

Original article

The Impact of Knowledge and Creativity in Architectural Design Studios: Architecture & Urban Planning Program at University of Tripoli Alahlia as A Case Study

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ABSTRACT

This paper focused on analyzing and exploring the role of knowledge in instilling and developing creativity within architectural design studios as an essential element of architectural education. It answered the question of the research problem: "How can the program present knowledge in a way that helps the student transform theoretical knowledge into practical practice and creativity in the architectural design studio?" It's based on two scientific approaches: the inductive approach and the systems analysis approach and using the latest research findings in international research databases on the topics similar of this topic. The importance of this research paper lies in its contribution to solving the problems of architectural education. The research concluded a set of realistic, applicable results and succeeded in providing a vision and an integrated framework on the factors in the transformation of knowledge into practical practice and creativity, the policies and procedures of the educational program that support the transformation of theoretical knowledge presented to the student into practice and creativity, the practices that the studio professor must take into account to support the development of Motivation, ability to learn and creativity. The research recommended planning to implement its findings through developing policies, procedures, and practices for the educational program and the architectural design professorship. also recommended further studies to reveal the reality of implementing the research results practically in the architectural design studio in the architecture program within the University of Tripoli Alahlia (UTA) and architectural education programs in Libya.

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INTRODUCTION

The design studio has a significant part in the educational process for the architectural student, and the student's inability to transform theoretical knowledge into design or practical practice is one of the most important problems in architectural education, and without neglecting individual differences in the ability to create, not everyone who possesses knowledge

is a person capable of transform it into practice and creativity. Also, the student's lack of the required knowledge and adequate training are two fundamental reasons that obstructs the student's architectural creativity [1].

"Architectural creativity" plays an important role and represents a fundamental and pivotal goal in architectural education and a basic requirement for the success of the process. The process of architectural education is a complex process whose creative demands must be supported by an understanding of art and other sciences. Therefore, the architect must be equipped with knowledge of many branches of science related to art. This knowledge is mainly built by both practice and theoretical knowledge [2].

"The architect should be equipped with knowledge of many branches of study and varied kinds of learning, for it is by his judgement that all work done by the other arts is put to test. This knowledge is the child of practice and theory. Practice is the continuous and regular exercise of employment where manual work is done with any necessary material according to the design of a drawing. Theory, on the other hand, is the ability to demonstrate and explain the productions of dexterity on the principles of proportion"[3]. The topic of the architect's ability to achieve architectural creativity and use the technological tools of our time has gained great importance in the past years at the professional level after the profession has witnessed massive and rapid technological changes that can be used in many architectural applications in all stages of architectural work.

Previous studies revealed that the skill of creative thinking is acquired first by possessing good knowledge at the right time in an appropriate manner, which results in an increase in the student's ability to complete his project. There is a strong positive relationship between the internal state that provokes the learner's behavior and pushes him to pay attention, focus, and engage in the educational situation with directed activity, and continue this activity until the learning and achievement process is complete, which is known educationally as learning motivation [4]&[5].

- **Brief Review on Architectural Education:** Architecture is one of the oldest and the most significant branches of education that started early throughout all countries in the world. It is in fact a multi-faceted field of studies because of the unpredictability of the social and cultural aspects that influenced it.

In many architecture programs, students spent much of their times (approximately in between three to five hours twice a week) working on their design project in the design studios. Students must put tremendous time and efforts to produce creative design. As an architecture student, ones must also have an iterative behaviour. Iterative behaviour is needed in the architecture studio learning because it helps to assist in the development of critical thinking and better design ideas [2]&[6].

The evaluation is done by dividing the work into three phases: the first one is the information gathering stage, the second phase is discussing design ideas and preparing initial designs, and the third is preparing the final drawings and final output of the project. moreover, to a midterm and final exam to test the student's knowledge and skills.

- **Teaching Architectural Design Through Creative Practices:** Creativity is a "multifaceted phenomenon" that is difficult to define in one simple term. It is the production or tendency to generate or distinguish ideas, alternative solutions or possibilities that are useful and noble in solving problems. It is a cognitive process for solving problems in an innovative way that produces valuable results in communicating with others in a way that attracts them.

Such as abstraction, constructive manual exercises, and activities using hand drawing techniques, an effective learning method, especially for primary years students, to stimulate creativity and transform practices into cumulative experiences. Including and implementing creative activities in the first year of architectural design adds tangible improvement to the work students do. This allows for the stability of the acquired theoretical knowledge as it helps to understand it not only as concepts that can be observed and analyzed, but also as a tool for the creative process itself and ensures a greater transfer of knowledge between the analysis phase and the design phase. In addition to its usefulness in practicing some skills or abilities that allow students to practice design with greater ease and maturity [7].

- **Studio Environment Related to Student's Achievement:** Education quality assurance bodies locally and internationally have recommended the necessity of transforming current knowledge-based learning systems into learning systems based on learning outcomes or competencies. This is what was agreed with by the recommendations of scientific research and the recommendations of studies that monitored the reliance of the educational system in architectural education programs in Libya on knowledge more than on practical application. The four essential characters of environment that could foster knowledge & creativity: **i- Personal teacher-student connection, ii- Valuation, iii- Ingenuousness, independence of choice, iv- classroom accomplishments**) [8,9].

METHODS

The research used two scientific methodologies to achieve its goals, as follows:

- **Systems analysis methodology:** Where the analysis of the common factors in achieving architectural creativity in the design studio in the axis of “acquiring the student with knowledge” and discovering the potential elements causing the defect and the research problem and then reviewing previous research studies on each element.
- **Inductive methodology:** The research reviewed the latest research related to achieving the goal of the study in both the educational and architectural fields, relying substantially on global research databases to form an integrated picture of the factors involved in achieving this goal.

An architecture design studio is fundamental in architectural education, Architectural educational programs have been founded based on working around the "learning by doing" pedagogy conducted in the design studio through demonstration, and other teaching and learning approaches. Undeniably, also based on the author’s experiences, working in an architecture design studio offers fantastic communication, multi-tangible, student-focused, constructivist, and providing experiential problem-based teaching environment. So, the problem that this research paper is trying to solve: **How the architecture design studio can assist to develop creative outputs work of architecture student?**

The Architecture and Urban Planning Program at the UTA was established in **1999/2000**. It is concerned with studying architecture that is concerned with humans, their environment, and the changes taking place to create an environment that satisfies the individual’s requirements for a better life, which requires extensive knowledge related to various engineering sciences. The number of students in the program currently stands at more than **300 students**, studying **56 subjects** during an open semester system, and the number of graduates has reached more than **100**, figure 1 shown design studio’s in UTA, As an introduction to the initial survey information about the important characteristics and components as creativity inducers survey shown in figure 2, figure 3 is shown the questionnaire which we asked to student and their answers was shown in figure 4.



Figure 1. This is a figure shown Design studio activities in UTA -by UTA Facebook page

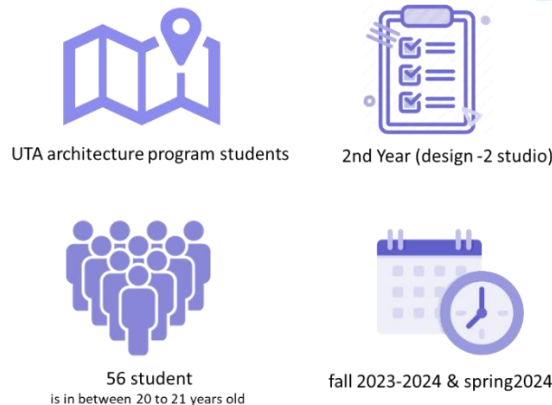


Figure 2. This is a figure shown the initial survey information-by researcher

The questionnaire:



Figure 3. This is a figure shown the questionnaire-by researcher

The answers:

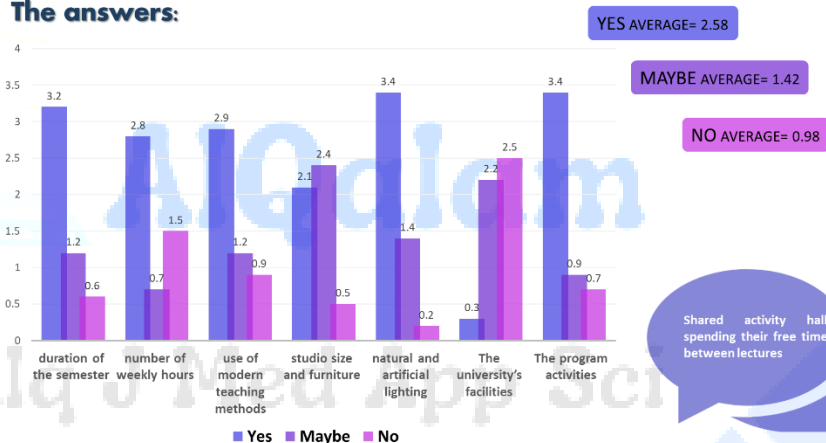


Figure 4. This is a figure shown the answers -by researcher

RESULTS

The results by defining a set of policies, procedures, and practices in the program and in the studio that supports this: **Factors in providing knowledge** that influence the transformation of knowledge into practical practice and creativity. as shown in the figure 3-a, the policies and procedures of the educational program support the transformation of the theoretical knowledge provided to the student into practice and creativity and are based on the transformation of learning systems based on outcomes and competencies, as:

- 1- Review regulations and course objectives
- 2- Providing adequate training for students
- 3- Directing the student to ways to acquire knowledge
- 4- Determine realistic locations for projects in the design subjects
- 5- Continuous work to support the student's spatial ability
- 6- Teaching through active learning methods

The procedures and practices that the professor must consider in the teaching methods and methods used in the studio that support achieving the research goal as shown in the figure 3-b, which are:

- 1- The activities are appropriate for the theoretical and practical parts of the course.
- 2- Using smart IT applications in teaching.
- 3- Using informal learning tools.
- 4- Provide examples and models.

- 5- Present knowledge through peer criticism and comparisons.
- 6- Teaching architectural design through design criticism.
- 7- Applying the constructivist learning strategy and learning by doing.
- 8- Conducting a test of the effectiveness of the teaching method at an early stage of the course.

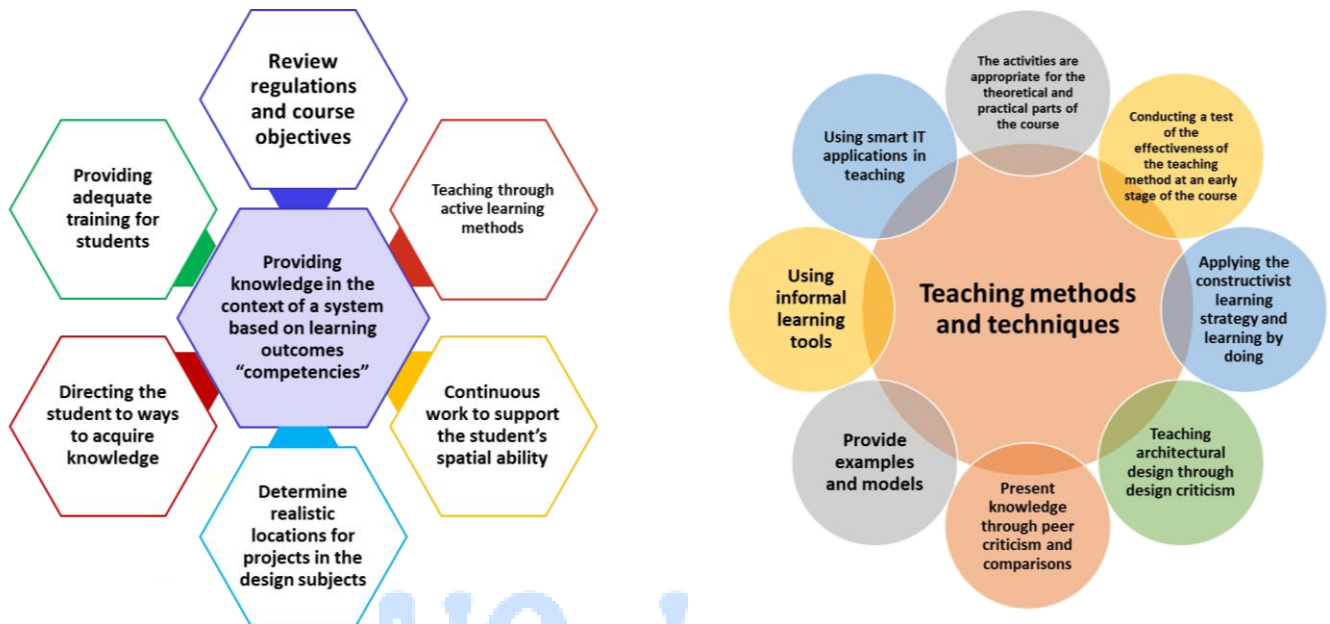


Figure 3. This is a figure Shown the policies, procedures, and practices in the program and in the studio- (a) Factors in providing knowledge – (b) The procedures and practices from professor -by researcher

DISCUSSION

The main objective of this paper was to provide realistic solutions and practices that enable the program to present knowledge in a way that helps the student transform theoretical knowledge into practical practice and creativity in the architectural design studio by propose policies, procedures, and practices to improve the results and returns of design education in the studio, also:

- 1- Statement that the time students spend inside the studio receives knowledge from the professor and from each other.
- 2- Providing a suitable educational environment for students and a diversity of teaching methods improves creativity.
- 3-The program needs to improve and develop some of its facilities and policies.

The study recommended adopting the architectural program to develop the process of teaching (architectural design) within the studio, considering the establishment of activities for students, implementing practices to develop students' creative abilities, launching initiatives for excellence and creativity in these important technical skills, and the necessity of reviewing policies and practices for providing current knowledge to students.

Stressed the importance of activating the role of information technology applications in developing architectural education and benefiting from non-formal education tools. It also opened a new field of research for the development of architectural education that focuses on the main input into the educational process, which is the student, and how to improve his abilities and educational and creative readiness. I was keen to activate the integration between the educational and architectural fields in scientific research and build on many previous recent studies in both.

CONCLUSION

The study discussed a vital topic for all architectural education programs and one of the most important problems of architectural education, which is how to transform knowledge into creative practical practice for the student. It showed, through the results of previous research:

- 1- statement set of policies, procedures, and practices in the program and in the studio that supports this.
- 2- the dependence of creative thinking on the possession of good knowledge. The study explained one of the most prominent reasons for the low quality of many student projects, which is the lack of information required by the student.
- 3- The necessity of transforming current knowledge-based learning systems into learning systems based on learning

outcomes or competencies for their essential role in building knowledge based on practical experience.

REFERENCES

1. Hassanpour B, Utaberta N. Australian Journal of Basic and Applied Sciences, 2011;5(9):571–577.
2. Gifford R. Environmental Psychology: Principles and Practice, Fifth Edition. Washington, U.S.A.: Optimal Books. 2015.
3. M. V. Pollio, The Ten Books of Architecture, Rome, Italy: Dover Publication, 1960, p. 368.
4. Basa I. Project Selection in the Design Studio: Absence of Learning Environments. Educational Forum, 2010;74(3):213–226.
5. Dizdar S. Some Options About Design Studios of Architectural Education. European Scientific Journal. 2014;10(36):1–11.
6. Dizdar S. Architectural Education, Project Design Course and Education Process Using Examples. Procedia - Social and Behavioral Sciences. 2015;176:276–283.
7. Ibrahim N, Utaberta N. Learning in Architecture Design Studio. Procedia - Social and Behavioral Sciences, 2012;60:30–35.
8. Darnel H. Cole G. Supportive classroom environment for creativity in higher education. 1999.
9. Groat L, Wang D. (2013). Architectural Research Methods, 2nd Edition. New Jersey, USA: Wiley. <https://doi.org/10.1016/j.sbspro.2015.01.472>

برنامج العمارة والتخطيط العمراني بجامعة طرابلس الأهلية كدراسة حالة

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المخلص

ركزت هذه الورقة البحثية على تحليل واستكشاف دور المعرفة في غرس وتنمية الإبداع داخل استوديوهات التصميم المعماري كعنصر أساسي في التعليم المعماري، وأجابت على تساؤل مشكلة البحث: "كيف يمكن للبرنامج تقديم المعرفة بطريقة تساعد الطالب على تحويل المعرفة النظرية إلى ممارسة عملية وإبداع في استوديو التصميم المعماري؟" وهي تستند إلى منهجين علميين: المنهج الاستقرائي ومنهج تحليل النظم واستخدام أحدث النتائج البحثية في قواعد البيانات البحثية العالمية حول مواضيع مشابهة لهذا الموضوع. تكمن أهمية هذه الورقة البحثية في مساهمتها في حل مشكلات التعليم المعماري، وخلص البحث إلى مجموعة من النتائج الواقعية القابلة للتطبيق ونجح في تقديم رؤية وإطار متكامل حول عوامل تحويل المعرفة إلى ممارسة عملية وإبداع، وسياسات وإجراءات البرنامج التعليمي التي تدعم تحويل المعرفة النظرية المقدمة للطالب إلى ممارسة وإبداع، والممارسات التي يجب على أستاذ الاستوديو مراعاتها لدعم تنمية الدافعية والقدرة على التعلم والإبداع. وأوصى البحث بالتخطيط لتنفيذ نتائجه من خلال تطوير السياسات والإجراءات والممارسات الخاصة بالبرنامج التعليمي وأستاذية التصميم المعماري، كما أوصى بإجراء المزيد من الدراسات لكشف واقع تطبيق نتائج البحث عمليا في استوديو التصميم المعماري في برنامج الهندسة المعمارية بجامعة طرابلس الأهلية وبرامج التعليم المعماري في ليبيا.

الكلمات المفتاحية: المعرفة، الإبداع، استوديو التصميم، التعليم المعماري.