# Architectural Competitions:
## An Innovative Tool for Developing Architecture Education and Professional Practice

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## Abstract

Architectural competition is one of the important paths in the process of architecture education and professional practice. It is considered as a kind of collaborative learning and one of the crucial educational methods that adopt the development of student learning. Traditional educational methods are not always capable of responding flexibly to the new architectural topics and challenges during the design studio or in the practical market. Thus, architectural competitions tend to react more responsively to current issues and problems and enable students to demonstrate practical skills acquired from their education.

This study presents several considerations regarding the importance and phases of architectural competitions to promote the skills of architecture students in the Egyptian universities. A survey study concerning the participation in competitions has been conducted. The results were analyzed and evaluated within the framework of the observations made during the competitions and the information obtained from similar studies in the literature review. As a consequence, positive outcomes were concluded.

The paper aims at identifying the impacts of participating in architectural competitions on the student learning process during the design studio and the skills needed for professional practice.

## Keywords

architectural competitions, architecture education, design studio, professional practice, skills, student learning

## 1. Introduction

An architectural competition is a setting for intellectual exploration and experimentation, as architecture education is supported by curiosity and mental knowledge of the student. Due to the importance of the courses of architectural design, the paper aims at identifying a productive and an effective learning process that helps to develop students' creativity. Also, the paper investigates new teaching techniques that can help students in their future practice.

Therefore, informal studies like architectural competitions, workshops, internships, seminars, conferences, exhibitions and field trips, ... etc. have had undeniable importance. Besides, they become necessities of lifelong learning. During architectural competitions, the students are involved individually or as part of a team, where there is a high probability of losing, and where solutions are expected to solve specific problems quickly. So, they provide significant educational gains regardless of the results. Architectural competitions are often associated with architectural practice and seem an excellent way to start as an expert.

The study assumes that architectural competitions serve as one of the innovative methods in the process of architecture education and profession. Different skills such as research and communication skills, time and team management can be assessed to evaluate the students' experience and to compare their skills during the design studio and in the professional market before and after participating in architectural competitions.

The study is divided into three main parts. The first part is the literature review. It highlights the definition of architectural competitions and its importance to the labour market. Also, it discusses the role of architectural competitions in architecture education and explores the skills gained during such architecture events. Then, the second part introduces the procedures, examples and experiences of competitions in which students and the author have participated in the Department of Architectural Engineering in Pharos University in Alexandria (PUA),

Egypt. Within the framework of observations and experiences gained during the process and the findings obtained from the literature research, a questionnaire was obtained for students who have participated in different architectural competitions to evaluate the competition process and outcomes. This leads to the results that confirms that competition experiences are an essential motivational tool to develop the Egyptian architecture education system and keep pace with the global educational systems that integrate theoretical academic learning with the simulation of real-world market conditions (Fig. 1).
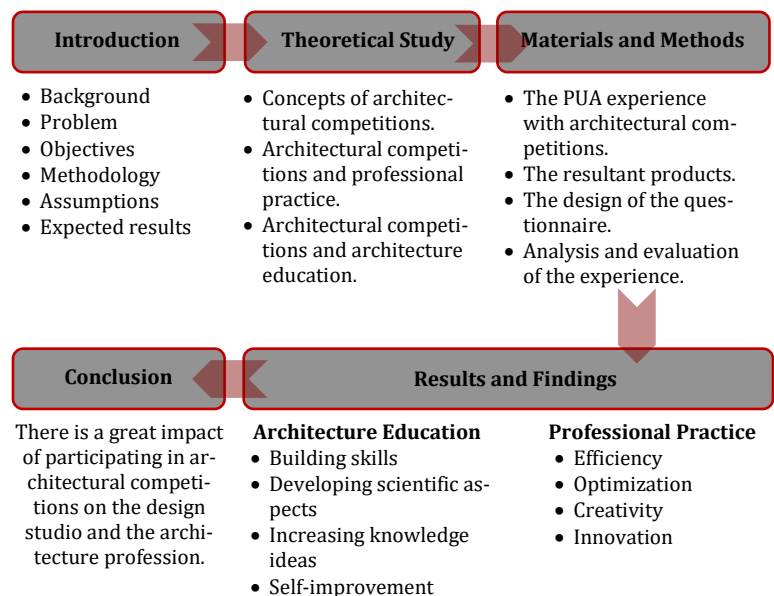


Figure 1. The methodology adopted during the research

Source: The author

## 2. Research Problem

During architectural design studios, instructors face several problems concerning the exploration of students' skills and abilities. Also, students are not able to reveal their talents due to the formal education system that is not always capable of responding flexibly to new topics or the type of projects given during the design studio or the limited time of course schedule or students are under the stress of grades, ... etc. In addition, there have been significant changes and shifts of challenges in the architectural practice which needs development of professional skills.

In order to prepare future architects for the new practices, architecture education should reflect these changes and encourage participating in architectural competitions that help students to discover their abilities and provide them with a tool for successful architecture education and practice.

## 3. Architectural Competitions

### 3.1. Definitions, Ideas and Approaches

The word "competition" is defined as "an activity done by a few individuals or groups, each of which is trying to do better than all the others". However, according to Deutsch who defined it as "a context in which the aim of achievement of participants has a negative impact, so that the success of one participant necessarily comes at the failure of the other". The definitions and classifications varied according to each area where competitions are defined. For example, in market place, it is "the scenario in which people or organizations are trying to be more successful than each other", for instance, by achieving more sales in market (Haron, 2020).

The majority of definitions describe the competition as a helpful and positive activity meant to achieve the most beneficial results to reach the largest possible returns (economic, social, moral, educational, environmental, … etc.). This activity, whether it is a group or an individual competition, results in direct and mutual benefits and became a lifestyle among communities and organizations (Burguillo, 2010).

According to recent studies, people in competitions exceed their limited abilities and reveal higher potential for success in a competitive state between a clear set of ethical rules. This occurs under new conditions that promote competitiveness and excellence and highlights the unlimited creative potentials of people, providing the existence of effective and clear assessment guidelines (Kilduff, Anger and Staw, 2017).

According to Anderson, Zettersten and Ronn, at first, the architectural competition was limited. Only a few well-known individuals or artists were given the chance to practice. Then, the French Revolution transformed the architectural competition into a tool for a new framework based on independence, unity and equality. It is this attitude that later became the basis of organizing architectural competitions all around the world (Andersson, Zettersten and Ronn, 2016).

The International Union of Architects (UIA) defines architectural competitions as a method in the architectural field that depends on quality and based on the selection of alternatives and solutions to create a good built environment. In general, competitions present the ideal approach for realistic projects, selected from several entries by a professional jury. This process aims to ensure the optimal performance and the most ideal concept for all clients and users (International Union of Architects, 2017).

The development of architectural competitions is currently growing quickly. The themes offered in architectural competitions are not limited to building design, but also include other fields that are closely linked to architecture, such as town planning, urban design, landscape, interior design, … etc. The cost for participation and awards ranges from free to paid. The organizers also vary from local events held by student organizations, to prestigious international competitions. Additionally, options range from competitions solely for students to that include professionals (Gunagama and Pratiwi, 2019).

Architectural competitions are categorized into two main categories. *Idea competitions*, which concentrate on the search for conceptual solutions without the purpose to actualize them. The existence of idea competitions enables professionals and students to compete with ideas on an equal level, namely the possibility to link communication between practitioners and academics. There is no limit for architects to research in idea competitions, which is expected to be able to generate new knowledge. *Project competitions* focus on finding ways to implement a project where professionals are more unlikely to spend much time and extensive effort to solve particular issues of architectural design problems. It is because project competitions are expected to produce something based on discovered and validated information (Fig.2).
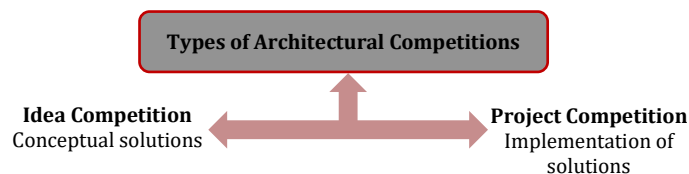


Figure 2. Types of architectural competitions
Source: The author

### 3.2. The Importance of Architectural Competitions for Professional Practice

The preparation of an architect who can compete locally and globally has become an urgent need and a primary objective of several schools of architecture. Design studios have the responsibility to educate students to become the ideal preventatives of their profession. It is urgent to integrate scientific and cultural studies and public education, which are complementary to professional training (Orhan, 2017).

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To get professional knowledge in the field of architecture, it is crucial for architects to always sustain the idea of architecture and continuously learn from the surrounding environment and experiences in order to improve their profession (Kamstrup, 2017). The combination of theoretical information and professional practice is one of the skills that students should obtain through architectural design studios.

Guilherme has discussed architectural competitions comprehensively as it evaluates and measures the architects' ability outside the controlled system in terms of social relations, comfort zones, age, gender, level of expertise, … etc. It happens in a quick sublimation process and also results in recognition and publicity that goes beyond the investment of time, effort and financial resources. Consequently, it contributes to the process of creating a high-quality built environment, brings out the best in individuals and serves as a way to achieve outstanding designs. In many cases, the activity is not only intended to discover and select the best solution to design challenges but also to determine the participants that will work on them (Guilherme, 2014).

Competitions are a way to self-promotion and demonstrate practical knowledge for architects who are just starting their profession. While some define competitions as methods for practicing design thinking and communicating, others interpret them as tools of discourse development. In other words, they are research-based approach that make a non-linear relationship with customers. Through competitions, participants can think, discuss, create, research and reproduce knowledge. In that respect, there is a similarity to academic comprehension.

Therefore, using and evaluating competitions as link between academy and practice is essential (Dincer, Ozeren and Yagci, 2022). Because of the incredible potential of architectural competitions, UIA and UNESCO are working to adopt standard guidelines in managing such events. The UIA has highlighted some crucial principles in organizing architectural competitions which are confidentiality, transparency, equal consideration and non-discrimination. The UIA believes that architectural competitions are the best way to prevent corruption, preserve intellectual property and promote creative thinking and innovation. Furthermore, through it, the community gains from the solutions presented with cultural values and may help create a sustainable future (UNESCO-UIA, 2017).

Architectural competitions may be considered as means to balance different types of specific demands or concerns, such as efficiency and optimization, on the one hand, and creativity and innovation on the other hand. The competitive advantage of an architectural competition is that it can be a way for contractors to find appropriate alternative partners and projects, as well as always

have the ability to communicate and make decisions at an early stage without compromising the need for equality and efficiency (Kamstrup, 2017).

Market customers in architecture are always seeking innovative and outstanding products. In addition, architectural competitions have an economic factor. Thus, the main purpose of architectural competitions is getting the best concepts available and getting a huge number of proposals and ideas without spending large amounts of money on additional designers and architectural offices (Al-Mamoori, 2019).

Architectural competitions no longer contest as a special field of professional excellence, but also reflect many other fields like research, innovation, teamwork and international working environments. For that, Dinc described architecture competitions as "a creation environment where the value is reconstructed and questioned. It can mobilize creative forces simultaneously and acknowledge the proposals that can be distinguished from the others and thus enable the original solutions to participate in life" (Ozuer and Erkartal, 2019).

The focus of competitions has changed from desire to achieve perfection in some projects to a permanent requirement in the architectural market. For all parties involved in the process of design and implementation, this includes the need for clients who seek for the most suitable architectural solutions and economic options for the project. It is the need for architects to sow their ingenuity and marketing themselves and to engage actively in the decision-making process, particularly in public (Rustad, 2019).

Several studies have shown that the rise of interest in architectural competitions has enhanced the creativity and productivity of the architectural market, both in terms of quantity and quality.

# 4. Development of Architecture Education through Architectural Competitions

According to several studies, the traditional educational system in design studios is the main problem facing the practice of architecture profession. It teaches students without relating their knowledge with the society needs. Nevertheless, effective design that aims to find smart solutions for the community usually requires creative and practical alternatives. The main goal of architecture education is to provide knowledge on how to solve architectural problems in reality through identifying students' practical skills resulting from their education.

## 4.1. The Role of Architectural Competitions in Architecture Education

Architecture education can be defined as "*the study of the design that takes its inspiration from creativity*". Encouraging and promoting creativity is necessary in all endeavours, but it is also particularly important in the field of architecture education (Potur and Barkul, 2006). The primary method for architecture education can also be defined as the process of teaching and learning to build and shape "new ideas", "knowledge" or "product design" through progressive cognitive accumulation. Architecture is an area of thought for study and experience.

However, traditional studios alone do not provide students with the knowledge they need to comprehend architecture. However, students need to gain practical experience because according to Costa "architecture cannot be taught and the best learning method is to do it". Therefore, architectural tasks outside of the traditional and formal educational system can be the best way to provide students with design skills.

An architectural competition can be a useful addition for formal education because it cannot be denied that architectural design studies performed inside the context of the studio are always concerned with design approval by instructors. Another problem is associated with traditional design studio is lack of freedom and desire to transform results in a firm and inflexible learning methodology and inefficiency of internal management mechanism (Orhan, 2017).

An architectural competition is a method for practicing and learning how to become an architect, which also offers an opportunity that goes beyond winning a prize. Even a loss in the competition can be a chance to evaluate and modify specific aspects of the student's work. The competition can be seen as the student's opportunity to be able to freely gain new skills, as well as information and concepts to move forward (Guilherme, 2014).

Design studio courses taught in all architectural programmes use a standardised methodology. Each class begins with a case study, a site and a context for a project or a challenge with a strict time constraint. Then, each student creates a conceptual design based on his/her research to produce a final product that will be reviewed or evaluated by the instructor. Throughout the design studio, it is common to see a competitive atmosphere that provides the best products and greatest results. Generally, the best work then obtains numerous incentives which may vary from school to school.

The above is not surprising because the competition is the origin and perhaps it is the only way of education in architecture that has remained in use since the establishment of the first architectural school "Ecole des Beaux-Arts" in France (Guilherme, 2014).

Thus, the system applied in architecture courses is a reflection of the design competition system. The only thing that distinguishes studios and competitions is the role of lectures that serve as mentors, as well as senior architects, clients, juries and sponsors in architecture education (Demirbas, and Demirkan, 2017).

Architectural competitions can be considered as advanced methods that support architectural design studios. They mainly aim to improve students' abilities and knowledge to foster their innovative thinking and t5o develop their creative architecture education (Katarina, and Alexandra, 2016).

## 4.2. Skills Gained during Architectural Competitions

Competition-style classes are growing in popularity and are improving architecture design studio-based projects. Many institutions and architectural schools organize architectural competitions which are frequently considered as comprising intensive, short-term design studios (Markiewicz, 2017).

According to Brooks-Harris and Stock-Ward, a general definition of an architectural education is: "…… a short-term learning experience that promotes active, experiential learning and uses a variety of learning activities to meet the demands of different learners, with possible competition focuses on problem solving, skill-building, expanding expertise, systemic change, individual awareness and self-improvement". This means that, architectural competitions can produce an engaging educational environment that encourages participants to explore their innovative thinking (Brooks-Harris and Stock-Ward, 1999).

The term "Skills" refers to the ability to perform tasks based on certain capabilities, knowledge, attitude and behaviour. According to the "UNESCO-UIA Charter for Architectural Education" published in 2017, the capabilities that students have to obtain in architecture education are identified as "Design", "Knowledge" through (cultural and artistic studies, social studies, environmental studies, technical studies, design studies and professional studies) and "Skills" acquired through (collaboration, communicate ideas, use different tools to create designs, cooperative learning, engagement) (UNESCO-UIA, 2017).

Students should learn that architecture is a significant form of art that shape the built environment. Teaching strategies should focus on the integration of both social responsibility and creativity in design studies. It should also concentrate on developing an interactive environment to improve students' academic and performance behaviour (Salama, 1995).

Generally, architectural competitions are always developed to complement the traditional academic education process with new and innovative forms. The ability to work creatively and under time constraints has become increasingly crucial as a training for working within the architectural profession. This practical experience has been supported and enriched by the need for time-working skills and their application in an educational environment given the different levels of professional preparation of the participating students.

Another driving force behind architectural competitions is the competition between the groups. As a result, the working environments that are created are entirely different from those during the traditional design studio. It provides opportunities for the educational process to be enriched with new experiences and for new competencies to be learned. Interaction, social skills and presentation abilities are extremely important. During competitions, the lack of some competences of students are revealed and could be improved during the event. It is necessary to emphasize that the ability of students in terms of both presentation and professional skills is very different.

Therefore, it can be said that, architectural competitions also improve students' social behaviour and helps them to accept others and communicate effectively. This communicative environment allows students to exchange ideas together and develop their self-confidence, which will have a positive impact on their psychological behaviour. Students also may have the chance to interact with external people from different fields and disciplines. Moreover, participation in architectural competitions involves students into real-life problem-solving situations as well as preparing them to face the architectural market (Katarina and Alexandra, 2016).

Developing students' creative skills will help designers to find remarkable design solutions that can result in a better environment. Unusual approaches to problem-solving can develop new concepts and ideas for designs, which could lead students to innovative design solutions (Casakin, 2007).

It is essential for the instructors to recognize and understand the ability of students to comprehend certain activities and the scope of work from the very beginning of the competition, in terms of their different levels of computer proficiency and design. It is also a determining task for the instructors to deliver knowledge and understanding and to encourage the participants to co-operate, build teams and discuss problems in
groups (Table 1).

Table 1. The educational problems that face participants in architectural competitions and the solutions obtianed
Source: The author

| Skills Problem | Educational Challenges | Methods Applied | Solutions Obtained |
|---|---|---|---|
| Research Skills | Lack and inability of students to search for the targeted data required | Presenting some lectures and the most important social media that contains architectural data | - Open-up the students' mind research methods<br>- Analysis of information and materials |
| Computer Skills | Insufficient presentation and lack of software knowledge | Supporting participants with lower skills | - Prevention of exclusion from joint work.<br>- Increase training |
| Communication Skills | Low degree of socialization and low self-confidence | Introduction to group integration tasks at the beginning of the workshop | - Increase in the efficiency of group collaboration<br>- Enhance ease of talking and the free exchange of ideas |
| Professional Skills | Unknown abilities of students, including their proficiency and skills | Introduction of short tasks by the instructor, enabling recognition of the skills and advantages of each participant | Adjustment of the division of tasks in the group to the skills of participants, involving mutual learning from one another |
| Time Management | Lack of time management | Tasks are achieved in a limited time | Better way of dealing with time and organising tasks |
| Team Management | - Problems in group working and finding common solutions<br>- Students are not taught | - Brainstorming and interactive discussions aimed at develop- | Development of a common idea, or choosing an idea through democratic |

| Skills Problem | Educational Challenges | Methods Applied | Solutions Obtained |
|---|---|---|---|
| | enough about team working, discussions and subordination in everyday work - Lack of collaboration | ing joint solutions, moderated by the instructor - Using a common platform the share the knowledge and ideas | dialogue, eliminating dictate of the strongest personality |

# 5. Materials and Methods

As a result of the research and experiences related to competitions, it is possible to observe that such practices provide qualified motivation. With this motivation, it is clear that skills increase design, professional knowledge, learn presentation techniques and achieve adaptation of team works and collaboration improved.

## 5.1. Architectural Competitions in Pharos University in Alexandria (PUA)

During the past three years, summer training workshops "learning by competition" were organized in the Department of Architectural Engineering, Pharos University in Alexandria (PUA), Egypt. These workshops deal with several topics concerning design of buildings, urban design, landscape, ... etc. The didactic experience from architectural competitions was in the form of an intensive program during the summer and under the umbrella of informal education for three months (July to September).

The participants are usually students from the fourth level (8th Semester) and postgraduate students who have the potentials of design, presentation, communication. Contributing to the success of these competitions has also been the efforts of the staff, who have accompanied the work of students, all the time simulating, giving advice and supporting students to improve their skills, knowledge and ideas.

## 5.2. Scope of Competitions

The themes of the competitions that are held at PUA are generally determined by the instructor. However, the participants (students) has the option to specify and choose a particular topic to be addressed during the competition (concept). The open formula for selecting a specific design task is beneficial to a diversity of issues within the main topic of the competition.

In general, the interesting thing about interaction in architectural competitions, is that the students are able to observe international problems. Their role is to participate in the discussions and in the classification of the final project solutions. It is also the task of the instructor to monitor continuously the members of the group and to recommend them those tasks which could be performed and also to introduce students to realize some new approaches or to improve their skills in design and performance techniques.

The instructor determines the degree of the involvement of the individuals in developing and solving the problem. Engaging the group in defining the problem further promotes the involvement of participants in the search for a solution.

In this regard, it is worth paying attention to unconventional tasks and activities that simulated the group to be creative during the competition (Fig. 3).
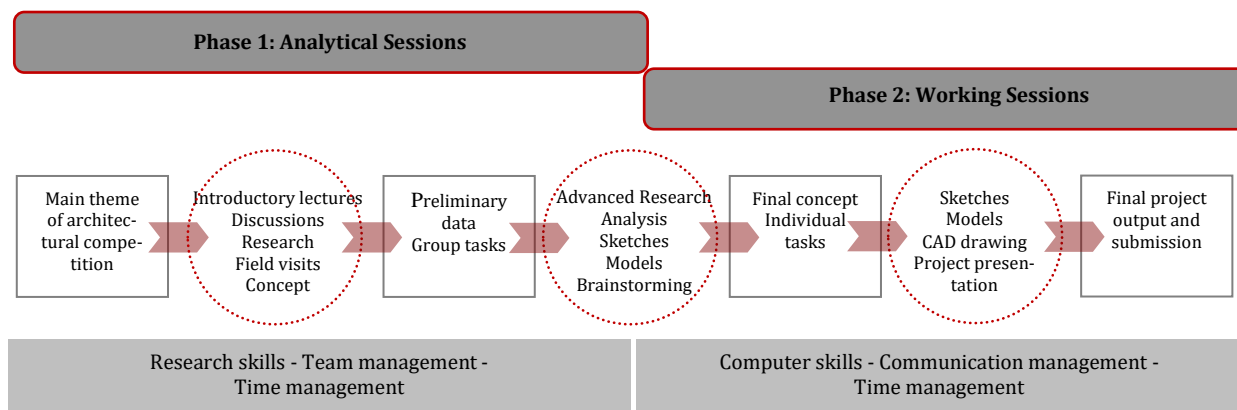


Figure 3. Phases and skills through architectural competitions

Source: The author

## 5.3. Phases and Working Process of Competitions

The architectural competitions held in PUA are divided into two phases. First, the *analytical sessions*, which includes introductory lectures about the theme of the competition. These introductory lectures have a significant impact on this process. These lectures make it possible for students to become familiar with the topic of the competition in a broader context where the instructor plays an essential role in this matter. Also, the sessions include brainstorming, open discussions, research, data collection and concept generation. Second, the *working sessions* which include advanced research and analysis, CAD drawings, sketches, models and the final presentation.

Between the first and the second phases, a short review of ideas and problems discovered is introduced. The competition's working process depends greatly on the socialization of the students and the generation of cooperative team work, ease of conservation and the free exchange of ideas.

In the first phase, students work together and have more discussions, not only in the presence of instructors, but also with one another. These discussions take place on-campus or online. The second working phase is mostly concerned with accomplishing individual tasks that had been assigned by the instructor or resulted from the division of work within the group (Fig. 4).



Figure 4. Open discussion with the students during the competitions

Source: The author

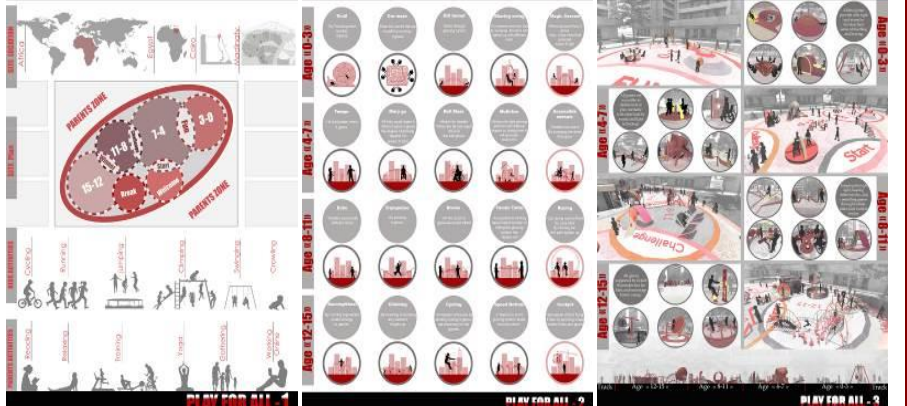## 5.4. The Resultant Products of the Competitions

The application of innovative and informal educational techniques focuses on the search for design alternatives. In addition, some commonly used and approved design studio techniques and processes are involved in the preparation of several drawings and models. Other activities are applied, often inspired by the instructor and results from his/her personal experience in the educational process.

In this context, different examples below show the experience of participation in architectural competitions through various summer training workshops that were held in the Department of Architectural Engineering, Pharos University and its effect on enhancing students' skills (Table 2).

Table 2. Examples of the product of architectural competitions in Pharos Univeristy in Alexandria
Source: The author

| Name of the Competition | Number of participants | Level of Students Participated | Field | Type of Competition | Aim and Phases of the Competition |
|---|---|---|---|---|---|
| **Pandemic Dwelling** | 3 | 8th | Building Design | Project | The main idea of the competition was about the way users look at their dwellings during the pandemic period. The students started in groups by choosing the location of the project, collecting data about dwellings in general and the requirements for pandemic residential spaces in particular. Then, each student individually started to put a concept and with the aid of the instructor, a final concept was chosen which was followed by the CAD drawings, sketches and models to reach the final project presentation. |
| |  | | | | |
| **Tactical Urbanism** | 6 | 8th and Postgraduate Students | Urban design | Idea | The aim of the competition was to design an unconventional project capable of transforming a public space to be more safe and resilient. Students started by choosing the location followed by a site visit and proposing different alternatives for the master plan (in groups). Then, after comparing the ideas and concepts, it was decided to divide the site into several sections where each student started to design his/her section individually with the aid of the instructor. |
| |  | | | | |
| **The White Lands** | 3 | 8th | Design and urban design | Project | The design challenge was to conceive a modular solution for housing Hajj pilgrims with air-conditioned living arrangement that is fireproof and hygienic. At the beginning students, started to design the housing unit and to think about the way of clustering them with each other (in groups). After that, lectures were held, then each student started to search for the environmental treatments that can be used in the unit. Finally, they reached sustainable affordable solutions that |
| |  | | | | |

| Name of the Competition | Number of participants | Level of Students Participated | Field | Type of Competition | Aim and Phases of the Competition |
|---|---|---|---|---|---|
| | | | | | can be applied. The CAD drawings, the exterior and interior models were achieved for the final presentation. |
| **Fantasia** | 3 | 8th | Urban design | Idea | The aim was to design a theme park with 'the mystical land of Ancient Egypt' as a theme. The park design must make all people feel welcome and have a little something for everyone. Students had introductory lectures about theories of theme parks and the Pharaonic history. Then, they started to think together to achieve a new concept for theme parks, they designed the master plan with its different sections. The next phase, each student took a section and made all drawings and sketches stating from the CAD drawings to the final presentation. |
| |  | | | | |
| **Azbakeya Kiosks** | 6 | 8th | Prototype | Project | The main challenge of the competition was to design sustainable kiosks that serves to sell different products and books. Students searched for the theories of kiosks and the suitable building materials (in groups). Then, each student started to design a prototype including the CAD drawings (design, execution and details), sketches, diagrams and final modelling. |
| |  | | | | |

| Name of the Competition | Number of participants | Level of Students Participated | Field | Type of Competition | Aim and Phases of the Competition |
|---|---|---|---|---|---|
| **Gentle Care** | 3 | Postgraduate | Interior design | Project | The competition aimed at designing a dentist clinic that attracts patients and feel intimate with the space.<br>The students started by putting a concept that divides the clinic to three different zones, where each zone has a special colour and theme. Then, they worked together in groups in all drawings. |
| |  | | | | |
| **Contech Dorms** | 3 | Postgraduate | Prototype and interior design | Idea | The main concept of the completion was to design a housing for students in new cities.<br>In the first phase, students started to search for the site, collect data and examples for students' housing until they reached a concept. In the second phase, they carried out all drawings together. |
| |  | | | | |
| **E-Playground** | 3 | Postgraduate | Urban design | Idea | The main challenge was to design a playground area for kids that deals with new technology. Students started to search for the data and theories of playgrounds and different examples for children's parks until they reached a concept. After that, each student took a task to accomplish it until they reached the final product. |
| |  | | | | |

## 5.5. Evaluation of the Competition Process and Outcomes

During the participation in architectural competitions in summer training workshops, it was observed that students faced several challenges through the working process. They were not used to the informal activities and tasks given during the competition. Also, in the first phase, students had a clear gap in doing research for the data required. They had low self-confidence to present their concepts and ideas. In addition, students had problem to work in a team and lacked to know their skills and creative abilities which was discovered during the competition process.

Thus, quantitative data analysis was used as a research method providing an opportunity to investigate the skills gained and advantages from participating in architectural competitions and to propose new educational techniques that could be applied during design studios.

The main hypothesis of the study is that each component of the suggested learning techniques is of equal importance and have a significant impact on the success of the architecture educational process.

### 5.5.1. Designing a Survey Questionnaire

This research is a reflective evaluation using quantitative approach through a questionnaire distributed to undergraduate and postgraduate students in the Department of Architectural Engineering in Pharos University in Alexandria (PUA) who have participated in architectural competitions either locally or internationally. The study was conducted in June 2023. The students were surveyed on the subject of participation in architectural design competitions and the positive and negative impacts and their feedback.

Questions asked included personal information and items that focus on participation in architectural competitions. The students were also asked about the scope of the competition, the number of participating times, achievements and benefits gained from the competition. Specific questions focused on finding information about students' first time to take part in architectural competitions, the development of individual skills, and the motivation to participate.

The number of students who participated in architecture competitions in the past three years was 30 students where 27 students responded to the questionnaire representing about 90% of the target group. There are some limitations in this study that the number of respondents participating in the survey was small. Thus, the results were not accurate.

### 5.5.2. Results

Participation in architectural competitions brought many positive impacts on students. The results were analyzed as follows:

- **Fields of architectural competitions**

93% of the participants have participated in architectural competitions in the field of architecture that deals with the design of buildings such as the pandemic dwelling, residential for students, ... etc. and 7% participated in urban design projects (Fig. 5).
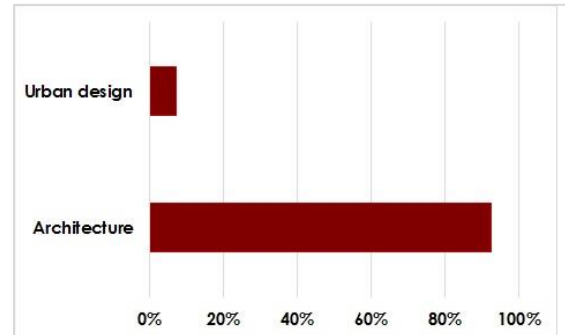


Figure 5. The fields of architecural competitions

Source: The author

- **Sources and ways of exchanging information**

Most of the respondents confirmed that digital sources where the main tools that aided them to complete their work during the competition.

However, nearly half of the respondents (23%) claimed that they have benefited from the introductory lecture sessions that they had at the beginning of the competition. About 42% ensured that architectural websites were the source of their preliminary information for collecting data during the competition such as Dezeen, Arch2O and Archdaily, ... etc. particularly during the first phase of the competition (Fig. 6).
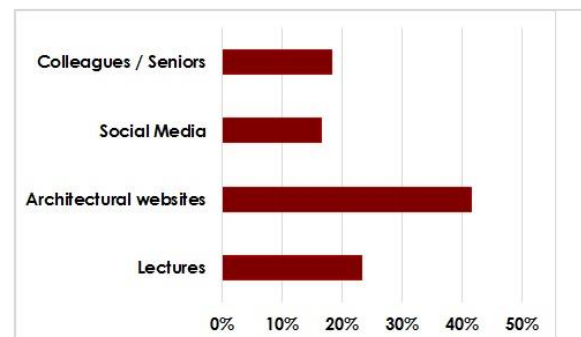


Figure 6. The sources of preliminary information

Source: The author

About 39% ensured the success of exchanging and discussing data of the project was through social media such as mobile applications (WhatsApp, messenger, ... etc.) and archiving their work through mails and Google drive (Fig. 7). While 26% stated that printing hard copies was mainly for discussing individual and group ideas and concepts with the staff through their meetings on-campus.
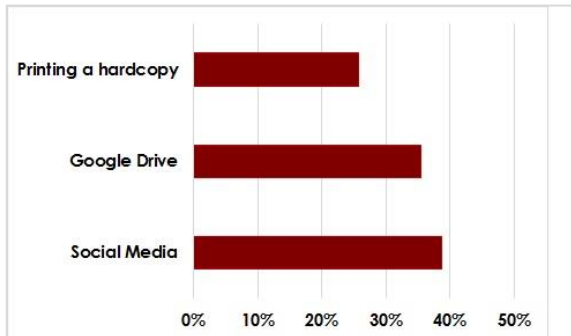


Figure 7. The different ways of discussing data with the team

Source: The author

• **Skills and advantages gained**

From the students' point of view, responses about advantages gained from the competitions. They informed that they gained new skills and knowledge that they did not study in their courses. Also, they recognized the varying averages increased in their abilities and information in many of their courses. The majority of the participants, about 33%, strongly agreed that participating in architectural competitions improved their skills generally. A majority of 29% of the students emphasized that participating in competitions improved their presentation skills and that they had the experience of applying other types of presentation than that is adopted during the traditional design studio. While 26% ensured that their research skills have been improved to a great extent and that they learned how to seek and search for the required information of the project. 22% said that participation in such architecture events improved their computer skills through experiencing different architectural software either for the design process or to evaluate it or measuring the efficiency of the design as well as 23% stated that it has promoted their professional skills through imitating the floor market of the project in all its phases and working under time constraints (Fig. 8).
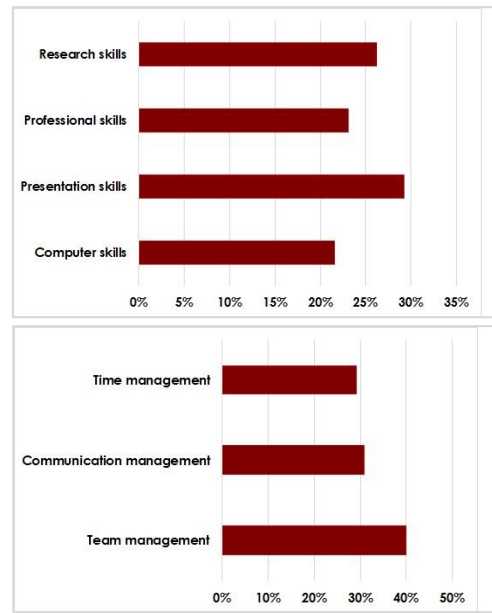


Figure 8. Skills and advantages gained from particpating in architectural competitions

Source: The author

• **Development of students' skills**

About 40% ensured that they have succeeded to work as a team and that it had been a real experience that mimics real practical work. Also, students confirmed that they overcame the problem of working individually and that they succeeded to have collaborations with each other. Only 31% believed that they gained social interaction with the members of the team and agreed that their communication skills had developed through presenting their ideas and discussing their work with their team and staff without being under stress of the formal design studio. Only 29% ensured that they had benefited to know how to manage their time and organized the required tasks under the supervision of the staff.

Most respondents, approximately 93% encourages other students to participate in architectural competitions and have the experience as it upgrades their working skills and develops their abilities, adds new experiences that they don't gain during traditional design studios.

Participants have mentioned some advantages and benefits or strengths such as enhancing the conceptual design and initial ideas and the way of thinking to solve real challenges found in the surrounding contexts. Also, they stated that they had the opportunity to think and create out of the box and the chance to have diverse ideas while exchanging it with the team. In addition, they have learned new concepts about sustainable architecture and environmental treatments and energy efficiency softwares (Fig. 9).
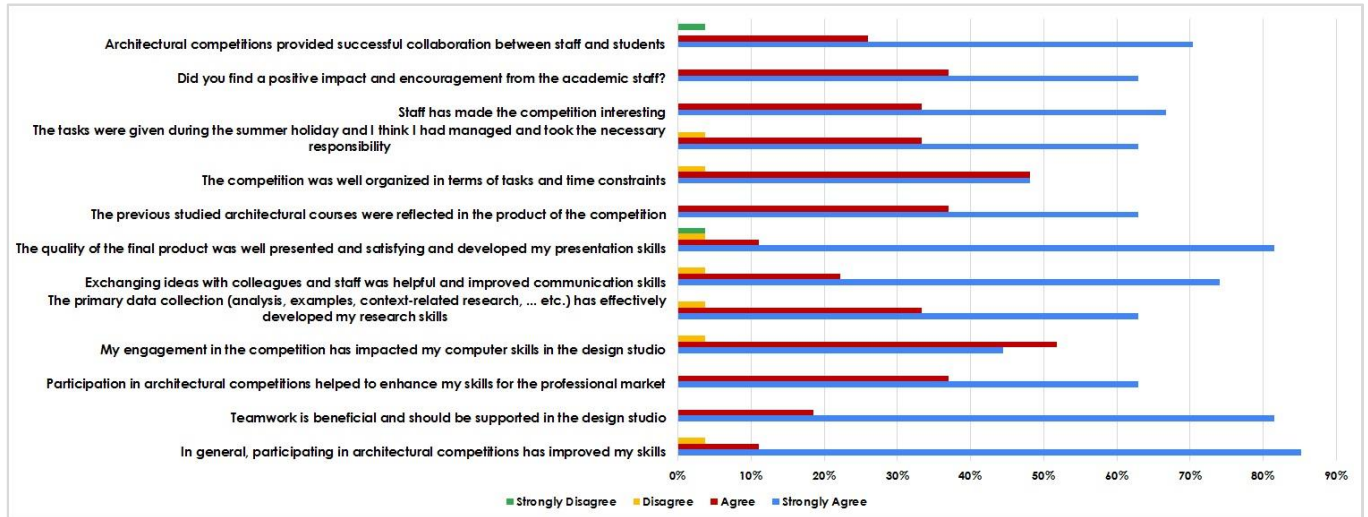
Figure 9. Students' skills development after participation in architectural competitions

Source: The author

- **Suggestions of students**

Students suggested that they should be provided with new plugins that can help them in their project. Also they stressed about learning new techniques and technologies particularly in building materials and insulations. It is also necessary to be flexible while creating studio lectures so that students can take part. If directed properly, the combination of formal and informal education can open more opportunities for students to be more creative and improve their skills.

- **Role of instructor**

When students were asked about the role of the teaching staff and the level of their involvement with students in these activities, 85% stressed on the positive impact of the faculty members on their motivation and level of participation. Students strongly agreed that architectural competitions provided successful collaboration between staff and students. Instructors and educational institutions should be able to open as many opportunities as possible for students to participate in architectural competitions.

In general, students believe that participating in architectural competitions is important, as a requirement for the professional market as a new competitive method.

## 5. Findings and Discussions

The study investigated the contribution levels of architectural competition education method to the development of the students through a workshop with the theme "learning through competitions" besides academic architecture education. It objectively conveyed experiences gained from previous studies, observations of their supervisors during the process and reflections from students who participated in the survey. Also, it reflected the experiments' contributions of instinctive motivation and learning with examples from the products in the competition process. As a result of all these, it is possible to make the following observations:

- As stated before in the literature research, competitions are considered as an educational tool for architects in practical life. It is much closer to the ideal architectural design concept in education. Therefore, very few students have the chance to experience such a process in workshop training. In this respect, it has been a unique experience that also contributed to students by multiple simultaneous competition alternatives. As mentioned earlier, after the competition, it is contacted to follow the students' experience at different time intervals in their professional practices and studentship processes.

- As seen in the evaluation study results conducted with the students, the experiential research contributed to teamwork and self-confidence. It has been confirmed that during informal activities, participants have developed their abilities to take on, manage and share

tasks in harmony and collaboration individually or in a group.

- The study has demonstrated that students are very willing to participate and experience non-traditional activities, as it can be understood from their requests to participate in the "learning by competition" process and survey evaluations. Based on this, it is possible to say that supporting these potentials in students by instructors to meet the needs in architecture education will increase and protect the profession's quality.
- They stated that they performed better in adapting to their professional life, established better dialogue with their colleagues and behaved more confidently in their recruitment processes. In summary, it can be said that architectural competitions make it easier to adapt to professional life by eliminating the gap between theory and practice. Also, it can be confirmed that it helps students to gain much more self-conscious, sensitive, entrepreneurial, social, productive, and investigative identity.
- The summer training workshop conducted at the Department of Architectural Engineering in the University of Pharos, Alexandria has demonstrated creativity and innovation which have been expressed in sketches, working models, renderings, performance and presentations. The competitions have brought long-lasting advantage to the participants. Each architectural competition has reflected a significant approach of the students' educational careers as well as presenting new challenges, which after working through and discussing them, have resulted in interesting solutions.
- The experiment of Pharos University has befitted students where they discovered their hidden skills in creativity and were free from reality where they had the chance to focus entirely on what they love about architecture with strong and successful ideas. Also, some winners and honorable mentions were interviewed and had extensive media coverage where they got their designs noticed.
- The participation in architectural competitions helped postgraduate students to develop their portfolio with unique type of projects which helped them to find better positions in the professional market.

Thus, Pharos University experimentation model continues to develop year after year and has become a great success with a wide variety of benefits for both the participating students and the institution as a whole.

## 6. Conclusion

The research results have highlighted the efficiency of using competition tool in teaching over conventional teaching methods to improve students' design performance and increase their skills and to present the needs of the architecture market in Egypt to help raise efficiency and competitiveness.

Also, the study highlighted the vital role served by competitions in the development of innovation and increase the quality associated with the final architectural product. The study stressed that the professional practice field needs graduate architects who have experienced competition and teamwork before joining companies.

The phenomenon of collaborative learning between participants of the workshop groups has evolved as a new paradigm of informal design-based, creative and inventive education, somewhat on the margins of the formal education. It can be seen that the importance of the interpersonal relationship between the instructors and students serves as an example of project-based, goal-oriented teamwork in the overall design process and allowing for innovative thinking. This is clear evidence of the crucial role of the synergy in the design process.

The individual educational benefits for students have been focused on addressing the individual special needs and filling educational gaps, as well as the development of new initiatives, fresh and innovative thinking and creative thought. The workshop lectures and presentations have also contributed to improving students' communication skills and better understanding for the ideas.

The example of adoption of participating in architectural competitions during the summer training workshops in Pharos university in Alexandria, Egypt may encourage other universities in shifting the paradigm of architecture education into non-traditional environment. Architectural competitions are considered the easiest and cheapest form of unconventional design methods. Encouragement from instructors and staff to students is also needed so that they can achieve a better result in the future.

In basic terms, by participating in the competition, both institutions and students alike will benefit. Institutions also receive acknowledgement from a variety of stakeholders, particularly if students win the competition. This kind of mutual relationship, in the long run, will create a more sustainable architecture education system.

Therefore, it is concluded that the idea of the architectural competitions in summer training workshops is an educational method containing a wide range of factors that have a positive influence on local and global understanding of spatial, aesthetical, functional and policy problems should be encouraged and applied worldwide.

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