughts about the sessions; I am sure that my colleagues would like to
add other interesting issues and comments. Allow me briefly to explain the structure of this
session: we have the chairs of some of the panels to present their thoughts on the session
they chaired.

James Horan, Ireland

Not having been involved as a chairperson or panel member in any part of the proceedings, I
am just going to make some comments from an observer's viewpoint over the course of this
meeting. The word at the top of the list is "learning", but I will come back to that in a second.
I would like to tell you a quotation from Lucan: "Schools began with a man sitting under a
tree who did not know he was a teacher, sharing his realisations with a few others who did
not know they were students." This is actually quite a profound statement. The only piece in
that statement which relates to what we are now talking about as educators involved in the
processes of teaching and learning is that the communication process was identical. The man
under the tree did not have the words or the terminologies that we now use to describe what
education is made of. This in no way however diminished the fact that people were learning.
The other quotation that comes to mind is in fact one that I have used in this room before. It
comes from a fellow countryman of mine, W. B. Yeats, who speaks about what education is. Yeats
said: "Education is not about filling a container, it is about lighting a fire." During the speech and
the lecture about the choices that one might make between the hammer, the map, the watering
can and the Swiss Army knife, I was drawn to the notion that to light a fire, you probably need
all of those things. Lighting a fire in the Sahara is a very different business than lighting a fire
in the Arctic: it depends where you are and with whom you are. To some extent, therefore, I
found that this session was loaded with nuggets, valuable pieces of information and of advice
that I have rarely encountered in a session like this at the meetings of the Heads of Schools.

I will not even begin to speak about the keynote speech because it absolutely took my breath
away! It opened up a new possibility in my own thinking about my own teaching, my own
learning and my own education. These are the valuable things that we go away with. If you read
Neal Stephenson's Cryptonomicon, he speaks about a tribe of people located in some mythical
place like the north of Scotland who fell into total non-existence due to a spectacularly improb-
able combination of events. This meeting on this occasion for me has been a spectacularly improb-
able combination of people, their insights and the events that we have experienced.

We talk about learning outcomes and we talk about teaching. I would suggest that perhaps
teaching and learning are the same thing. We tend to think historically of the all-wise profes-
sor teaching and telling students how to become like him or her. This is not education: this is
passing on of information. Coming back on the bus last night, I mentioned to Marvin Malecha
the quotation that: "a lecture is an event that passes from the notes of the professor directly
into the notes of the student without ever going through the mind of either". There is a real
risk that this type of teaching has become the norm in the past. We have another responsibility
today. The word responsibility is, I think, so central to what we do, whether we are a student or a lecturer, whether we are teaching or whether we are learning, or whether we are doing all of this at the same time. We have a responsibility to provide the possibility for our students so that they are - and I am reluctant to use the word, but I shall use it anyway - sustainable.

The educational process through which they experience the contact with their school, their lecturers and their university must be structured in such a way that its responsibility is designed to ensure that those students can survive without the support of the teacher, the school or the university and that their training - to use the very most basic word - is so complete in its approach that they can continue the educational process long after these props have been removed. That is our responsibility. The learning business, therefore, may very well be what the student is expected to experience in today's understanding of the educational process. It is more than that. It is important that those who are responsible for the students obtaining that learning experience understand it from the students' point of view. If you are not experiencing it in your mind from the point of view of the student with whom you are communicating, you are probably talking to them not with them. Ultimately, like the man under the tree, it is communication. Communication can consist of talkers and listeners. In my view of the educational world, you have to be both at the same time. You have to be prepared to offer an opinion, and you have to be prepared to hear what the other person is saying either about your opinion or about something else entirely. At the end of the day, there is only one thing that I believe is really important from our point of view as educators: if you are not learning when you are teaching, do not teach!

Ted Landsmark, USA

Let me make a couple of comments, which flow from the students' session this morning. The first thing which impressed me about our dialogue here over the last few days was how much the students had to contribute to it and how important their presence is here. I think it is impossible to do any kind of self-assessment of a conference on the subject of teaching and learning without having students - those who are defined officially as students - in the room. I was particularly impressed with how concise their answers were and how pertinent their comments were. This was not because they were afraid to take on hard subjects; it was because there is something about the way they communicate and have learned. It may be connected with short attention spans and digital media, but they have learned how to say what they want to say very concisely. I feel that we all stand to learn from that. Indeed, the suggestion was made earlier that for future sessions, students should be included in each of the panels; that is something I would endorse very strongly.

The second point I would like to make, which reinforces and underlines some of the conversations that have been had in the United States about accreditation and assessment, is that it is very difficult for all of us to talk about the quality of learning and what it is that is actually learned in a qualitative way. As most of you probably know, at the Boston Architectural College, most of our 350-odd faculty members are not on a ten-year track, most are not full-time, most are practising professionals. Because of this, the question that has always been raised is that of how good they are as teachers. There is always an assumption that if you are a full-time faculty member, you must be good, and that if you are a practitioner who shows up in the classroom, then you are probably not very good. We decided to overcome that by establishing a set of
training courses for faculty members to enable them to be good teachers. This is obviously not the same as just telling war stories! Once that set of courses had been put in place, we then realised that we also had to put in place ongoing calibrations of how those faculties were assessing what quality is. We all know extremely exceptional work when we see it, we also all know work that is not passing when we see it. Those two extremes are fairly indisputable.

The question is, however, at what point does mediocre work become good? Moreover, there is the question of how we can genuinely assess the quality of what we are looking at. At the Architectural Accrediting Board, we are raising exactly the same questions ourselves. The only way we can do this objectively is to begin to take work of varying quality and to put a lot of evaluators in a room at the same time and to have them all grade the work as they see it and then to have them talk about it. In this way, the sense that one person has of what is mediocre as opposed to what another person thinks is good, then somehow becomes standardised and all of our evaluative mechanisms begin to expand and grow towards doing quality assessments of learning outcomes. What we actually mean by that is something that most of us frankly find a little difficult to assess. I would therefore hope and expect that there would be a continuing conversation firstly about what quality genuinely is.

Secondly, we need to discuss what means are being used to assess quality. Most of what has been used as an assessment tool up until now has engaged us in a physical space with physical objects: we look at boards, at portfolios, at models and at drawings. Increasingly, however, what we are finding at the Accrediting Board is that we are looking at digital models, drawings that take place in virtual space, evidence of quality that goes both to work that was done in a digital form, which has to be evaluated, versus work that was documented in a digital form, which means that it is of a secondary nature. How all of us go about assessing quality within digital formats is now a challenge, which is going to have to be addressed in a very significant way.

The reality is however that most of us do not have much experience of doing this. Apart from that, as several people have noted to me, our national licensing board is now accepting as credit towards licensure internship work that is done outside of traditional architectural firms. If you work in a community setting or for a government agency or if you work under the supervision of someone in your school, that now counts just as much as the work that you did under the supervision of a practising architect.

The question then emerges as to how one assesses the quality of the learning outcome that came from work that a student did outside of professional practice, in a community setting, in a collaborative way with other disciplines and individuals. How do you draw out from that what the quality of learning is for any particular individual? We need to have some deep discussions about this matter. Much of this in the United States will be shaped by discussions that go on between now and next summer when the American Accrediting Board will meet with the American Institute of Architects and students and our licensing board. Next summer we are going to take a hard look at all of the standards. One particular goal is to reduce the number of standards and give schools more flexibility. We realise that the challenge to this will be that the new standards, whatever they are, will come into place in 2014 and will be in place until 2020.

Given the nature of change that has gone on within professional practice over the last six years, for any of us to anticipate what professional practice will look like in 2018 or 2019 is daunting at best. We are therefore looking for as much input and feedback as possible about what we
think the nature of practice is going to be six years from now. We know that if we look back six years, we would not have anticipated where we are today. I invite all of you to help us shape that. The last observation I would like to make is much more personal and is about my visit to Chania this time. I had the opportunity on the first day to go up to the site of Aptera, the 10,000 year-old site that is twenty minutes from here. I walked along to the site and I looked at the building and I looked at the view and I thought about what it meant for there to have been a thriving culture in this place that was doing active commerce throughout the Mediterranean. They had a foreign policy, they had Ministers of Commerce, they had money, they were sending mercenaries throughout the region to bring resources back into the region - and they are gone. They left artefacts behind most of which are architectonic. We are still translating the language of commerce, but what is left behind is primarily their architecture. I could not help but coming back from that tour wondering how much of what we teach will be translated into material forms that people will see 10,000 years from now as having meaning for us and for them. That is something, which we do not get to experience very much in the States. I personally found it very moving because as an educator, you know you are having an impact on the work that your students will produce in some high-rise somewhere that will last thirty or fifty years, but what does it mean to build something that lasts that long and which has significance and meaning? That gets to issues of quality and how we go about assessing quality. Ultimately, for me, this conference was transformative because it gave me insights into what we as peers on both sides of the Atlantic are thinking about. Yet at the same time, it also raises some questions about the temporality of what we do, what lasts and what does not and what quality truly means in the long term.

Marvin Malecha, USA

I have followed up on my presentations by making observations that have gone across the whole sense of the meeting as well as from the session that I chaired. I have come up with what I call five tactical approaches to take from this meeting, at least for me. The first of these comes from Plato: it is to proceed into the images and shadows of the dawn. Knowledge begins with opinion; I believe we are at a moment in human history and in the history of teaching and our profession when we are truly in images and shadows. There is this blurring between who is student and who is teacher. If you go into the typical large design office today, the newest members of the firm are frequently as much teachers as students regarding the use of the new technology and actually changing the nature of practice in that way. There is also a blurring between the roles of the stages of becoming an architect or design professional. Schools have an increasing responsibility to pay attention to the internship period, just as we have an increasing responsibility to help with the continuing education of our colleagues. We heard earlier about the increasing responsibility we have towards early education involvement, the K12 activities recruiting the future. All of this issue of inter and cross-disciplinary study and lifelong learning is all coming onto us. In this way, this little quiet place we called architectural education is no longer quiet, nor are the boundaries firm any longer: they are blurred, now there are images and shadows.

When I was a student, it was easier. We all knew that we were going to have leather patches on our elbows and that we were going to have a particular function. You started in an office by doing toilet details and then, if you were good enough, you could do fire exit details. If you
were really good with a pencil, you could do the schematic drawings and sketches. That propelled you into the client meetings, which then meant you could take notes. If you were really good at taking notes, you could perhaps begin to be put in charge of a small project and you could move up. That structure does not exist any more. That simple ladder has gone and we have reached this new point. For us, this means we have to learn to communicate relentlessly.

The name Mark Twain, who is one of my favourite American authors, actually comes from the time when the writer was a riverboat captain. To mark twain actually refers to the fact that somebody was out in front of the riverboat throwing a line and a weight into the water to see how deep things were. He was doing it this way because that was as far as they could measure to whether they could move forward into the river or not. I think we are back into that mark twain period. It means we have to have this continuous communication between those of us on the bow and those of us in the wheelhouse. What we have to be is both curious and rigorous; we have to be willing to be agile and curious, we have to be willing to balance freedom with order. There is the wonderful expression: if you have nothing but freedom, you have chaos, if you have nothing but order, then you have something even more unacceptable. What is a curriculum therefore in this balance between freedom and order? If we have to move in shadows and images, then perhaps a fixed curriculum is not what it once was. Ted Landsmark has already talked about what the understandable measures are.

The one thing is becoming increasingly apparent as we do design education. It is something which has always been apparent to us, but which is perhaps now more externally apparent, and that is how important failure is to us. If you have only success in the life of a student, then that student really has not learned enough in their graduation process. I had a teacher once, Ralph Robson, who liked to give out A/F grades. The F was only reserved alongside the A if you did everything the course required but you pushed it so far, you pushed it beyond your capability and therefore the highest grade he would give would be an A/F because you took the material way beyond your own capability. There is an example of that type of curiousness and willingness to go forward. This evidently means that we have to welcome continual assessment and that we have to teach in a way, which is like an idea from the 1960s, but one which is coming back to life, which is that education is actually something of a subversive activity.

Teaching critical thinking is really about thinking about everything, which in turn means questioning everything. The notion of the professor as the final word in the classroom has gone. Even if you think you are the final word in the classroom, somebody is inside a computer checking your facts as you are delivering the lecture. That is fine, but you have to be prepared for this: it changes our role. Kostas Terzidis’s lecture opened my eyes to something: I had gotten myself to the point of welcoming technology as yet another tool. What he woke me up to was the fact that technology is no longer a tool, it is a collaborator. It is a kind of nerdy - to use an American expression - a nerdy, needy collaborator, but a collaborator nonetheless. Yet that does not mean we not retain the old tools. I am up here with my pen, I have my pencil sketches, but I am using my computer. Everything is together and everything overlaps each other, but in fact this new technology is now our collaborator.

We think about what the difference has been in the last few years with the technology we carry around with us. Now I think, twenty years out, that if we are looking at accreditation standards in America for 2020, let us think about what that means. In thinking about eight years from now, let us look eight years back: we were not carrying i-phones with that kind of capability
eight years ago. Change is only going to increase even more once we have this capability. The notion of being able to talk to the phone has already started, but I am sure we will be having arguments with our phones eight years from now! There is a wonderful TV show that I was introduced to by my students called The Big Bang Theory. If you love repartee and silliness, that is what goes on between these four scientists at Caltech. It captures it exactly - that is the computer in our pocket eight years from now, I am convinced of it! This is my plea: embrace our beloved profession. It is a beloved profession.

Like you all, I have been on construction sites, we all know the process. I have had the privilege of travelling the world, of meeting with architects and I know this about architects: we are the last people of good intent on a construction site. I say that without apology. Almost everybody there has four or five different ways to make a profit, while the architects basically have one way to make a profit and it is on a line item. The contractor has maybe five or six ways to make a profit and only one of them shows up on a line item. Banks are making profits, real estate agents are making profits, everyone has around four to six ways of making money, while we are there to make a quality environment, almost without fail. We are truly of such good intent. In my mind, we have a beloved profession; I myself love this profession deeply. We have a history as a profession; it is not just a history of the buildings and the artefacts we make, but the relationships that lead to the contracts that we have, the relationships of the architect in society. We do not teach the history of our profession, yet we should be teaching it. The practice and ethics that come through our profession is something worth teaching. Moreover, theory and practice should be co-equal and co-dependent in a school.

One of my criticisms of my American colleagues - and it was existent in my own school for a number of years - is that the theoreticians and the historians, everybody has high prominence, while the practice teacher at night, usually not tenured, has no voice on the curriculum committee. What kind of a message are we sending our students if we do this? The whole excuse is that we have the practising professional teaching that class. That sounds something like a technician teaching to the high society of the theoretician; we truly need to value theory and practice as equal and co-dependent. I love the case studies in immersive experience; I heard students today talk about the fact that they had been on a construction site only once during their education. Yet they should be on a construction site every semester, not only once. They should be studying how the architect got the job, how the architect worked with the client, what post-occupancy evaluation is, what the Brits call soft landing for buildings or in our case, commissioning of buildings. What is post-occupancy evaluation? What is pre-programming? This is the change and transformation of our profession and as such, it should be in our schools.

The acceptance of the multiple roles of an architect, the questions of what an architect does today is another such topic, which should be broached. Since 2008, anecdotally, 50% of the work in an office did not exist as the work of an architect in 2008. The 2012 work of an architect is 50% different from what it was. If we accept the fact that within schools we generally teach people to do the first 10% of a job pretty well and not the rest, that means that we have actually focused on about 5% of what our students are going to do in the future. That should be a lightning bolt to all of us. Evidently, we also have to assert the humanity of the endeavour. We saw that with the students, we saw that with the colleagues in almost every session, the importance of knowing how to teach, knowing who we are, accepting good ideas from where they come. Donna Robertson brought up the diversity and the responsibility we have, the sense that we are all in this together, that we should have as diverse a profession as possible
because we serve a very diverse world. Finally, we commit to the young and the academy and the profession in assessing performance by success rather than by failure. You are not a great institution if you brag that you graduate 25% of the people who come to you: you are a failed institution. That is something we need to consider for a minute, for that changes everything.

One of the things that is happening in the United States - and I know this has all kinds of shaking implications, but it is being studied in a number of states, it is being studied in North Carolina for example - is that rather than funding a university by the number of people who enter that university, we are going to start being funded by the number of people who graduate from it. Let us think about what that means. Things will really go haywire. There can be all sorts of cynicism about that, about grade inflation and so forth, but the universities will not permit that and neither will the legislators. They are getting smart about us. As a result, graduation rates and licensing rates are things by which we will be assessed sooner or later. I have one final observation to make: this is one of my favourite combinations of slides. Things are changing.

Let us consider that slide on the right of a 1950s automobile: at the time, that was cutting edge technology in the years 1948-50 in the United States for the common automobile. It was the automobile design based on fighter technology, it was the first affordable automobile that could cross the United States at 70 mph on the freeway system. Everybody could own one: that was unusual. Now let us examine the car on the left. This car is not going anywhere at 50 mph, nor even 70 mph or 90 mph. An awful lot of what we do in education today is like that 1948 automobile or Chevrolet - it has the same body, really. We are getting dinged up and there are trees going up through the glove compartment and we need to be willing to accept the transformation that is in front of us. That is why this focus on learning and learning outcomes is so exciting; I think it is so appropriate. When Constantin Spiridonidis asked me to be involved in this, he received an immediate and enthusiastic response as I think this is the future.

**Pierre von Meiss, Switzerland**

Our session of learning outcomes and teaching methods, something which is of course the most important of all the three days, truly touched upon what I would say is the central concern of EAAE. Very often, we are also obliged to go into political propaganda in order to be heard by those who finance us and so forth. Here, on the other hand, we find ourselves at the core of what we as teachers are actually paid for: the teaching and learning. In some universities, even in ours at the moment, all of a sudden, teaching loses weight when compared to research. Research gains weight because it brings in money for the university. We face some problems with this under-evaluation of teaching as compared to research, for it means that several professors all but leave the classroom. However, in architecture at least, there is still a clear centring on the fact of teaching as related to learning or learning as related to teaching. This is a very good idea, but before I talk about it, allow me a parenthesis.

In reality, university professors are the only teachers without any pedagogical education. They get their jobs on the basis of any criteria except for their ability to teach. Even a kindergarten teacher has a pedagogical education but university professors do not. We therefore learn by trial and error - if we are ready to learn, that is, as some professors do not even do that! During the whole time when I was either a professor or a head of department, I forcibly encouraged to come into the school people exactly like the two pedagogues we were lucky enough to have here this time. We had Jean-Loup Castagne from Lyon, France, which was incredibly important.
for our session, the one on Learning Outcomes and Teaching Methods. The previous day we
had the extremely interesting presentation by Dimitris Mavroskoufis from Thessaloniki who
also brought a wonderful contribution. In a very modest way, he explained that he had tried
these things himself. From 50% of the 300 students of his class there were suddenly 80%, by
his making some fundamental changes. I have always maintained that we need pedagogues
because we are sometimes a little clumsy. We do not know everything; we may know many
things about architecture, but perhaps not so much about pedagogy. I therefore genuinely
appreciate the sessions that Constantin Spiridonidis and Maria Voyatzaki organised and the fact
that they thought to invite pedagogues to these sessions about education, not only teachers
in architecture. I would like to thank them and call upon everyone to show their appreciation
of this.

In addition to the two pedagogues, we then had a demonstration by Kostas Terzidis, who
showed us that giving a lecture or holding a conference is not only about delivering content, it
is also a piece of theatre. It is being an actor: you have to get the public interested - the public
meaning the students, although here it was of course the teachers. You want to motivate stu-
dents, but how can you do this if you do not present some sort of performance? I think this is
an important ingredient in order to go beyond mere teaching methods. It is not simply about
methodology: it is the way of delivering the information. Let me now return to the session we
had. It started out with the very dynamic lecture by Jean-Loup Castagne which he began by
making a division between didactics and pedagogy. He asked the question: what is didactics
and what is pedagogy? He discussed the theory of teaching and the theory of learning both
linked to the question of efficiency. Yet efficiency is not the central issue. The one is how you
do it and the other is what you do more. We appreciated this contribution very much. I would
however just like to ask him at the end of the morning to show some of his slides again. One
phrase he used in particular was, "it depends". This phrase could be seen as an answer to all the
questions that were posed here. One could only say "it depends" but on what does it depend?
It depends greatly on the context: where you are, in what kind of intellectual environment you
are and so forth. The answer becomes geographical, it is human; there is no recipe. Towards the
end, Jean-Loup talked about centring on learning. I feel that his suggestion to act on previous
knowledge, on the knowledge that already exists in the heads of students, was very much
appreciated by everyone. It is important to make the students active, to make them search,
rather than just providing everything for them. I have noticed the difference; I have also noticed
that there are times when bad teaching turns into good learning. These times are when the
student does not go to the lesson, but sits down and learns by himself. Then, he knows what he
is looking for, or rather he learns what he is looking for. If, however, he sits there and asks just for
the lesson to be delivered to him, he is displaying a passive attitude. Thus there are times when
bad teaching turns into good learning because fortunately the student leaves the classroom!

It is important to give rise to interaction, to support knowledge and organisation, and to insert
evaluation into learning. I noticed that in this community which is here there are still evaluations
whereby at the end of the semester students have to put their projects and their designs up
on the wall, and then go away the school for five days. On the fifth day, they return and there
is a sheet on the wall with the marks. There is no presentation, no exchange; I am amazed this
is still happening today! The Dean is here; it is a very difficult situation. The teacher talks to the
student for five minutes; he tells him why he has failed or why his work has been considered
mediocre. This is why I believe that evaluation of design could be one of the main topics of these
meetings, as could the need to act on the transfer of knowledge and to develop a reflective capacity in students. This is a brief resume of Jean-Loup Castagne's excellent presentation.

We also had a presentation by Jim Low which was also very interesting. Someone investigated throughout the schools in the UK what studio culture is. Yet why did they have to do that? It was to defend, in front of the university administrations, the belief that studios are useful and indeed necessary, that they are a central part of architectural teaching. But it will also be interesting to see the results of this investigation. He said that this is going to be finished and at your disposal by mid-December, so it will be on the web. We then had two other presentations which were more specifically about teaching environments. One that I will not go into, which was the one Juvenal Baracco, was the idea of a masterclass with having the students from the last year in the same studio. The other one was for a school organised in the same way that most of our schools are and showing results.

The problem that often here in these cases is that when the school presents itself, it shows results. Showing results is a very difficult thing because the objective result does not represent the values or the discussions or the process that goes on. One should therefore be demanding in what we want. It is like an exhibition: a school exhibits its designs and they appear to be just as good as those from another school. You go to a school and sit in on a jury and there you see what the values truly are, there the values on the projects are analysed, criticised, encouraged and so forth. The only way is not simply to sit in front of an object, but to understand the school and the values in its teaching. That I would say is very important.

We also discussed how to improve and in particular, how to improve learning by improving teaching, asking what an architecture teacher should do and what training on how to teach should be given. We were given a real lesson; it was very short, it only lasted one hour, but in it there was material for a one-week seminar. I would like to thank Jean-Loup Castagne for being so helpful to all of us. I think the most important thing is that, in order to improve learning, we have to improve our capabilities to motivate students. As James Horan put it, it is the idea of lighting a fire. If we can light the fire of motivation, we are halfway there!

Hansjoerg Hilti, Liechtenstein

The panel should always have students here and so let me ask two of the students from this morning to come up to the panel and give their final remarks. Let me ask Luke Butcher and Maria Anagnostou to come up to the panel.

Luke Butcher (student), United Kingdom

It has been challenging trying to listen to responses and to formulate my own answers at the same time. Firstly, I think that it is a good idea to have students on the panel, to be here and provide some feedback. I would like just to make a few points. When I think back to the first day that we arrived, I remember there were strange looks from people wondering what we students were doing here. It was perhaps an understandable reaction since we had not been here before. The question asked was: "But why are you here?" We would explain but essentially I feel we are here for the same reasons that you are all here: for reasons of learning and dialogue. We are here to experience new ways of thinking about teaching and learning. I think I have learnt just as much about the ways I can learn through listening to discussions...
Session 5 Synthesis and Conclusions

about the ways to teach. Hopefully, if students continue to attend these events in the future, the answer to the question "Why are you here?" will be obvious.

Another aspect, which seemed to be coming out from these sessions was that these are exciting times because of the amount of change that is taking place. It seems that in some ways, at the edge of the map, there is the traditional fear of "here there will be monsters" - because people are not sure how things are changing and what to expect. Yet for me these are exciting things, where the unknown should be seen as an opportunity to do new things, to take risks and to move forward.

This is related to another interesting idea. The idea of fostering bottom-up initiatives was mentioned, the idea of allowing students to take control whilst also thinking of input rather than simply output. It always interests me when you have the top-down approach for heads trying to foster the bottom-up for students. In some way, there are two poles and there is a conflict in the middle and it is interesting to see how this conflict is trying to resolve itself. This is seen a great deal in the UK, especially in government at the moment, where there is an attempt to foster concepts of localism from a top-down perspective. As a result, these two poles can be seen, which at first glance seem to be opposites, but which do actually work together and need each other in order to do so. For me, therefore, what has come out of this experience is firstly the different ways that learning takes place in institutions; moreover, I believe it would be beneficial if a little bit of everything we have heard can be taken away by everyone here and can be used to some effect in the schools.

One question I would ask, having listened to all these things, is: what action will have been taken in a year or two in order to make any changes that you believe to be necessary having heard the ideas here regarding different ways of doing things? Also, I would ask whether you feel change is actually necessary, which is something on which people may disagree. Finally, I would just like to make a general comment about the conference, if I may. It was something, which was mentioned earlier and concerns the way in which this conference is organised and these sessions are structured. Outside this room, we talk, over meals for example, and many ideas come about and are bounced about. I was wondering, though, how many of those ideas are fed back into these sessions? Many interesting topics are discussed outside the sessions, over lunch, or in social groups, yet how many of those ideas reappear within these sessions, or are debated in sessions the following year? I was wondering if there was room for these ideas to appear.

Maria Anagnostou (student), Greece

First of all, I would like to say it is wonderful that I have been able to see in person that there are so many people here who do put a lot of effort into how to improve teaching and learning. Before I came here, I had no idea that this is actually happening! I would like to refer back to something that we said in our presentation, which is that we must all - teachers and students - face architecture as a matter of life. This means that we need the experiences. I know that a university cannot predict every aspect of what a student can do or what interest the student might have or what project a student might create in order to be able to provide that student with the possibility of doing such work. This is why we need the professors to motivate us, to inspire us, to give us feedback from their experiences and to be there in every effort we make. I feel this last one is especially important. I think this why the professors need to listen more to
the students. I do not believe that there is not a student who does not have a great idea in his or her mind: the idea is there, it is simply that the student does not know that he has a great idea or a great interest that he can follow. A student needs the teacher to bring this idea out of him, to give him the possibility of expressing it and of eventually doing it. Collaboration between student and teacher is thus very important. Along with experience and practice, it is also important to see the architecture. The student must see what he is being taught, to be able to go out in the streets and see what the teacher is talking about: this is essential. The student needs to know that the teacher is listening; I think that is the most important thing of all.

Constantin Spiridonidis, Greece

I think now is the appropriate time to check whether the ideas and discussions which have taken place at dinners and over lunches, as Luke mentioned earlier, can find a way to be incorporated into these sessions, or into the system, as he said. The floor is open to participants.

Stephan Maeder, Switzerland

I have three or four remarks, which I would like to address to the panel. We have had very wise statements from very wise architects, like elderly statesmen. These comments are heard in other educational congresses, it is not so much to do with the business of architects. It is almost philosophy, but I feel we have to travel to the core of education again in the discussion. If we invite two students out of 120,000, I think it is very nice, but I also think that if we want to get in touch with students, we have to look for other ways of collaborating with them. To have only two students on the panel for perhaps an hour is not enough. It is however the first step in the right direction. Education in architecture is absolutely crucial. There are so many things to do, it takes almost a lifetime and in order to know all the eleven points, it requires 99 years! Yet, on the other hand, it makes it very easy because it does not matter, you just have to start, no matter where. We spoke about the crossover that artists and architects have and that they must know about very many things. The Americans in particular showed us the changes that will happen in the next year. Yet I believe there is a permanence in architectural education and also a solid core. This is space: the control of space. If you look around at what has been happening in the last years, there is a huge lack of quality in space. I think we should insist on maintaining this quality of space.

Secondly, I would like to mention something I have recently learned, and what I have learned here. In our school, we have a wonderful programme - it is elegant, good, valuable, consistent - but it was only recently that I understood that while this is good on paper, it is not good for the students. The students have to make their own programme, picking out what they need and what they should have. As a last statement, I would like to refer to the last session of last year when art was mentioned in Smithson’s comment about thinking about the making of something. This is something, which only exists inside the head, this act of thinking; we cannot open the heads of the students, we have to help them make their thinking evident so that we can discuss it. Also, the making is not the task of the school; it is something that will happen later. Bringing the ideas out of the heads of the students into something written, into a text, pictures or anything else, and to have a discussion about that, I think that is the real thing that we have to work on.
Constantin Spiridonidis, Greece

I am sure that the comment you made at the beginning about the students was meant as having a positive connotation. It is this point that I would like to answer, saying that, this being the first time we have had this kind of choice to have students, it was a very strange experiment. We must consider that it was a random selection of three of them amongst thousands and to see what the impact on our discussions would be. It appears that there has been a highly significant impact. For this reason, Colin Pugh told me before he left that he would carry out an investigation at European level in order to define the different bodies of students which exist in different countries so that one will have a spectrum of the different forms of student representation. That may be a tool in order to make the invitation of the students more directed and with a definite logic behind it. That was an answer to your comment.

Per Olaf Fjeld, Norway

Once again, thank you for the conference. It is always interesting and challenging to be here. There is just one small notion that I would like to pick up on which I sense is different from previous years, but about which I feel very fortunate and also very strongly. It no longer seems that we are searching for the best, to be bigger, to be larger, to compete and all these things that we have discussed so many times before. It is more about the way that we have the capacity to search into an architectural depth again. In other words, newness is not enough, newness is not necessarily anything in itself any longer; we may have believed in that ten years ago. We are now discussing our capacity to bring our notion again into the basis of architecture, and what type of capacity architecture has; in other words, to take our discussion into an architectural depth. I think that very much brings a challenge into our teaching and our learning. I am happy that one has been able to see the introduction of that challenge over the past few days. I would like to thank you for that.

Hermann Neuckermans, Belgium

I fully endorse the presence of students here and I congratulate you on having been able to arrange that. As I know, the network of the Heads of Schools does not sponsor students. I would here appeal in public to the EAAE to think about the idea of launching some initiatives to sponsor some students who, as a reward, would be here. I am not sure how the students could be selected but it would make EAAE more visible to students and at the same time fulfil our aspirations here.

Constantin Spiridonidis, Greece

I think that it is an interesting idea which I fully support and not only because the network cannot finance the students’ mobility.

Hansjoerg Hilti, Liechtenstein

I would like to present you with an idea; this is not my idea, I heard it from a member who was new here. For newcomers, it is not so easy to get to know everyone else. They come in and
they see that all the elder statesmen say hallo to each other and embrace each other, while they stand to one side. The idea was to have something like a speed dating session right at the beginning; I mean this seriously! A speed dating set-up would enable a lot of people to get to know each other because for people who are new here, it takes them a couple of years to feel as though they are a member. That is the idea.

**Constantin Spiridonidis**, Greece

I have to admit that is a good idea; we did have in mind this speed dating and one answer to it was that, if you noticed, there were many people on the panels who are here for the first time. That is to say, people who were coming to this meeting for the first time were invited to be on the panels. Not all of them replied in time, so it was not possible to have them and it was unfortunately necessary to replace them with others who are already known, but that was the reason behind our original choices. I think it was successful because without causing these people too much stress - I hope that everyone agrees there! - they gave us the opportunity to get to know them and to learn about their schools and their way of thinking.

**Marvin Melecha**, USA

I have a suggestion. Over these fifteen years, I have become a really dear friend, especially with James Horan and one of the great things in my life is to have made that friendship. He has been to my school and has been annoying me among my students several times! We all know him to be a wonderful storyteller, incredibly articulate at the table when it comes to discussing difficult issues, able to move a discussion - we all know him for that. This time around, however, we also know him for his incredible ability to convey an idea. I think there is a lesson here and perhaps a wonderful addition to this conference would be to invite members of this group to present their work. We talk about the core of architecture. I appreciate the expression that the core is about making space or about making some part of architecture, whether it is that or another piece of it. Yet we frequently forget to engage each other on the level of our work; James’s exhibition is a powerful reminder that we have all gotten into this room because of our work one way or another. I congratulate Constantin and Maria for putting this event together and I would like to thank James because I know what it takes to put your work up in an exhibition.

**Constantin Spiridonidis**, Greece

Thank you Marvin for putting this issue on the table. I was thinking how we have to recall it, because this extension of the activities of the event as such with something which is autonomous yet articulated with it was another experiment that we tried to run at these sessions of the Meetings of Heads. There was always the question of how this would be accepted. The feeling is that it was accepted very positively and I am glad that you concretised this. Beyond the friendship that we have with James and the honour that I would like to offer to him for his contribution to this event over the previous years, we would like to explore the possibility of presenting cases. These could either be from schools or individuals, however it could be arranged. The aim of having them would be that they could articulate better the discussions that we have in this room by giving more real examples and expressions of these kinds of outcomes, either of personal work or the work of schools. It is an idea, which remains open;
we have to see how the finances are, for this is of course another issue which we would need to investigate, but I feel this would be a positive step.

**Stephan Maeder**, Switzerland

I feel this is a wonderful idea, but it would be better if the work was not only of one person, because I know so many good people, but it could be a collection of drawings instead of papers and they could be exhibited the first evening.

**Constantin Spiridonidis**, Greece

This is something which had crossed our minds before; the problem, however, is that it is too hard to chase it up if there is not the personal involvement of the people in the exhibition. James was here and he worked on it and did everything. I do not imagine that we would be able to do all this ourselves, so help would be needed for this to happen. If there is a feeling that something like this should take place, then we would have to give the people exhibiting from the schools the means to make the frames, to mount them on the wall, to keep an eye on them and so forth. It is not therefore simple; it is very nice to do, but it is difficult to achieve. Investigating the practicalities of this, we can see they are very complex and this needs to be kept in mind.

**Nicolau Brandau**, Portugal

I would just like to make a small comment. I have been coming here for the last nine years and in my opinion, this meeting was much more successful in some ways because all the themes under discussion were much closer to our day-to-day work as teachers. The others, in contrast, were much more abstract, speculative and so forth. This one was much more to do with our everyday experience. We are teaching, the students are learning and that basically is what it is all about.

**Constantin Spiridonidis**, Greece

If there are no more comments, then let me say that we would both like to thank you all very much for being here. There were 130 participants in this meeting, many of you are not on the list of participants and I would like to ask those of you who are not, to send us your details to add to the list.

**Urs Hirschberg**, Austria

As president of the EAAE, I would just like to take this opportunity to thank you on their behalf for this event. I am also a little embarrassed this year because I have found myself attending fewer of the sessions than I would have wished to. I do not know how much this has to do with becoming president - I must emphasise this: I was not spending the time swimming or shopping for souvenirs! - I am more tired than I usually am after these conferences. I feel now with this closing session that it was another wonderful conference and it was the perfect opportunity for the EAAE to hold their general assembly; there could not be a more wonderful place to do this. From all of us, I thank you both very much.
Constantin Spiridonidis, Greece

I would again like to thank everyone for attending and for all the fruitful discussions that we had. I would also like to express our sincere thanks to James Horan for his wonderful work in a very apocalyptic way; it was an extremely pleasant experience. I would also like to thank those people who came from a very long way away, starting with the most distant people Juvenal Baracco from Lima, Denise Pinheiro from Rio, Margarita Green from Chile, Ted Landsmark from Boston, Kostas Terzidis from Boston, Donna Robertson from Ohio and Mike Monti from Washington. Sincere thanks for coming such a long way to be with us. And a special mention to Marvin Malecha who has been participating in these conferences for fifteen years and now seems to us like an honorary European!

Denise Pinheiro, Brasil

As we are mentioning people from far abroad, especially from Latin America, allow me to say a couple of things. My other colleagues have left, but I think I can speak for them also. I would like to thank you for the invitation. It was a very enriching experience. In Brazil, we have many organisations, but I do not think we have an organisation such as this where the deans of the Schools of Architecture from so many countries come together for several days to discuss common problems. There is obviously one day for the EAAE General Assembly and political things of the association but what we can see from abroad is that the aim of the meeting is to discuss issues and to advance the teaching and learning of architecture. Even though there are many problems, what you are talking about here is the same for us. I learned a great deal and I would like to thank everyone here very much.

Constantin Spiridonidis, Greece

Thank you Denise for being here at this meeting. We would also like to thank the students. They had to overcome a lot of anxiety at being exposed to an international conference of heads of Schools of Architecture and their representatives. This anxiety could be detected from the number of questions I had to answer before persuading them to participate: very many emails were sent back and forth. I think the fact that they are with us means that this communication was successful and I would like to thank them for the efforts they made in being here with us at this session. I would also like to express our sincere thanks to Lou Schol for the help she offered us during the preparation for the meeting and the realisation of the meeting. Can I also offer sincere thanks to Ahmed for becoming the official photographer and for so much else in the successful running of the meeting. Last but not least, grateful thanks to the two technical support helpers, Kyriakos for the audio visual and Manolis who is responsible for everything else; they smiled throughout and I thank them for their great help in very difficult circumstances.

Hansjoerg Hilti, Liechtenstein

Many of us, as you can see, worldwide, are very old men; it was mentioned quite often that some of us are near to retirement. I am not sure if I will be here again but I have been here roughly ten to twelve times. Many years, I started to get tired in the afternoon and I wondered
whether I should I go again the following year but then in spring I would start to look forward to the conference and was always very happy to come. It is like coming to a family. I would like to thank everybody and especially Maria Voyatzaki and Constantin Spiridonidis for organising this, because they gave me a professional family and I would like to thank them for that. It is a wonderful feeling to be here with all of you.
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