



Integrating Creative Methods in Teaching Architecture

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Abstract:

This research paper delves into the importance of teaching creativity in architecture and the various methodologies that can be employed to enhance the creative abilities of students. The study is based on best practice of teaching creativity in architecture found in the literature that the author incorporates in the five years' experience of teaching architecture and the observes outcomes and project results of students. The paper identified the pros & cons for each method and suggest; guidelines and frame of teaching creativity and recommend to develop these guidelines in the future research by conducting a pilot test to determine the most effective ways to incorporate them and measure their impact on student learning outcomes. Future research could focus on developing the identified guidelines and best practices. By doing so, the field can continue to evolve and optimize its pedagogical approaches, leading to better outcomes for students and the profession as a whole.

Introduction:

Architecture is a field that requires a lot of creativity and innovation. Integrating creative teaching methods into their education is essential to prepare future architects for the field's challenges.

Architecture is a creative discipline that involves designing and crafting structures, spaces, and environments that are functional, aesthetic, and meaningful to people. Teaching creativity in architecture is vital to the development of future architects who will be able to produce innovative and sustainable designs that meet the complex demands of society.

This Research explores various approaches to teaching creativity in architecture and the impact of these approaches on student learning Experience & design process.

After teaching for five years in the architecture department, the author is trying in this research to explore the most effective ways to integrate creative methods in teaching architecture and explain the methods that the author used and considered as a good practice of teaching based on observation and learning outcome resulted, and students project results.

Literature Review:

Benefits of Creative Teaching Methods

Before we dive into the different creative teaching methods, it is important to understand the benefits of using such methods in teaching architecture.

Creative teaching methods can help students:

- *Develop critical thinking skills:* Creative teaching methods require students to think outside the box and come up with innovative solutions that are essential in the field of architecture.
- *Enhance problem-solving abilities:* In architecture, problem-solving is a crucial skill. Creative teaching methods can help students develop this skill by challenging them to find creative solutions to complex problems.
- *Stimulate imagination and creativity:* Architecture is a field that requires a lot of creativity and imagination. Creative teaching methods can help students develop these skills by encouraging them to think creatively and explore new ideas.

The literature on creative teaching methods in architecture demonstrates that such methods can enhance student engagement, learning outcomes, and creativity. According to Kvan and Thilakaratne (2018), incorporating creative teaching methods, such as design thinking, problem-based learning, and collaborative learning, can promote critical thinking, problem-solving, and communication skills among architecture students. Additionally, these methods can help students develop a deeper understanding of the design process and improve their ability to apply theoretical concepts to practical design problems (Omar et al., 2020).

However, using creative teaching methods in architecture can also present challenges. For example, some students may struggle with the ambiguity and open-ended nature of creative assignments, while others may resist collaboration and prefer individual work (Goldschmidt & Wojtowicz, 2017). Moreover, incorporating creative methods in architecture education may require significant resources and time for preparation and implementation (Omar et al., 2020).

Despite the growing interest in creative teaching methods in architecture, there are still gaps in the literature that need to be addressed. For example, there is a need for empirical studies that investigate the effectiveness of specific creative methods in achieving learning outcomes and enhancing student creativity. Additionally, more research is needed to explore the challenges and opportunities of implementing creative methods in architecture education in different cultural and institutional contexts.

Approaches to teaching creativity in architecture:

- **Problem-based learning (PBL):** PBL is an active learning approach that involves students working collaboratively to solve real-world problems. In architecture, PBL can help students develop their creativity by exposing them to complex design problems that require innovative solutions. Studies show that PBL can enhance students' creative thinking, problem-solving, and communication skills (Hassanain & El-Sayed, 2021; Yehia, 2020).
- **Studio-based learning:** Studio-based learning is a traditional approach to teaching architecture that involves students working in a studio environment under the guidance of a faculty member. This approach provides a supportive and collaborative learning environment that encourages students to experiment with different design ideas and techniques. Studio-based learning can enhance students' creativity by providing them with opportunities to explore their creativity and develop their own design style (Bjork & Neumann, 2021).
- **Design thinking:** Design thinking is a human-centered approach to problem-solving that involves understanding the needs of users and developing solutions that meet those needs. In architecture, design thinking can help students develop their creativity by encouraging them to think outside the box and consider multiple perspectives when designing a building or space. Studies show that design thinking can enhance students' creativity, critical thinking, and problem-solving skills (Ghaffarianhoseini & Hwang, 2021; Kostakis, 2021).

Impact of teaching creativity in architecture:

Teaching creativity in architecture has several positive impacts on student learning outcomes. Studies show that students who are taught creativity in architecture are more likely to develop their own design style, think critically and analytically, and produce innovative and sustainable designs. Additionally, teaching creativity in architecture can enhance students' communication skills, teamwork, and leadership abilities (Al-Elaimat & Al-Obaidat, 2020; Yehia, 2020).

Teaching creativity in architecture is essential to developing future architects who can produce innovative and sustainable designs that meet the complex demands of society. Approaches such as problem-based learning, studio-based learning, and design thinking can enhance students' creativity and improve their learning outcomes. Further research is needed to explore the most effective approaches to teaching creativity in architecture and their impact on student learning outcomes.

Examples from teaching practice

There is a growing body of literature on effective ways to integrate creativity in teaching architecture.

Here are some examples that the author incorporates in that last five years of teaching architecture courses and founded in the literature:

- **Field Trips:** Field trips are an essential part of architectural education as they allow students to experience real-life architectural designs and structures. Field trips offer students a chance to study and analyze the built environment, interact with professionals in the field, and gain insights into the practical applications of architecture. Research has shown that field trips can significantly enhance student learning experiences and improve student engagement in the classroom (Bolívar et al., 2020).
- **Real Projects:** Real projects are another way to integrate practical learning experiences into architectural education. Real projects allow students to work on actual projects with real clients, deadlines, and budgets. Real projects offer students a chance to experience the challenges and rewards of working on a project from conception to completion. Real projects also provide students with valuable experience in project management, teamwork, and communication skills. Research has shown that real projects can significantly enhance student learning experiences and improve student engagement in the classroom (García-Alvarado & López-Santillán, 2021).
- **Design Competitions:** Design competitions provide students with a chance to showcase their creativity and innovation in the field of architecture. Design competitions can range from small-scale local competitions to national or international competitions. Participating in design competitions allows students to work on real-world design problems and develop their skills in conceptualizing, designing, and presenting their ideas. Design competitions also provide students with opportunities to network with professionals in the field and gain recognition for their work. Research has shown that participation in design competitions can significantly enhance student learning experiences and improve student engagement in the classroom (Kendall & Teicher, 2019).
- **Community-based project:** Community based project are another creative way to integrate practical learning experiences into architectural education. Community-based projects involve working with local communities to address real-world design problems and create meaningful architectural solutions. These projects provide students with opportunities to engage with communities, develop their communication and collaboration skills, and gain valuable hands-on experience in addressing complex design challenges. Community-based projects also promote social responsibility and ethical considerations in architectural design. Research has shown that community-based projects can significantly enhance student learning experiences and improve student engagement in the classroom (Sheppard et al., 2017). As such, incorporating community-based projects into architectural education can help

prepare students to be socially responsible architects who are committed to serving their communities.

- ***Creative Assignments and Project Briefs:*** Creative assignments and project briefs are essential components of architectural education as they foster creativity and innovative thinking in students. These assignments can vary in size and scope, from small-scale assignments to large-scale projects. They can be designed to address specific challenges or can be open-ended to encourage maximum creativity. These assignments provide opportunities for students to experiment with different design concepts and techniques, and develop their problem-solving, research, and critical thinking skills. Studies have shown that creative assignments and project briefs can significantly enhance student learning experiences and improve engagement in the classroom (Lange & Seemann, 2019).

In conclusion, the integration of field trips, real projects, design competitions, creative assignments, and project briefs in architectural education can significantly enhance student learning experiences and improve student engagement in the classroom. These practical learning experiences allow students to develop their skills and creativity, gain valuable experience in project management and teamwork, and interact with professionals in the field. As educators continue to explore new and creative ways to integrate practical learning experiences into architectural education, it is essential to recognize their importance in preparing students for successful careers in the field of architecture.

Methodology:

In this research, the author explains the most effective ways that the author found through the journey of teaching architecture in the last five years, aiming to highlight the creative methods integrated into teaching to improve the way of teaching and trying to find the best practice and develop guidelines.

This study employed qualitative research methods for the purpose of analyzing effective practices in teaching creativity. The author began by conducting a thorough literature review on techniques for teaching creativity, with the aim of identifying the key elements that contribute to effective teaching practices. Based on the findings of the literature review, the author was able to identify the best practices and determine the most effective teaching practices that could be integrated into their teaching approach. Furthermore, the author described their own practice of integrating creativity into teaching architecture over the past five years, along with written literature for each method and its associated pros and cons.

In addition to the above, the author provided examples from their own teaching experience to illustrate the effectiveness of each method used over the past five years. By providing practical examples, the author was able to further demonstrate the

benefits of integrating creativity into teaching practices. Overall, this study serves as a valuable resource for educators seeking to improve their teaching practices by incorporating effective techniques for teaching creativity.

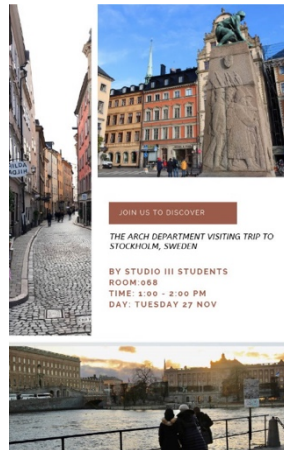
The author of this study observed a positive impact of integrating creativity into their teaching practices. Through the design process, the author noted improvements in the students' work and outcomes.

In conclusion, while there are limitations to this study, the qualitative analysis approach employed by the author provides valuable insights into the impact of integrating creativity into teaching practices. Future studies could benefit from incorporating both qualitative and quantitative methods to provide a more comprehensive assessment of the effectiveness of creativity in teaching practices. Description & Examples of creative teaching method the author implemented in the classroom.

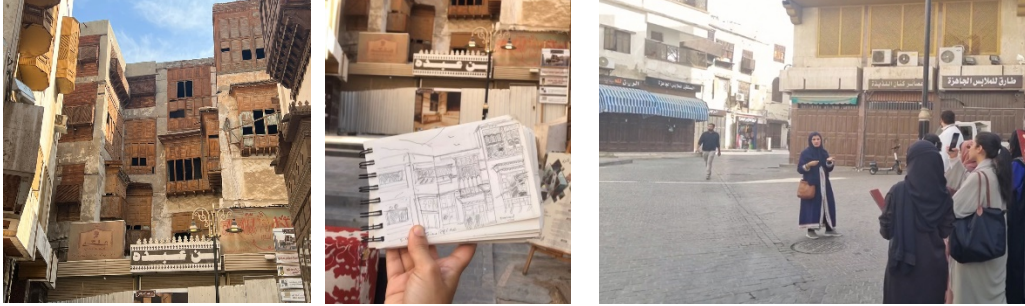
Field Trips:

Over the past five years of teaching architecture, the author has consistently incorporated field trips and site visits as crucial methods in studio projects. The organization and program of the trip are adapted to the project brief and type given to the students. Proper planning and coordination of these trips are crucial in providing students with a more comprehensive understanding of the project's type, location, context, and culture. As such, the author has organized various field trips for different courses.

- **Sweden field Trip:**



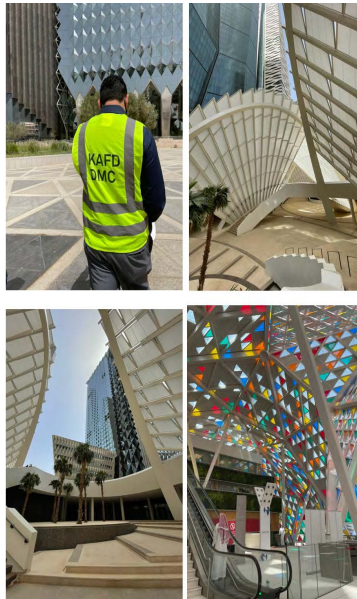
In 2019-2020, the author organized ARCH 3501 Studio III, focusing on contextual, cultural, and environmental design. Students visited Galma Stan in Sweden to design a wooden workshop for traditional crafts and a gallery. This international trip was the first of its kind, exposing students to new contexts and cultures, inspiring their work.



- **Historical Albalad field trip**

Albalad is a must-visit location to gain insights into Jeddah's culture and context, especially if the project is in the city. Visiting this historic district is always beneficial to observe ongoing renovations of the unique, centuries-old houses being converted into boutique hotels. It also provides an opportunity to explore the area's identity and distinct spaces. As part of the Freehand course, taking students to sketch can significantly enhance their sketching skills, teach them how to take visual notes, and help them learn from the past, particularly during the early formative years. This experience can enrich their visual memory and inspire creativity.

- **Riyadh field trip**



As part of the Comprehensive Design course aimed at designing a tower in Jeddah and Riyadh, a field trip to Riyadh was organized. The trip included visits to the PIF tower and KAFD King Abdullah Financial District in Riyadh, where the students gained a deeper understanding of the structural and electromechanical systems involved in building towers. The students were also inspired by renowned architects such as Zaha Hadid, who was involved in designing the KAFD. During the trip, the students had the opportunity to listen to architects in the field of architecture and construction, who shared their insights into how the tower was designed and functions. Overall, the trip was enjoyable.



- **Alula Field Trip**

Students in the Small-Scale Buildings & Sustainability Studio II program visited Alula to design a school aligned with the city's vision. They attended a presentation on Alula's culture and environment, visited historical sites, and met with the individual responsible for designing schools in the area. The students also gained practical

experience building with local materials. The trip provided a valuable opportunity to immerse themselves in the local community while designing a school that met their needs.

- **Field Trip to Abha:**

The author organized twice a trip to Abha city for the rich culture, natural environment, and incredible views that can be very rich for student inspiration and creativity enhancement. The researcher incorporates the visit into three courses in different projects and locations in Abha.



- **ARCH 2502 Studio II – Small-Scale Buildings & Sustainability.**

The author organized a one-day field trip to historical villages to teach students about traditional building techniques and materials, as well as the cultural context surrounding them. After the trip, students designed a primary school for the local community in Alyanfah that could also serve as a community center. This condensed approach allowed more students to attend and benefit without excessive costs. The experience enriched the learning experience in ARCH 2502 Studio II and helped foster creativity and inspire new ideas for the design process. Overall, the field trip was a valuable opportunity for practical knowledge and application to design projects.



- ARCH 3501 Studio III – Contextual, Cultural & Environmental Design.

The author took students to Tabab village in Abha to learn about its context and culture. During the visit, students engaged with the local community and identified their need for a women's retreat and empowerment center. The center's design will consider the village's context, culture, and environment and serve as a space for women to learn, interact, and develop new skills, improving their self-esteem and overall well-being. The center will be accessible to women from Tabaa and across the Kingdom. The students also explored the village's architecture and context.





- **AlJouf Field Trip:**

The author arranged a two-day excursion to Al-Jouf Province for architecture students to attend an international conference featuring presentations by scholars from prestigious institutions. The conference focused on research related to the Camel Site, home to the world's largest animal relief sculptures. The trip gave students valuable insights into Saudi Arabian values and traditions, and allowed them to deepen their understanding of ancient architecture and sketch historical sites in the kingdom.



- **Dammam Field Trip**

As part of a livable city course, the author organized a city visit to Dammam for students to understand the city and visit the Al-Murjan waterfront site. Students then proposed enhancements to the public realm, including social and activity aspects, accessibility, and network, as well as character and visual elements. These proposals will be carried out in collaboration with the quality-of-life program under the Ministry of Culture.

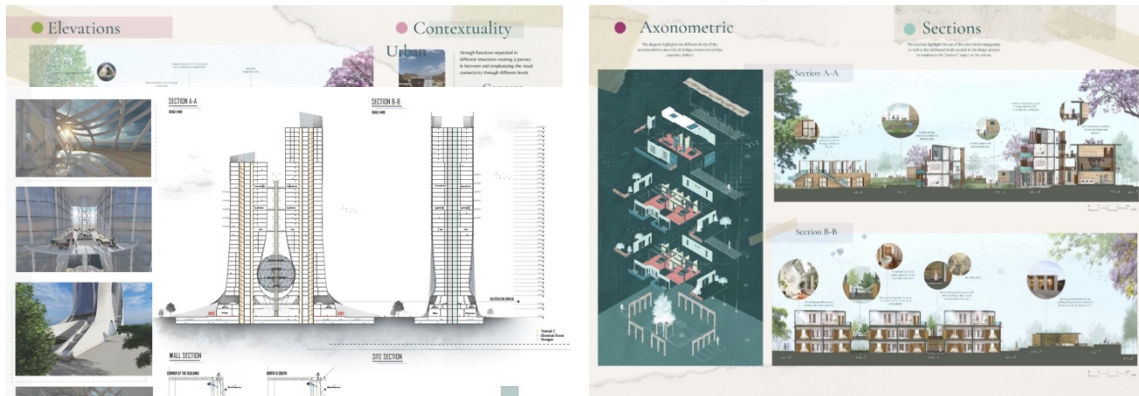
Real Projects

Over the past five years, the author has incorporated several real-world projects to give students practical experience in dealing with clients, managing budgets, and providing design solutions that meet clients' needs.

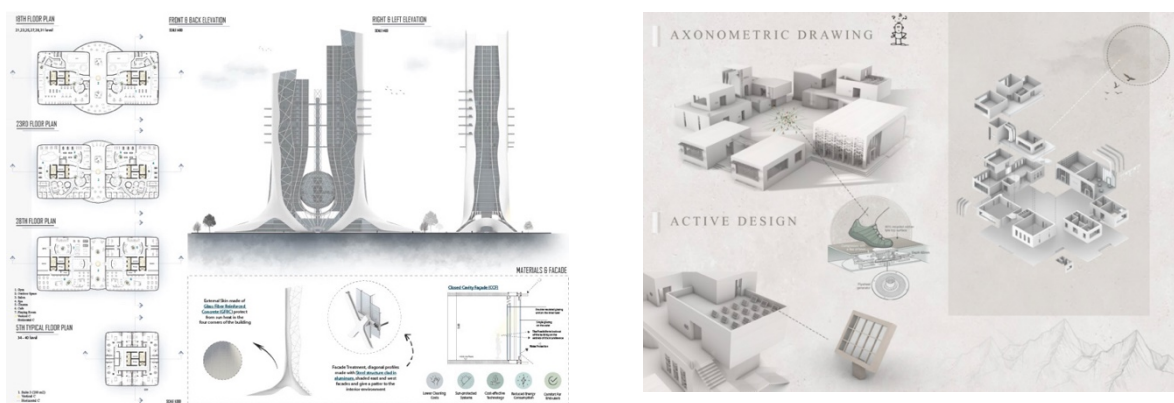


Students in an urban studio course collaborated with Al-Amanah Jeddah municipality to transform Prince Sultan Street into a walkable street and activate tactical urbanism. Jeddah Livability called for a pedestrianization of the street through tactical urbanism to enhance its quality. The project involved identifying opportunities

for open spaces and roundabouts and connecting the street with surrounding neighborhoods. Livability principles and tactical urbanism development were integrated into the street's design. The students aimed to prioritize pedestrianization and create a more livable urban environment through collaboration with Al-Amanah.



The students enrolled in Studio III, which emphasizes contextual, cultural, and environmental design, undertook a project for the development of a women's retreat and wellness center in Tabab village. The aim of the project was to empower women in the community. The client, who was a landowner and investor, collaborated closely with the students to ensure that their design met their requirements. The project presented various challenges and opportunities for the students, who had to engage in extensive research and analysis to create a design that aligned with the client's expectations.



During the Spring semester of 2021-2022, students in the Comprehensive design studio course were given the opportunity to work on a project for Emaar, which involved designing a hotel in Baylasan Bay, in King Abdullah Economic City (KAEC). To

gain a better understanding of the context, the students were allowed to visit KAEC, meet with the client, and visit the site.

Throughout the project, the students received valuable feedback from both professionals and clients, which proved instrumental in refining their designs and improving their understanding of the design process. Overall, this project provided students with a unique opportunity to gain practical experience in working with clients and professionals in the industry, which will benefit them in their future careers.

During the same semester, another real-world project was undertaken in the Studio II course, which focused on small-scale buildings and sustainability. The project involved designing a primary school in Alula for the Royal Commission of Alula (RCU). This client project provided students with an opportunity to gain practical experience in working with clients and understanding the complexities involved in designing a building that meets the needs of both the client and the community.



During a professional practice course in Fall 22-23, the author organized a mock job interview as a midterm exam for architecture students. Four firms, including three national and one international, participated to give students a realistic job interview experience and feedback. This approach provides students with valuable networking and career development opportunities, demonstrating innovative and effective pedagogy beyond traditional lectures.

In a professional practice course, students worked in groups to create a pitch deck and business plan for their own architecture firm as the final exam. This practical experience equipped students with valuable entrepreneurship and business management skills alongside their architectural training. By requiring critical thinking about starting a business and pitching to investors, the assignment prepared them for future careers.

Design Competition

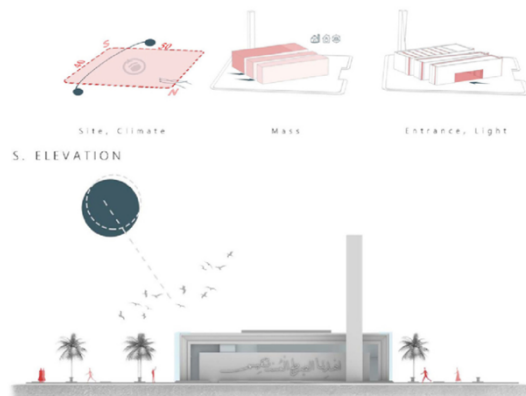
Over the past five years, the author has integrated various design competitions into the studio curriculum while teaching architecture. This approach aims to foster creativity and provide students with opportunities to showcase their potential and gain recognition in the design industry.



During the Spring semester of 2020-2021, the author encouraged student participation in the Reconstructing Destroyed Palestinian Villages competition through the urban design studio. The project holds significant ethical value as it prompted team collaboration and provided students with a socially responsible endeavor to develop their design skills and knowledge.



During the Fall semester of 2021-2022, the author presented students with a unique challenge in the form of designing a vertical city in Abha, with the aim of participating



in the Evolo 2022 skyscraper competition. One of the students was recognized for her outstanding work and had her project published on the Evolo Magazine Instagram account. This project provided students with a valuable opportunity to engage in a competitive design challenge while exploring innovative solutions to the complex challenges of urban design. Through this experience, students were able to develop their design skills and receive recognition for their creative work in a reputable industry publicatio

In Fall semester of 2022-2023, students in Studio III had the opportunity to participate in the Saudi Umran Society competition, which involved designing a Mosque in Al-Sud Neighborhood in Al-Madinah Al-Munawara. students will have the opportunity to engage with the historical evolution of mosques and explore how Islamic principles can be integrated into contemporary architectural designs. By participating in this competition, students had the opportunity to apply their knowledge of contextual, cultural, and environmental design to create a space that not only serves as a religious center but also as a hub for community activities and development and get recognition.

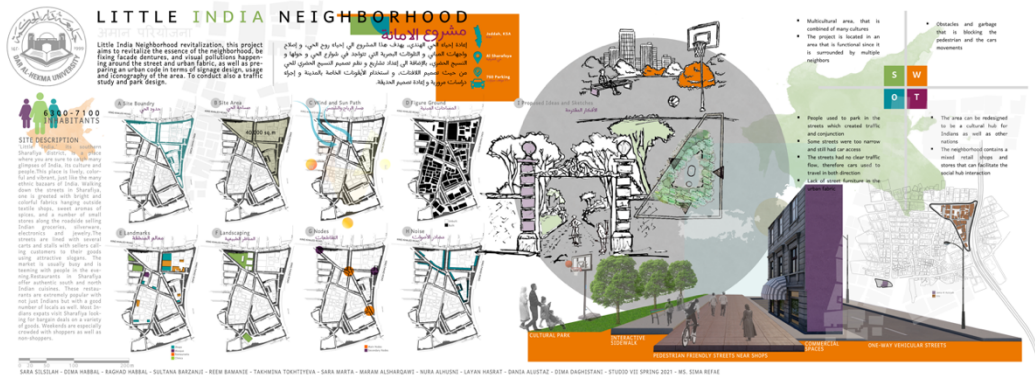
In Spring 2022-2023 the students in livable city course students are collaborating with the ministry of culture and the quality-of-life department in the ministry to regenerate Al-Murjan waterfront to be more livable and give proposals and solutions to enhance the livability and increase the quality of life in the waterfront and incorporating activities and fostering the Dammam identity and culture in the waterfront as a destination .

Community-based project:

The author places a strong emphasis on fostering student engagement with their local communities through design projects, recognizing the responsibility of future architects to address community issues.

- **Renovating the Chadian school**

Specifically, in the fall semester of 2018-2019, the author led a studio - II course focused on Small-Scale Buildings & Sustainability, where students were tasked with renovating a school in Chad. The project was conducted in collaboration with the Ihyaa group, a non-profit organization that seeks to improve the conditions of schools located in slum areas in Jeddah. Through this project, students were able to gain valuable experience in the principles of sustainability, applying them to the renovation of the Chadian school to improve its environmental, social, and economic conditions.



• **Developing Al-Sharafyih District in Jeddah**

The Amana Jeddah Municipality asked a university design school for help with visual and traffic-related issues in the Al Sharafayih district. The school's departments collaborated on the project and students participated in the urban design studio. They proposed solutions for vehicular traffic while promoting pedestrian and cycling activities, with collaboration from other departments. The project was relevant to course objectives.



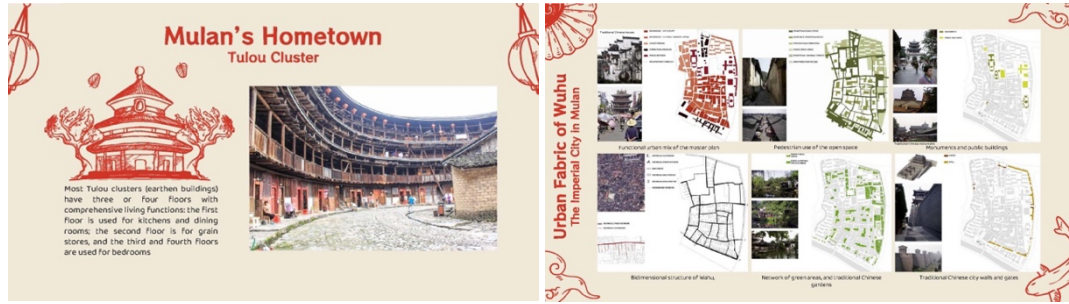
• **French school**

The author collaborated with students on a project promoting community engagement through design. The French school asked for help redesigning their hall and approached the author for a collaboration with the architecture department at Dar Al-Hekma University. The department provided a design proposal that was accepted, and the French school executed the design. The university was invited to the opening ceremony and recognized for their contribution.

- **Regenerating the Central Alula District with RCU**

In Spring 2022-2023, the author initiated another community engagement initiative in collaboration with the Royal Commission of Alula (RCU). The project involved participation from students enrolled in the Livable City course, Urban Theory course, and Urban Studio, with the aim of implementing the MP2 public realm and regeneration plan in Alula Centric. The project represents an opportunity for students to engage with the community and apply their knowledge and skills towards the regeneration of Alula Centric, in close collaboration with the RCU.

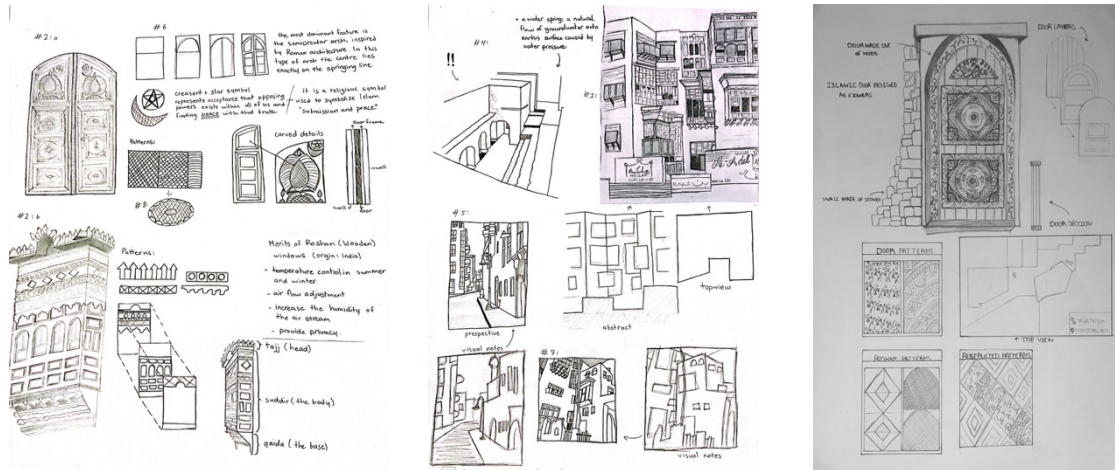
Creative Assignments and Project Briefs



- **Movie assignment**

In the Urban Theory and Housing course, the instructor tasks students with selecting a movie that explores social issues impacted by the urban and contextual environment, or political and economic circumstances affecting the social dimension.

The pedagogical approach to this task involves promoting student engagement and facilitating interactive learning experiences through the presentation of movies in class. By presenting their chosen films to the class, students will have the opportunity to demonstrate their understanding of the subject matter and engage in critical analysis of the film's themes and messages. This approach aims to enhance the educational experience of the students by fostering a dynamic and intellectually stimulating learning environment.



- **Visual note assignment**

The freehand drawing course used visual note-taking to teach students about architectural details in historic Jeddah. During a field trip, students took visual notes on the doorman, windows, and ornaments of a specific location. They reflected on their experiences of the environment and captured minute details in their freehand drawings. The assignment was conducted as a class, with all students remaining in the same spot. The outcomes were engaging and provided unique insights into the architectural features of the location. This methodology encourages creativity and critical thinking among students.

- **Hide and seek assignment.**

The author's midterm assignment promotes critical thinking and creativity among students by requiring them to develop a scenario or storyboard with two characters hiding from each other in a shared space without interaction. This innovative approach encourages students to think outside the box and apply their critical thinking skills to create a unique and engaging narrative. It enhances their creativity by exploring different perspectives and developing a compelling storyline, promoting student engagement overall.

Author Observation of student's performance:

The author's implementation of various creative methods in a course has yielded positive outcomes, including improved student performance during the design process, learning experience, and project success. The use of multiple creative methods has enhanced the overall course experience and facilitated a productive learning environment between students and instructors.

Over the last five years, the author has taught architecture courses and implemented five distinct teaching methods. Through observation, the author has analyzed the impact of these methods on student performance and the overall course experience.

Student feedback on the effectiveness of these methods – Course evaluation and

Comments:

The results of evaluations for various courses indicate that a majority of students have given high ratings ranging from 4.30 to 4.80. The feedback received has been positive, highlighting the studio or class environment as favorable for fostering creativity and critical thinking skills. However, some students have faced challenges in developing their creative and critical thinking abilities. In such cases, instructors have provided feedback aimed at improving these skills, rather than providing an easy solution. Despite the instructors' support, some students may still face limitations in their creative abilities and may prefer taking the easy way out. In some instances, they may feel uncomfortable when faced with demanding challenges.

Findings:

Following the incorporation of five teaching methods, an assessment was conducted to observe the Pros and Cons associated with each method. The evaluation aimed to identify potential advantages and disadvantages of each method to inform future instructional decisions. The assessment revealed several benefits and challenges associated with the different teaching methods.

Field trips

- **Pros:** Provide first-hand experience and exposure to cultural context and architecture; can inspire creativity and enhance learning experience.
- **Cons:** May be limited by cost and accessibility, which could result in inequitable opportunities for students.

Practical experience

- **Pros:** Offers opportunities for students to work with clients and professionals in the field, promoting networking and career development.
- **Cons:** May require additional resources and time to organize, and may limit the scope of the project to specific clients or industries.

Design competitions

- **Pros:** Can challenge students to push their creativity and teamwork skills, while offering opportunities for recognition and exposure in the industry.
- **Cons:** May create a competitive atmosphere that could be stressful for some students, and may not offer opportunities for all students to participate.

Community-based projects

- **Pros:** Can provide opportunities for students to engage in social responsibility, meaningful goal-setting, civic engagement, teamwork, and ethical design practices. It can promote positive social change and contribute to the betterment of society.
- **Cons:** May require significant time and effort, may have resource constraints, potential risks, complex stakeholder relationships, and limited impact. May not be feasible for all students to participate in due to various challenges and may not always lead to the desired outcomes.

Creative assignments and Project briefs

- **Pros:** Creative assignments can engage students, promote critical thinking, allow for personalization, and be enjoyable.
- **Cons:** Creative assignments can be time-consuming to plan and grade, challenging for some students, difficult to assess, and may require additional resources.

Overall, each method offers unique benefits and limitations that should be carefully considered when designing a curriculum. Combining several methods can provide a diverse and enriching learning experience that caters to a range of student interests and learning styles.

Discussion

When it comes to teaching creativity in architecture, there are a variety of methods that can be employed to help students develop their skills and abilities. Some of the methods that have been shown to be effective in this context include field trips, community-based projects, practical experience, design competitions, problem-based learning, and creative assignments.

In conclusion, there are a variety of methods that can be used to promote creativity in architecture, and educators should carefully consider which methods are best suited to the needs and learning styles of their students. By using a variety of different methods, educators can help to create a rich and diverse learning environment that empowers students to develop their creativity and innovation skills to the fullest extent possible.

As an academic writer, it is imperative to acknowledge the significance of skill acquisition and enhancement among students. It is, therefore, recommended that educators utilize diverse pedagogical approaches within a single course to cater to the varying needs and abilities of their students. Additionally, through a comprehensive literature review conducted over the past five years, the author has identified the best practices in teaching creativity in architecture. This research has led to identify guidelines and a framework that can be employed in the effective implementation of these best practices.

Guideline & framework for teaching creativity in architecture:

- **Hands-on learning:** Provide opportunities for students to engage in hands-on learning experiences, such as field trips, community-based projects, and practical training with professionals in the field. These experiences can help students to develop practical skills and gain a deeper understanding of the real-world challenges and opportunities in architecture.
- **Design competitions:** Encourage students to participate in design competitions and other creative assignments that challenge them to think outside the box and push their creative boundaries.
- **Problem-based learning:** Use problem-based learning techniques to help students develop their creative problem-solving skills. Provide students with real-world design problems and challenges, and encourage them to develop innovative and creative solutions.
- **Sketching and modeling:** Encourage students to use sketching and modeling techniques to explore different design ideas and to visualize their concepts in three-dimensional space. These techniques can help students to develop their creativity, technical skills, and visualization abilities.
- **Collaboration:** Emphasize the importance of collaboration and teamwork in the field of architecture. Encourage students to work together on projects and to share their ideas and insights with one another.
- **Diversity and cultural awareness:** Promote diversity and cultural awareness in the classroom and encourage students to explore different architectural styles and cultural contexts. This can help students to develop a deeper understanding of the ways in which architecture can be used to promote positive social change and to address the needs of diverse communities.

By following these six guidelines and framework, architecture educators can help students to develop their creativity and to become innovative and successful architects.

While these guidelines can be effective in promoting creativity in architecture students, there are some potential limitations to consider.

- **Limited resources:** Hands-on learning experiences, such as field trips and community-based projects, can be costly and time-consuming, and may not be feasible for all schools or programs.
- **Lack of diversity:** In some cases, architecture programs may lack diversity in terms of the backgrounds and perspectives of students and faculty. This can limit the range of ideas and approaches that are explored in the classroom.
- **Limited exposure to emerging technologies:** As technological advancements continue to shape the field of architecture, there may be a need for educators

to provide students with more exposure to emerging technologies and digital design tools.

Recommendations:

To optimize the efficacy of the guidelines presented in this research, it is strongly recommended to conduct a pilot test with a select group of faculty members and elicit their feedback. This pilot test will provide a valuable opportunity to refine and improve the guidelines based on the feedback received. Furthermore, it is advised to collaborate with other scholars and experts in the field to gather diverse perspectives and guidelines. This will promote a broader understanding of the issues at hand and ensure that the guidelines are comprehensive and applicable to a wide range of contexts. By incorporating these methods, the guidelines can be strengthened and made more effective for their intended purposes.

Conclusion:

The incorporation of various teaching methods, such as field trips, real projects, community-based projects, design competitions, and creative assignments, has been identified in the literature as a means of enhancing creativity in architecture education. The author's own experience with these methods over the past five years has demonstrated a positive impact on students' learning outcomes and design processes, with the potential to better prepare them for successful careers in the field. To foster creativity, it is recommended to provide diverse and blended learning experiences in the same course.

While these pedagogical approaches in architecture education have potential benefits, further research is necessary to determine the most effective ways to incorporate them and measure their impact on student learning outcomes. Future research could focus on developing guidelines and best practices for field trips, real projects, community-based projects, design competitions, and creative assignments. By doing so, the field can continue to evolve and optimize its pedagogical approaches, leading to better outcomes for students and the profession as a whole.

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