

Inspiring from the Works of Other Architects in Reinforcing Students' Creativity

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Abstract

The present article investigates "the role of influences of other architects' works" as a learning tool in order to improve the creativity of the architecture students. Firstly, the definition of creativity is discussed and then the view points of creativity in the sphere of architecture follows. Secondly, a model is presented on the need of the presence of creativity in the deep layers of a creative architectural work. In the presented model, the need of the element of creativity, at least in three major phases in the deep layers of an architectural work, will be explained.

Afterwards, the concern of "influences of other architects' works" is discussed by considering two main states of conscious and subconscious forms and then the article concludes that unlike the orthodox view point of some architecture teachers who believe that "influences of other architects' works" blocks the innovative architectural ideas, it can play a major role in at least two stages of the presented model of creativity and increases the possibility of reaching creative solutions by the architecture students.

As a supplementary, and to clarify the point that the treatment of teachers for the so-called influences has to change as students' cognitions of architectural works change, the concept of "cognition" itself will be discussed.

It must be mentioned that in some cases, the author has made use of polls containing the views of both the teacher and the student about the case study. These polls were answered by 10 architecture teachers of Tehran University and Shiraz University of Iran who had a broad experience in teaching the architecture material and also 40 students who were recently graduated from the colleges.

Keywords: creativity, architecture education, precedent-based design, cognition, the process of architectural design

In the present time, through a day by day progress in public media and information technologies like satellite TVs and the Internet, the subconscious influences on students made by other architects' work – either local or international – has been a challenging issue in Iranian architecture colleges. Sadly, by following orthodox view points, not only have problems been doubled but the quality of architectural education has also been challenged for the worse. As it may be expected, the side effects of this educational problem have affected the architectural businesses and have resulted in low-level imitations which have degrade and threaten Iran's contemporary architecture. (Zakeri, 2007, p107)

It seems obvious that a good resolution for this issue in architectural colleges, both fundamental and wise, must be investigated thoroughly. A good solution not only answers the questions of students and teachers when they face the issue, but at a higher level will suggest solutions in a wise, true, and constituent way for what that many professionals believe is threatening Iran's contemporary architecture system.

Due to the above challenges, the need for a deeper and more thorough investigation of the "influences of other architects' works" has to be clarified. The main purpose of this research is to measure how the subconscious influence of other architects' works, that results in blind imitations in architectural practices, where no teacher can review the works and turn it to a chance for creative inspiration that might create a better architectural education.

The need and importance of the issue

In the current conditions imposed by globalization and the everyday progression of information technologies like satellite TVs and the Internet, the process of familiarization and collecting information about architectural works for the architect–has achieved a new form and speed. If in the past this process was subject to voyages and personal encounters, or information being obtained from the books that were published *after* an architectural landmark was born, then today we clearly see that even before a project starts, architectural images are easily available both from the media or the Internet for the public to see. Such incomplete visions which often have immediate influence on the young minds of architecture students has caused very unfavorable effects on the quality of education in most architectural colleges of many developing countries such as Iran in the last decades. On one hand the youthful architecture students believe that they belong to modern times and have a

burning desire to see the works of so-called avant-garde architects and look forward to seeing as many as works as they can from the media. On the other hand a lot of architecture teachers, due to their personal rules of creativity development, do not like what happens to their students. They think it may lead to blind imitation which is harmful for Iranian traditional architecture. They may suggest that students should be allowed a free and open-ended regime in which free expression is encouraged.

Figure 1 compares the interest in using internet to see the works of western pioneer architects, both for the teachers and the students. The figure partly shows the doubts and disagreements of many teachers regarding the issue. In the same time, most of the students showed interests to the issue indeed.

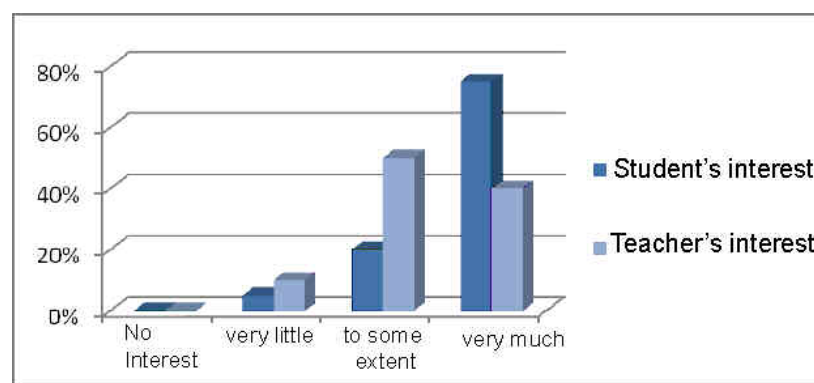


Figure1) Source: author

The point which underlines the issue of influence from outside sources the most are the statistical results which emerged from the answers of the newly graduated students when questioned about their use of other architects' works in their university projects. It is interesting that 83% of them confessed that they had had this experience before (figure 2) and even more interesting is that 70% of these people preferred to hide the issue from their respective teachers and only 30% of them - because of the special educational system of the teacher and aware of his agreement - told their teachers that the project had direct influences from the outside. Because some teachers believes that students have to solve real-world problems and they should pay attention to the acquisition of knowledge by visiting other architects works so their students feel free to be honest with them. But most of teachers do not want to accept the statistical results and try to limit their students.

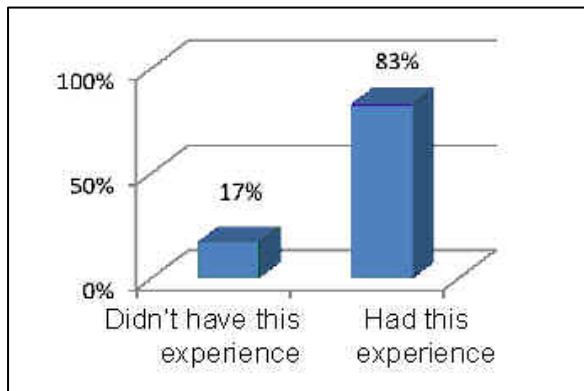


Figure2) Source: author

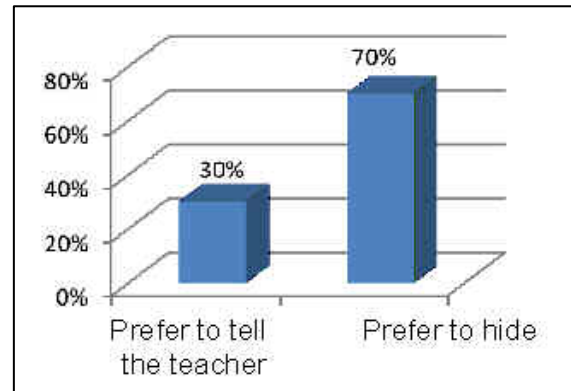


Figure3) Source: author

These results show that nowadays it is nonsense to discuss whether students are 'allowed' to be influenced by other architects or not. Whether we like it or not, many students are, and if they feel insecure with their teacher they will hide the issue from him/her (it is very natural that no teacher can claim that s/he knows every single architectural work on the planet). Unsurprisingly, 60% of the teachers said that they cannot completely recognize the possible outside influences on their students' works.

So, it would be better that in such situations, instead of disagreements or rows, we look for a solution not only to neutralize the threats on the quality of architectural education and the creativity of the students, but with the aid of good management of this issue we can also turn it into a chance and use it as a learning tool to develop the creativity of students.

Now the questions arise. Is it possible to use the influence of other architects' works as a learning tool to develop the creativity of architecture students or not? If the answer is in the positive, how can it be done? And at every stage of education, and according to the students' cognition, how it can be managed in the best way? To answer these questions, firstly we have to clarify a definition of creativity to know its origins, and to define what in particular 'creativity in architecture' means so that we can suggest methods to deploy the influences of other architects' works as a learning tool to develop the students' creativity.

Creativity and finding its roots in the history of art and aesthetics

Dr Shahram Pazouki believes the first person to talk about creativity in the history of art was Leonardo da Vinci. Before him, the only thing that mattered was mimesis not creation. The artist was someone who was subject to be an explorer instead of a creator. Da Vinci said for

the first time that "the artist has to create instead of to imitate." From this time on, little by little, the focus on "subject" began. (Pazouki, 2005, p97)

On the other hand, one can say that subjectivity of creation began in harmony with the introduction of the modern philosophy by Descartes. In 18th century, when for the first time the term fine arts was introduced, art began to detach itself from industry, and 'creativity' began to show itself. In modern philosophy, creation stood facing the ancient concept of mimesis. When the arts, became subjective, then creativity in the arts found its meaning. In mimesis, the artist has an eye on the world where in the modern era, the artist looks inside himself instead. This landmark concept built by Descartes was then completed by Kant. In his *Critique of Pure Reason* he wrote that "the aping imitation must be substituted by creativity. If the arts want not to be imitative, they have to rely on the human subject. It means that they have to be the creatures of the human mind and for this genius must be developed."(Kant, 2001, p 188)

It is the case that artistic creativity which we talk about it today with ease, has been never discussed in some eras when the concept of creation was restricted to the High Almighty himself. Terms like 'creation', 'taste', and 'influence' are the fruits of modern thought and known only since Descartes introduced subjectivity into philosophical terminology. But today, creativity is a keyword in clarifying the process of design and creative education. Re-understanding and defining the word creativity can shed some light on its role in the process of designing. The famous Persian writer Ali Akbar Dehkhoda defined 'creative' as a noun for the Almighty and 'creativity' as something which can result in innovative forms. Omar Farouq defines creativity as a unique answer, both better and more suitable, to a problem. The "Advanced Dictionary of Psychology of Knowledge" defines creativity as "the power to find unordinary and high quality solutions for problems." According to the above, a creative person is someone who faces the data that every one of us may face, in a new way. (Mahdavinejad, 2005, p.58)

Creativity in architecture

After World War II, social scientists and engineers both concluded that for more optimization and productivity, creativity must be introduced in business and to do this, much discussion took place. During that time there were two viewpoints regarding creativity. One framed creativity as science and believed that it could lead human kind to progress and the other did not tolerate any scientific aspect and framed it through a totally metaphysical approach. Architects did not take part in the on creativity in the mid 50's where poets, writers, painters, sculptors, scientists, social scientists, and psychologists were the main discussants. Thus,

most of the work done in this sphere has not been especially related to architecture and the relationship between the two is not worthy of note. (Antoniadis, 2004, p37)

Most of the theory available on creativity is either purely scientific or purely artistic. Alvar Alto, observed that architecture is a vast and multi-dimensional system that if we want to be creative in it, then we have to have a hand in a number of fields – some pure artistic and some pure scientific (like technology, structure, material, and equipment) and some professional – and be creative in such fields.

If we want to categorize the view points of architects and architecture theorists about creativity in architecture then we can establish two main categories:

1- The first group knows creativity as a sacred gift and prefers not to speak about it at all. Architects like Luis Sullivan, Frank Lloyd Wright, Alvar Alto, and Le Corbusier are in this group. As an example Frank Lloyd Wright defined the creative imagination as "the humanistic light in the human kind" and identified creative entities as they were related to gods. (Antoniadis, 2004, p39) According to Frank Lloyd Wright, Alvar Alto, and Le Corbusier, imagination and creativity is sacred and is clouded in metaphysics. Now it is obvious that why these giants disagreed with psychological research that tried to outline scientific formulas for their sacred imagination and creativity.

2- In the second group, people like Brian Lawson, Barnes Wallis, and Santiago Calatrava can be seen as the defenders of creativity as a learnable skill. They identify the creativity in architecture as a fine search of problems of design on one hand, and finding the precise, suitable, and even unique solutions for such problems on the other. Barnes Wallis said once that "I never had a novel idea. My deeds were just solutions." Santiago Calatrava known as a creative architect says that "all my projects were answers to specific problems." (Lawson, 2005, p176)

Today the second group has won the public's interest. If we accept the second viewpoint then more or less we agree that creativity in architecture is something that can be taught and has a direct relationship with the process of researching the problem and the procedures for its solution and we do not have to meditate to find an answer from the heavens. To put it simply, in this model of creativity, the general conditions for one to create a work is that the first step is to discover the designing challenges with precision and then find precise answers for the problems.

The term 'creativity in architecture' like any other, has both a surface and a depth. The surface itself is not enough to be explored. What we see as a creative architectural work is, in fact, the surface of the phenomenon which has been manifested as a solution. By having an eye on 'man's need' as the main cause of the formation of any architectural work, a creative solution follows when 'design problems' are included in them. In the next step, the architect enters as the subject and through the use of 'design tactics' searches for a solution of the given problems.

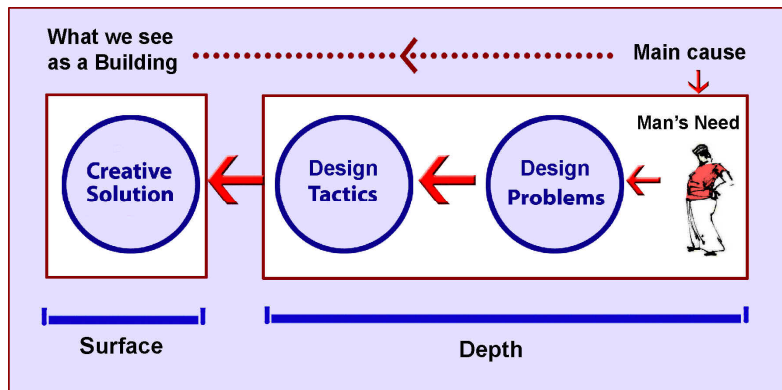


Figure4) Source: author

Thus the first stage, which has a vital importance, is to search and to identify problems which many have debated. Books like *"Problem Seeking"* by William Pena, and *"How Designers Think?"* by Brian Lawson, can be counted here. In my experience, Lawson's is one of the best and most comprehensive models of a variety of many designing problems (**Figure 5**).

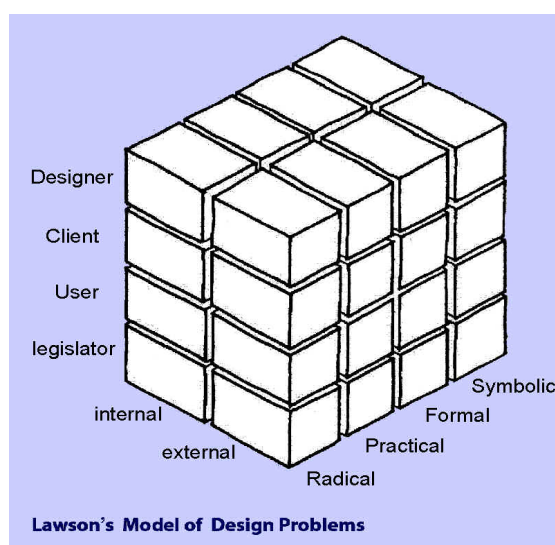


Figure 5) a model of design problems. (Source: Lawson: 2005)

For example, in figure 5, the group of people who can be counted as the origin of the problem seeking process can be categorized in four different subsets, the designer, the client, the user and the legislator. With more precise and detailed identification of internal or external problems – which an architect feels necessary for his project – the possibility of reaching a creative solution will be higher.

But this stage of problem identification itself cannot guarantee creativity. The next important step which has to be studied in depth is what is known as design tactics which are adopted to reach a creative solution. Tactics like Generation of alternatives, parallel lines of thoughts, or telling a story, can lead to a solution for the problems (Lawson, 2005, p212). By the use of different tactics one can find a number of solutions for any given problem. This is because the complexity of the designing process "can be divided, like any other problem, into smaller parts and by solving the problem parts one by one, then the general solution will be in hand." (Mahmoudi, 1999, p77)

After the stage of problem seeking and using design tactics, in the next step we must assign priorities, and also analyse and synthesize the differing solutions of the different problems to reach a final solution. A final solution usually takes shape by choosing from present solutions, or it can be a hybrid of them all.

Whilst creativity is also present at two previous stages, both in problem seeking and design tactics, it has to be said that in the final solution phase (see *Prioritization and final Analysis and Synthesis* in figure 6) that it reaches its peak.

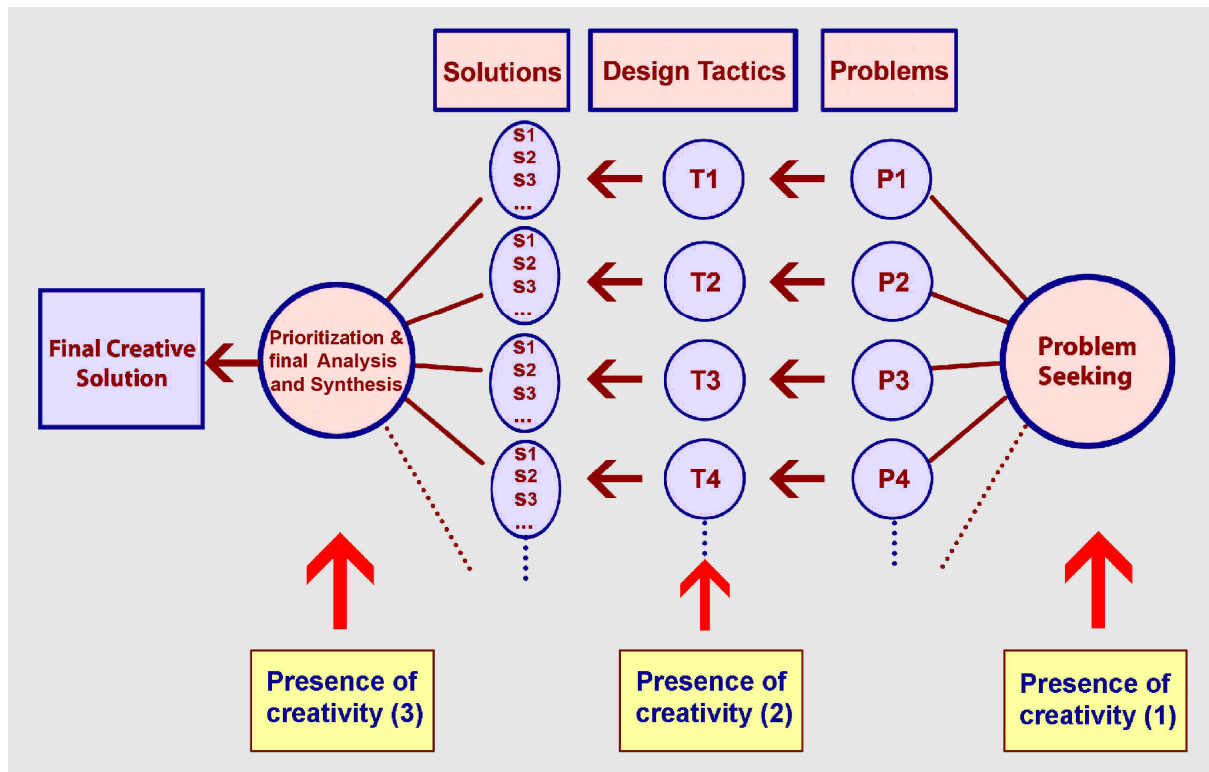


Figure 6) a simplified model which shows the importance of presence of creativity in the deeper layers of a creative architectural work. (Source: author)

By making use of the model of creativity presented a critique of many so-called 'creative' architectural works is made possible. For example; in critiquing the measure of creativity used in the design of The Guggenheim Museum in Bilbao by Frank Gehry we have to note the problems which arose in the problem seeking phase. We have to see whether he was creative in the problem seeking phase or not. Then it's the tactics turn, and finally the final solution that he presented. For example we may find that in the case of the form of the building used to solve the problem of "attracting tourists to an abandoned city" the project has to have a high level of creativity, but in many other aspects we may see nothing. For example in the case of construction's cost to solve the problem of "inexpensive building" as a practical issue, the project has no particular creative solution.

The role of the influences of other architects' works in reinforcing creativity

The main issue of this paper is to determine at what level students must be familiar with previously made designs in order to develop their creativity.

In particular an issue here is the extent to which we should make design students aware of previous design work. One school of thought may suggest that students should be allowed a free and open-ended regime in which free expression is encouraged. Another might argue that designers have to solve real-world problems and they should pay attention to the acquisition of knowledge and experience. (Lawson, 2005, p155). In this field it is necessary to be familiar with Hertzberger (1991), Laxton (1969) and Kneller (1965) who salute the second school.

In his *Lessons for Students in Architecture*, Hertzberger wrote that:

Everything that is absorbed and registered in your mind adds to the collection of ideas stored in the memory: a sort of library that you can consult whenever a problem arises. So, essentially the more you have seen, experienced and absorbed, the more points of reference you will have to help you decide which direction to take: your frame of reference expands.

(Hertzberger 1991)

A study of design education in schools (Laxton 1969), concluded that children cannot expect to be truly creative without a reservoir of experience.

Kneller also clarifies, when he talks about creativity, that:

"One of the paradoxes of creativity is that, in order to think originally, we must familiarise ourselves with the ideas of others . . . These ideas can then form a springboard from which the creator's ideas can be launched. "

(Kneller 1965)

Now the point of my argument is that the influences of other architects' works can be categorized into two main parts; which are conscious and subconscious influences. By this I mean if the student has used the solutions of other architects to solve design problems consciously or whether his own subjective experience, subconsciously and without his awareness, helped him to find the solutions.

A close relative to the phrase 'subconscious influence' is the term 'schema' in Gestalt psychology. Schema was firstly used by Bartlett who defined it as "the representative of an ordered and active set of past time experiences which is used for organizing and explanation of the future phenomena" (Lawson, 1384, p157). Gestalt psychologists paid specific attention to the way that the image of the outside world is represented inside mind. The Schema itself can be regarded as a form of subjective image of the individual's mind.

One cannot deny the role of schemas in creativity and the process of creative design as it has a direct relationship with the architect's experiences. The architects, consciously or subconsciously, makes use of their own experiences when they design a work.

As mentioned before the point at issue was, and is, the conscious influence from other architects' works on the architecture student. As I have previously observed a majority of the teachers are against this kind of influence and they see the inspiration of other architectural works as a blockage to the students' brilliant and creative ideas. On the other hand, according to the polls' results, most of the students, found these influences useful in development of their creativity though (figure 7). It has to be mentioned that the teachers' views differ depending at which level of the designing process the students are on. (figure 8).

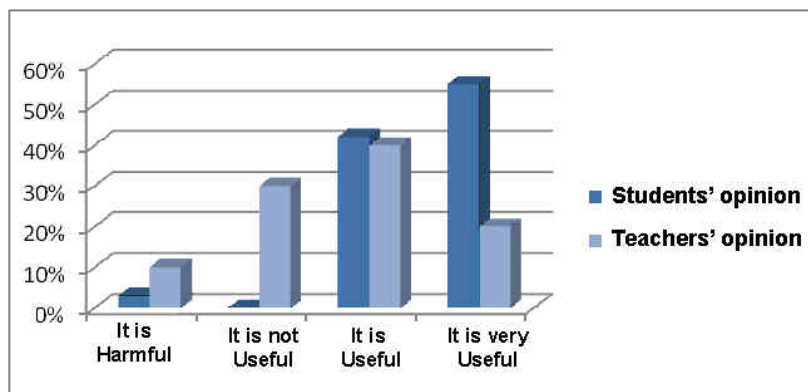


Figure7) Source: author

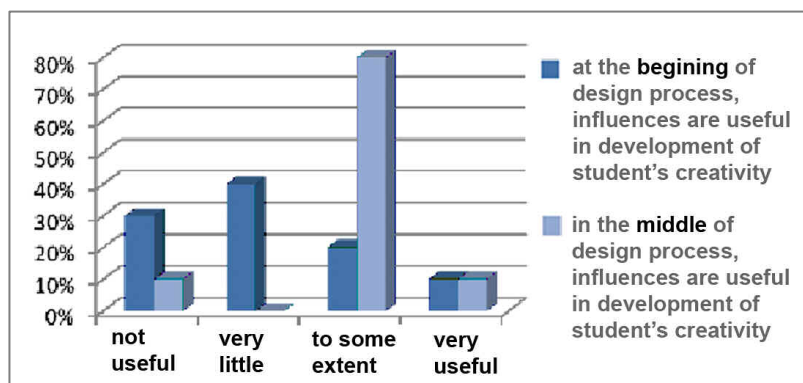


Figure8) Source: author

To briefly return to figure 6, it is clear that if the students use their inspiration based on other architects' works fairly, and if teachers manage and control this procedure, then no harm can be attributed to it and instead it can be used to improve the students' creative spirit. By looking at the model, which described the need for creativity in the deeper layers of a creative architectural work, we can find that inspiration from, and evaluations of, other architects' works can invoke feedback in the students' minds which can be useful in at least two stages of the model presented to improve students' creativity.

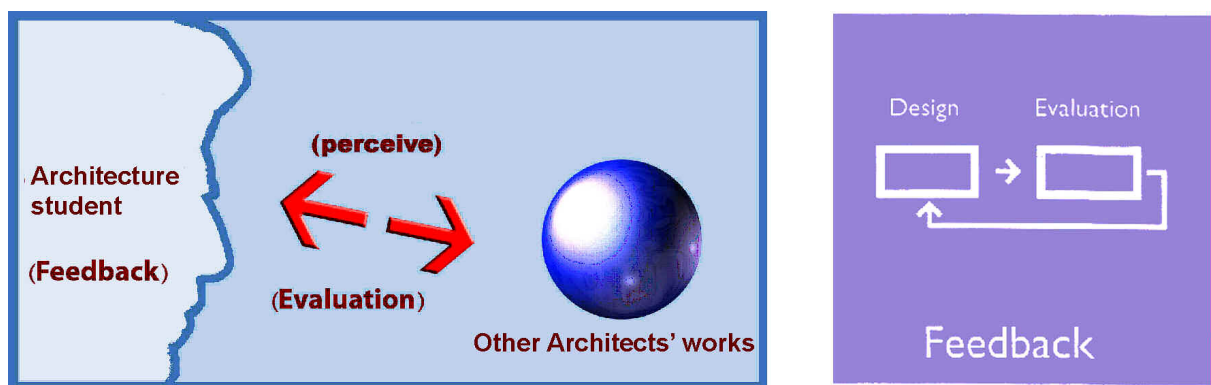


Figure9) Now by a look at the model, which described the need of creativity in the deeper layers of a creative architecture work, we can find that inspirations and evaluations of other architects' works can invoke feedbacks in the students' minds which at least can be useful in two stages of the presented model in the figure 6 to improve students' creativity.

Source: right side: Pena 2001, left side: Author inspired by The Three Worlds by Popper.

1. In 'problem seeking', these feedbacks, inspired by other architects' works in the primary stages of designing, can be very useful for the students. This can be used for example, to discover the problems which might be unknown to the other architects or it can lead to wrongly diagnosed problems by other architects or even answered incorrectly. Because precise problem seeking is a priority in reaching a creative solution, then such inspiration can play a major role in increasing the possibility of reaching a creative solution.
- 2 In 'design tactics', together with 'Analysis and Synthesis' creativity evoked by inspiration, can be identified as a useful tactic that leads to improvement.

So, if the model presented in figure 6 is accepted, one can hardly reject the role of influences of other architects' works in the primary or middle stages of designing process. Alternatively, if students face their teachers' orthodox views, they prefer to find a way out of the complex

problems' labyrinth by use of other architects' works; there is the possibility of choosing a wrong method, for this pseudo-solution increases and may lead to blind imitations.

The students' way of cognition in leading their way of inspiration is important

Many theories have been developed to describe the types of cognition and their importance in problem identification and their respected solutions. In problem seeking and the design process, the Gestalt school has the upper hand in this kind of treatment for design problems. The Gestalt stresses cognition and as a result underlines the importance of thought.

The cognition factors of human thought have to do with becoming aware of and understanding classes of objects or ideas. This analytic ability to classify and recognise is of the utmost importance in everyday thought. For example, it would not be possible to study the differences between the structural systems employed in Romanesque and Gothic churches unless one could first recognise and classify such buildings. Guilford (1956) believes there are three ways of developing such a class system depending on whether the figural, structural, or conceptual content is used. Thus one might recognise a class by its figural properties. Children may initially recognise all four-legged animals as cows and only later look for further detail such as horns or tails. The second system of class recognition, by structural content, requires some functional relationship to exist between class members such as in the 'complete the series of symbols' type of IQ test question. Finally, one might recognise a class conceptually, such as architects or lawyers as being a group of people having passed certain examinations. For Guilford, then, these cognition factors influence our ability to define and understand problems whether they are to do with the appearance, function or meaning of objects. As Guilford (1967) himself points out, problems of figural and structural types abound in design and the ability to discriminate figural and structural classes is likely to be important to the designer. (Lawson, 2005, p 139)

The questions that future research can build on includes whether the understanding of the student of other architects' works remain unchanged in the university and after graduation, or whether the influence of such works on students depends on their ways of perceiving them? Is it possible to deploy an educational strategy to change the students' way of cognition, and use inspiration as a positive learning tool?

Comprehensive answers demand comprehensive future research, but as-is we can say that the student's way of cognition, from the day s/he enters the university to the day s/he leaves

the campus, can alter from figural to structural and in the end lead to conceptual cognition. As an example new students may understand an architectural work as figural, because at this level they cannot recognize the quality of the works, or are unable to distinguish between the different forms of the buildings, and their comments on the works may not stand that much above what ordinary people may say. Step by step, depending on their courage and courses they may pass, they begin to get familiar with different architecture schools and obtain some structural cognition and by discovering the 'hidden' ideas and theories behind the physical structures they step into a conceptual cognition of architectural work. One cannot precisely assign a cognition level to a given study period for a particular student. The students' cognition will change through factors like; how and what s/he studies or the circumstances that s/he grew up in. A first year student may have some structural or conceptual cognition where a fourth year student may have become stuck in figural cognition. What is clear is that figural cognition always appears during the college period. How it appears and by how much depends on the availability of other forms of cognition developing inside the student.

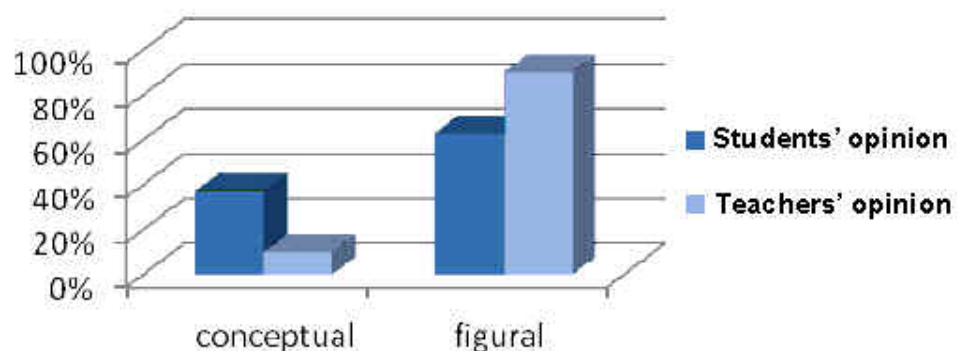


Figure10) Source: author

At each level of their development the student, either consciously or sub-consciously, may be under the influence of architectural works. By combining this influence with conscious thinking strategies like adaptation, imitation, inspiration, and developing critical thought and definitions and basic practices of creativity, we can suggest a theoretical model for creative inspiration. Using this model, we can change the three forms of student cognition, use it to improve the students' creativity and turn a perceived threat into a big chance.

Conclusion

We have seen so far that if we consider creativity as a layered phenomenon, to have a creative work on the surface needs problem seeking and design tactics in its layered depths.

Thus, there is no need to reject influences or inspirations from other architects' works as threatening according to our orthodox views. It can be used creatively through good management in the deeper layers of creating an architectural work. The role of influence can be highlighted in the problem seeking and design tactics layers which are the most basic and deepest layers in the making of a creative work. However, as mentioned earlier, an attempt to monitor the changes in the student's cognitions of architectural works, as an introduction to inspiration or influences, must be included.

So it is now clear that student's conscious inspirations or influences from other architects' works which can lead to blind imitation without a good management or by enforcing the orthodox views and threaten the architectural education, can be turned to a chance by a bit of care and attention and it can be used as a learning tool to improve the students' creativity.

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