The Impact of Designing Real-World Buildings and Spaces as an Educational Tool in Developing Creative Thinking Skills Among Future Designers

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Abstract:

Contemporary educational theories argue that creativity is not an innate talent alone but a structured, learnable, and developable competency. This is particularly evident in design fields such as architecture and interior design, where professionals must not only work with materials and technical constraints but also respond to the behavioral, cultural, and psychological needs of users within a space. A recurring challenge in design education is the disconnect between theoretical knowledge and its application in real-life, multidimensional design challenges.

This research explores how integrating creative thinking strategies into design education—through direct engagement with real-world projects-can enhance students' readiness for the professional market. The study assumes that structured exposure to real environmental and societal problems helps foster innovation, elevates student engagement, and equips them with practical tools to solve design challenges.

Using an applied research approach, this study monitored a group of interior design students at Taibah University as they undertook community-oriented design projects. These projects targeted actual spatial and functional needs within the university and the city of Madinah. Students were encouraged to identify existing design problems and propose context-sensitive and innovative solutions. The research findings confirm that working on real-world spaces significantly enhances creative thinking, spatial problem-solving, and student satisfaction. It supports the idea that such pedagogical models not only improve technical and conceptual skills but also help shape a generation of design professionals capable of contributing meaningfully to the built environment and broader society.

Keywords :

Creative Thinking, Problem-Solving Strategies, Real-World Projects

Section One: The Role of Modern Educational Strategies in Stimulating Creative Thinking

Creative thinking is widely regarded as an essential competency for future designers, empowering them to generate innovative and effective solutions within complex and rapidly changing environments. As the demands on designers evolve, educational strategies must evolve correspondingly to cultivate this skill set. Modern educational approaches emphasize active learning, student-centered methodologies, and the integration of cognitive and affective dimensions to effectively stimulate creativity (Zhan, He, & Zhong, 2024).

1.1 Creative Problem-Solving Strategy

Creative Problem Solving (CPS) is an educational approach that guides learners through structured stages—problem identification, idea generation, evaluation, and implementation—to foster innovative thinking (Fatmawati, Jannah, & Sasmita, 2022). This method balances divergent thinking, which encourages many ideas, with convergent thinking, focusing on selecting effective solutions (Zhan, He, & Zhong, 2024).

CPS enhances cognitive flexibility by encouraging multiple perspectives, crucial for design challenges that are often complex and ill-defined (Dorst, 2015). Research shows CPS improves creative skills by engaging students in authentic problem-solving tasks, promoting exploration and reflection (Zhan et al., 2024; Fatmawati et al., 2022).

Additionally, CPS supports collaboration, mirroring real-world design teamwork, which enriches creative outcomes (Setyosari, Kuswandi, & Ulfa, 2023). Overall, CPS is effective in developing creative thinking and essential for future designers.

Figure 1 Creative Problem Solving (CPS)
https://www.creativeeducationfoundation.org/what-is-cps/

Creative thinking in design involves several key traits that enable designers to generate innovative and effective solutions.

- **Originality** is crucial, as it allows designers to produce novel ideas by reframing problems and challenging existing assumptions, a process known as "frame innovation" (Dorst, 2015).

- **Fluency** refers to the ability to generate many ideas, encouraging exploration beyond initial concepts and enhancing flexibility (Cross, 2023).

- **Flexibility** is the capacity to shift perspectives and switch between divergent (idea generation) and convergent (idea evaluation) thinking, enabling designers to adapt to complex problems (Cross, 2023).
- **Synthesis** involves combining diverse ideas and knowledge into coherent solutions, balancing aesthetics, functionality, and user needs (Dorst, 2015).
- **Iterative thinking**—through repeated prototyping and refinement—helps improve designs continuously (Cross, 2023).
- **Empathy** allows designers to understand user experiences deeply, fostering human-centered innovations (Liu et al., 2024).

1.3 Developing Creative Thinking in Architecture and Interior Design

Developing creative thinking skills in architecture and interior design requires intentional educational approaches that engage students in active, reflective, and experiential learning. Unlike traditional rote learning, these methods emphasize problem-solving, collaboration, and real-world application to stimulate innovation.

One effective way to nurture creativity is through **design thinking pedagogy**, which encourages learners to empathize with users, define problems clearly, ideate freely, prototype rapidly, and test solutions iteratively (Pimental, 2023). This approach aligns well with the cyclical nature of architectural and interior design processes, enabling students to embrace ambiguity and complexity.

Another critical factor is addressing the **emotional and cognitive aspects of learning**. Academic stress and emotional states can significantly influence creativity. Research suggests that environments that reduce stress and promote positive academic emotions enhance students' capacity to think creatively and take intellectual risks (Lin & Chen, 2024). Thus, creating supportive, psychologically safe spaces in design education is fundamental.

Collaborative learning environments further promote creative development by exposing students to diverse perspectives and encouraging dialogue. Working in teams simulates real-world interdisciplinary projects common in architecture and interior design, fostering flexibility and openness to new ideas (Zhang et al., 2023).

Additionally, incorporating **creative problem-solving (CPS) strategies** into curricula trains students to systematically explore problems and generate innovative solutions (Fatmawati, Jannah, & Sasmita, 2022). CPS frameworks guide learners through stages of divergent and convergent thinking, helping them balance originality with feasibility.

Finally, **simulation and virtual design studios** offer experiential learning opportunities where students can experiment without real-world constraints, reflect on feedback, and refine their creative decisions (Kvan, 2001). These environments foster iterative development and enhance spatial and contextual understanding crucial for architecture and interior design.

In summary, developing creative thinking in these fields depends on a combination of design thinking methodologies, emotional support, collaborative practices, structured problem-solving strategies, and experiential learning through simulations.

1.4 Stages of the Creative Problem-Solving Process

The creative problem-solving (CPS) process is a systematic approach that guides designers through generating innovative solutions by balancing divergent and convergent thinking. It consists of several distinct stages, each critical for fostering creativity and effective design outcomes.

- **Problem Identification and Understanding**: This initial stage involves recognizing and clearly defining the problem or design challenge. Accurate framing is essential, as it influences all subsequent steps. Designers must engage deeply with the context and users need to ensure the problem is well understood (Dorst, 2015).
- **Idea Generation (Divergent Thinking)**: At this stage, designers brainstorm multiple ideas without judgment, encouraging fluency and originality. Generating a wide range of potential solutions helps break away from conventional thinking and opens creative possibilities (Cross, 2023).
- **Idea Evaluation and Selection (Convergent Thinking)**: Designers critically assess the generated ideas to identify feasible and effective solutions. This involves analyzing constraints, resources, and user requirements to narrow down the options (Cross, 2023).
- **Implementation and Prototyping**: Selected ideas are developed into tangible prototypes or models. This hands-on phase allows designers to explore practical aspects, identify flaws, and refine concepts iteratively (Kvan, 2001).
- **Testing and Feedback**: Prototypes are tested in real or simulated environments to gather feedback from users and stakeholders. This stage supports reflective learning and continuous improvement of the design solution (Cross, 2023).
- **Reflection and Iteration**: Creative problem-solving is cyclical; designers revisit earlier stages based on feedback and insights, refining their solutions through multiple iterations (Dorst, 2015).

The CPS process is central to cultivating creative thinking in design education, enabling students to approach complex problems methodically while maintaining openness to innovation (Fatmawati, Jannah, & Sasmita, 2022). Emphasizing these stages in architectural and interior design curricula prepares future designers to develop robust, original, and user-centered solutions.

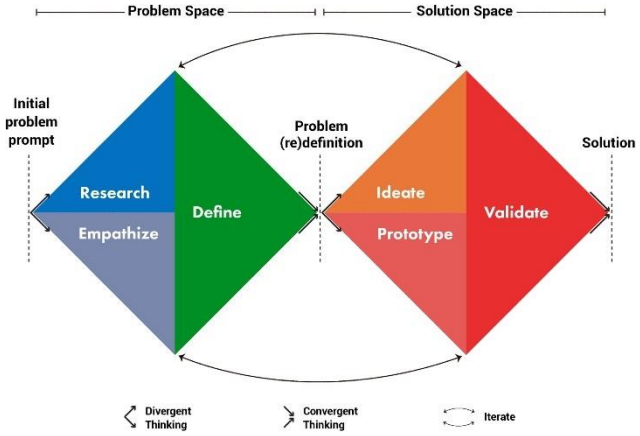


Figure 2: Stages of the Creative Problem-Solving Process
https://www.sciencedirect.com/science/article/pii/S1871187125000082

1.5 Simulation Strategy in Realistic Project Design and Its Role in Creative Thinking

Simulation is a powerful educational strategy that mimics real-world design scenarios to enhance learning and creative thinking among future architects and interior designers. By engaging students in realistic project simulations, educators create immersive environments where learners can experiment, take risks, and apply theoretical knowledge practically (Kvan, 2001).

1.5.1 Importance of Simulation in Design

Simulation provides a safe, controlled setting that encourages exploration and innovation without the high stakes of real-world failure. It facilitates the development of critical creative thinking skills such as problem identification, ideation, and iterative refinement. Through simulated projects, students experience complex design challenges involving spatial, functional, social, and environmental considerations, which fosters holistic thinking (Melles, Howard, & Thompson-Whiteside, 2012).

Moreover, simulation promotes empathy by allowing designers to step into the shoes of users, understanding their needs and behaviors more deeply, which is vital for human-centered design (Liu et al., 2024). This engagement increases motivation and commitment to the design process, ultimately improving creative outcomes.

1.5.2 Steps of the Simulation Process

The simulation strategy typically follows a structured process:

- **Scenario Development**: Defining realistic project briefs that reflect actual architectural or interior design challenges, including constraints, goals, and user profiles (Kvan, 2001).
- **Role Playing and Immersion**: Participants assume various roles (e.g., client, designer, user) to experience different perspectives and enhance understanding of project complexities (Melles et al., 2012).
- **Problem-Solving and Ideation**: Students brainstorm, generate ideas, and develop preliminary solutions within the simulated context, encouraging creativity and flexibility.
- **Prototyping and Testing**: Designs are modeled physically or digitally, enabling iterative testing and refinement based on feedback and observations (Kvan, 2001).
- **Reflection and Evaluation**: Participants analyze the outcomes, reflect on their decisions, and identify lessons learned to improve future design processes (Melles et al., 2012).

Simulation as an educational tool thus bridges the gap between theory and practice, fostering creative thinking by providing experiential learning that mirrors professional design environments (Pimental, 2023). Integrating simulation into architecture and interior design education equips students with the skills to innovate thoughtfully and confidently in real-world settings.

Section Two: Real-World Design and Its Impact on Education and Creative Thinking

Integrating real-world design projects into educational curricula plays a pivotal role in bridging the gap between theoretical knowledge and practical application. This approach enriches students' learning experiences by immersing them in authentic design challenges, which naturally enhance their creative thinking skills through engagement with real constraints and complexities.

2.1 Experiential Learning and Real-Project Design

Experiential learning, characterized by active participation in real design projects, fosters profound cognitive and emotional involvement. According to Kvan (2001), engaging with tangible design problems propels students beyond abstract concepts into applied creativity, where they must navigate real-world factors such as budgets, client expectations, and environmental concerns. This immersion not only grounds learning in reality but also develops problem-solving skills that are essential for professional practice. Lin and Chen (2024) further highlight that such contextualized learning reduces cognitive overload by helping students manage stress effectively, thereby supporting creative performance in challenging situations.

2.2 Role of Design Studios in Enhancing Creative Thinking

Design studios, whether physical spaces or virtual platforms, serve as critical environments for cultivating creativity. These studios facilitate collaborative, iterative processes where students can prototype, receive critique, and refine their ideas continuously. Kvan (2001) emphasizes that virtual design studios enhance learning by supporting both asynchronous and synchronous collaboration, thus enabling richer feedback and reflection opportunities. Moreover, Liu et al. (2024) stress the importance of empathy-driven design thinking practiced in studios, which deepens students' understanding of user needs. This empathy fosters socially responsible, innovative, and human-centered design solutions.

Figure 3: Role of Design Studios in Enhancing Creative Thinking
https://www.interaction-design.org/literature/article/what-is-design-thinking-and-why-is-it-so-popular

2.3 Design as a Creative Problem-Solving Process

The design process inherently involves managing ambiguity, balancing multiple constraints, and blending analytical and imaginative thinking. Cross (2023) explains that real-world design tasks compel students to negotiate between diverse requirements while still pursuing innovative results. Dorst's (2015) concept of "frame innovation" or problem reframing is especially relevant, as it encourages designers to shift perspectives, uncover new possibilities, and break free from conventional thinking patterns thus expanding the scope of creativity in design.

2.4 Impact of Designing Real Buildings and Spaces on Creative Skills

Designing real buildings and spaces challenges students to apply knowledge within real constraints like site conditions, client needs, and sustainability. This practical experience enhances creative thinking by encouraging innovative problem-solving within realistic limits

(Luthfia, 2024). Fatmawati et al. (2022) found that such projects improve students' divergent and convergent thinking skills.

Setyosari et al. (2023) highlight that authentic design tasks foster cognitive flexibility, helping students adapt to new challenges and develop resilience. Thus, real-world design education effectively develops creative skills by linking theory with practice and promoting innovative, context-sensitive solutions.

2.5 Empathy and Human-Centered Design in Real Projects

Empathy has emerged as a cornerstone in design education, underpinning creativity through the alignment of design outcomes with human experiences and needs. Liu et al. (2024) discusses empathy design thinking as a process that cultivates creative minds capable of generating solutions resonant with users' emotional and practical realities. This human-centered approach encourages students to adopt a user-focused mindset, which is essential for creating meaningful, innovative, and socially impactful architectural and spatial designs.

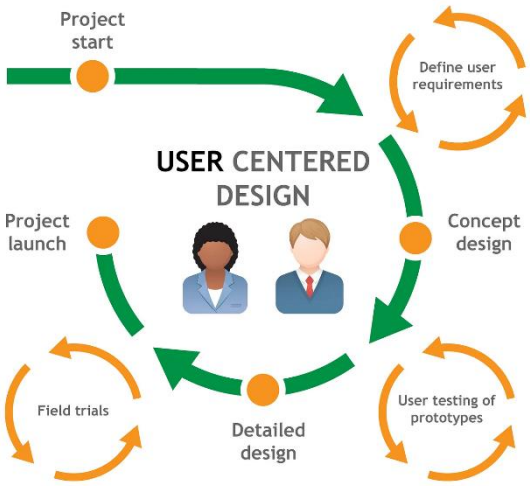


Figure 4: Human-Centered Design
https://medium.com/@diaziranian/user-centered-design-b763ff907cbd

Section three: Examples of Educational Experiences in the Interior Design Department Linking Academic Study with Practical Application

In recent years, the Interior Design Department at the College of Design and Arts, Taibah University, has adopted a developmental plan focused on teaching interior design to female students by relying on a strategy of solving actual, tangible design problems in a creative manner across various levels of students' thinking in multiple courses. This is achieved by selecting problems related to real buildings and spaces and proposing creative design solution alternatives that successfully meet functional requirements while considering aesthetic aspects. This approach helps enrich the educational process and links it closely to labor market needs.

Below are some educational experiences from different courses within the Interior Design program.

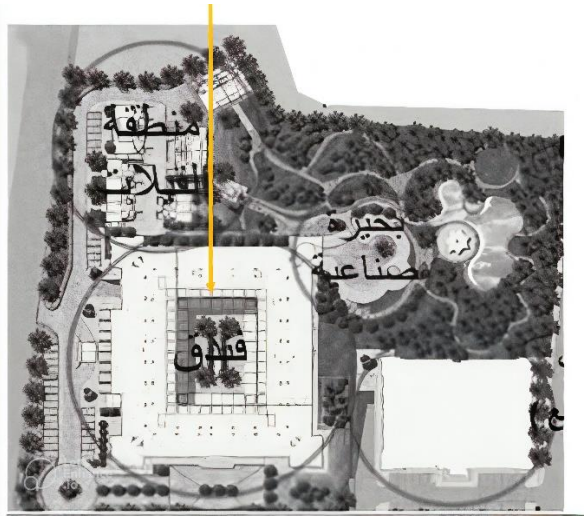
Table 1: Application in Interior Design Studio 4 (Tourism Design)			
Course Title	**Course Instructor**	**Project Title**	**Program Name**
Tourism Design INDS 421	Dr. Hanan Eissa Dr. Marwa Hussein	Al-Madina Orchards Resort	Bachelor of Interior Design
Student Design		Ola Yasser Sharif	

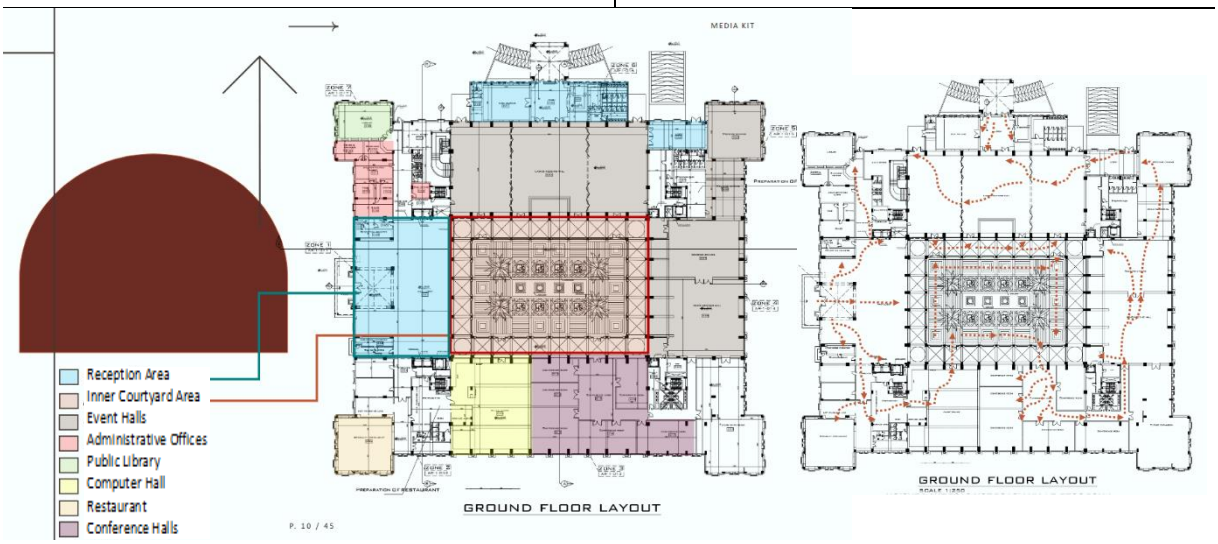
Work Plan

Introducing students to the nature and types of tourism facilities through field studies of existing sites, reviewing design standards for tourism buildings, analyzing comparable projects, and examining floor plans and spatial relationships. The course explores problems in both interior and exterior design and develops various creative solutions to express and implement the design concept. It focuses on modifying interior spaces within architectural constraints to meet tourism goals, while understanding the impact of modern technologies on design—especially lighting distribution in tourism buildings. Traditional heritage-inspired designs are also incorporated. The course concludes with the submission of a fully developed final project

Teaching Strategies

Problem Solving – Theoretical Lectures – Dialogue and Discussion – Brainstorming – Collaborative Learning – Simulation – Practical Demonstration.





Ground floor layout of a public building, showing a **color-coded functional zoning** key.

Design Concept

A real-life project under construction: A hotel resort in Al-Madinah with designs inspired by Islamic architecture. The total area of the project is 120,000 square meters, aiming to provide a comfortable experience for visitors. It is located just 7 kilometers from the Holy Mosque.

Work Stages

- Site study through field visits.
- Research on the nature of tourism activity in Al-Madinah.
- Analysis of floor plans focusing on architectural spaces, circulation routes, service areas, functional relationships, and horizontal/vertical connections.
- Brainstorming sessions to determine and select the design concept.
- Expressing the design idea and reviewing it with the instructor.
- Solving architectural and interior design problems within the building.
- Drawing final floor plans with furniture layouts and detailed sectional drawings.
- Producig perspective renderings for the designed spaces.

Submission of the complete final project with architectural visualization.

SEC. 1-1

RECEPTION PLAN

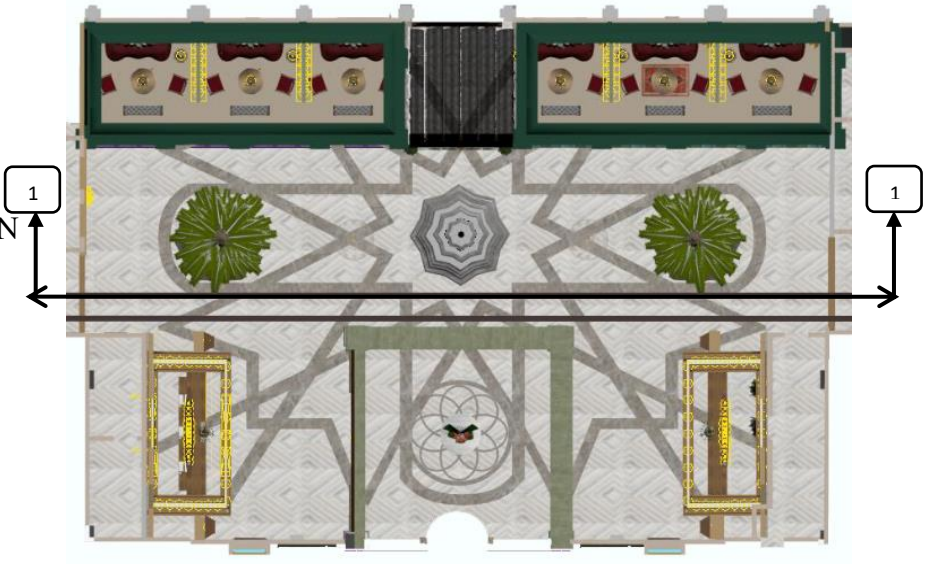


Table 2: Application in Interior Design Studio 3 (Administrative Design)

Course Title	Course Instructor	Project Title	Program Name
Commercial Design Studio INDS 321	Dr. Marwa Hussein Tawfiq	Redesign of King Fahd Park Walk Using Containers	Bachelor of Interior Design
Student Design		□ Safa Aasi □ Raghad Al-Saedi □ Arwa Al-Waqdan	□ Manar Al-Omari □ Mayasem Al-Hudhali

Work Plan

"The assignment involves delivering a theoretical lecture to persuade students of the necessity of working on real buildings and spaces. This includes explaining how to reuse and repurpose containers and highlighting their economic importance. The lecture should also cover leveraging this approach to create commercial complexes that serve a specific walkway in Madinah.

The subsequent steps include:

1. Dividing students into groups to collaboratively design the facades of the containers, aiming to create a visual identity suitable for the walkway's environment. Simultaneously, each student will design a container with a different commercial activity, ensuring the facade visually expresses the nature of that activity.
2. Specifying the dimensions of the containers and developing design solutions appropriate for the intended commercial use.
3. Reviewing the proposed designs and collaboratively working on the layout of the containers within the walkway.
4. Approving the final design."

Teaching Strategies

Problem-Solving Strategy - Theoretical Lecture - Dialogue and Discussion - Brainstorming - Collaborative Learning - Simulation - Practical Demonstration

Work Stages

- Site analysis through field visits.
- Conducting research on the nature of the commercial activity and its suitability for the proposed walkway.
- Initiating sketches and reviewing them with the course instructor.
- Approving the final project and having it judged by professors in the same specialization.

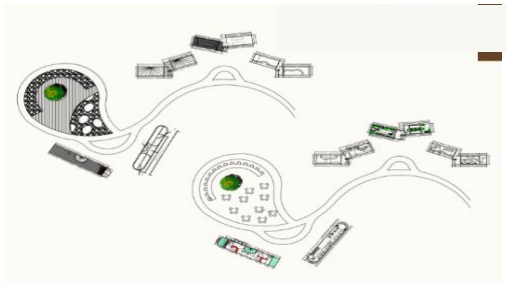
Design Concept

The project is based on abstract organic thought/concept.

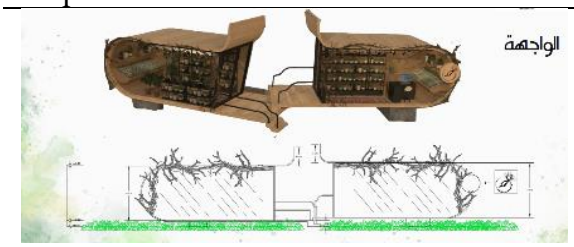
https://www.google.com/maps/place/

Open café in the outdoor area

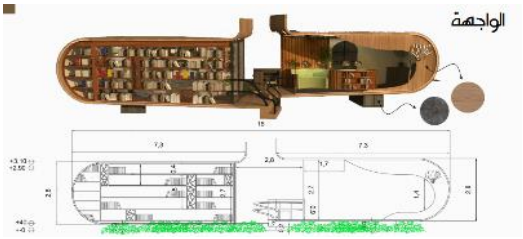
24°25'11.5"N 39°36'18.2"E/



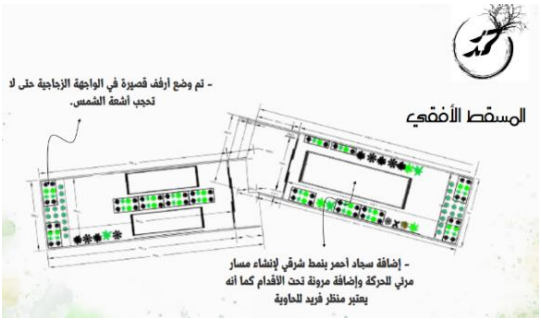
The project includes diverse commercial spaces: "Sura'a" retail, a bicycle and skate shoe caravan, "Rawa'a" retail with a library/reading area, and "Sarmad," a repurposed container for plant sales.



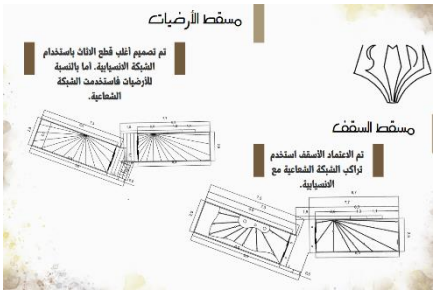
The front facade was designed using glass to allow sunlight in, making the user feel like they are part of nature even while inside.



The library facade is a curved glass front, allowing for the maximum integration with nature.



A bamboo screen was placed on the front facade to block direct sunlight.



Most of the floor tiles were designed using a rectangular grid. For the diagonal elements, a radial grid was used.

Building Exterior of Decorative Plant Store

The library facade Exterior

Table 3: Application in Graduation Project – Car Maintenance Center

Course Title	Course Instructor	Project Title	Program Name
Graduation Project INDS 492	Dr. Dalia Mahmoud Ibrahim	Esda'a – Car Maintenance Center	Bachelor of Interior Design
Student Design		Fatimah Al-Nakhli	

Work Plan

1. Defining the project idea based on a relative's need for a car maintenance center design.
2. Studying user needs, understanding the requirements of workers regarding personal spaces, appropriate lighting, good ventilation, and providing short relaxation areas, as well as customer needs in terms of comfortable waiting areas and the ability to track work progress.
3. Studying design concepts for a healthy work environment, identity, and aesthetic-functional balance.
4. Studying the site and project plan and applying the concepts resulting from the study in selecting a suitable layout distribution.
5. Adopting the appropriate designs for the design concept.

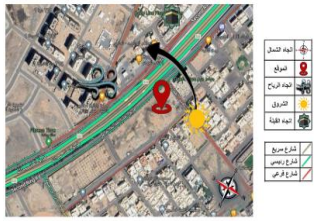
Teaching Strategies

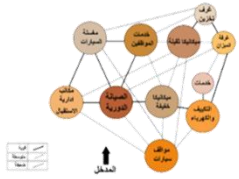
Problem-Solving Strategy - Theoretical Lecture - Dialogue and Discussion - Brainstorming - Collaborative Learning - Simulation - Practical Demonstration

Work Idea

Designing a car maintenance center by applying interior design principles in workshops and small factories, and improving the work environment to increase employee efficiency and productivity, and enhance the quality of services provided.
Improving the customer experience by providing comfortable waiting areas and libraries or entertainment facilities for customers while waiting for their cars.

Research Topic	Existence of a need to design a car repair and maintenance workshop in the Madinah region of the Kingdom of Saudi Arabia.
Research Problem	Lack of interior design and environmental control in small factories and car workshops harms production, service, and worker health.
Hypotheses	Enhancing the work environment in car maintenance workshops improves worker health, safety, and overall productivity.
Aims	Visual Identity Integration - Improving Customer Experience - Designing Inspiring Workspaces - Providing a Comfortable Work Environment - Improving Brand Image - Updating Technologies and Facilities - Achieving Balance Between Aesthetics and Functionality

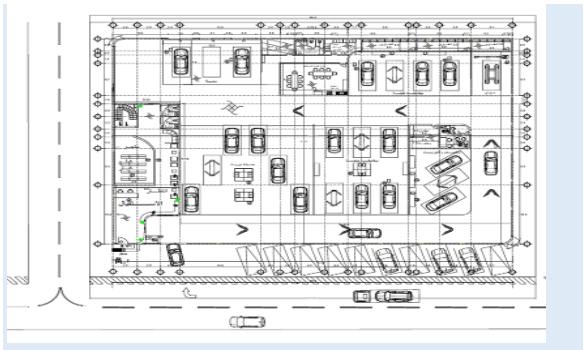




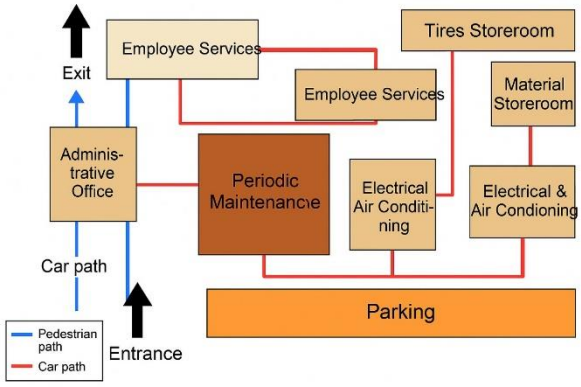
Practical Application

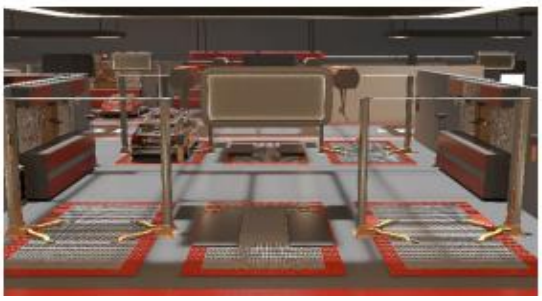
Developing experimental sketches and discussing design solutions through dialogue and discussion, brainstorming, and selecting the appropriate floor plan. Applying the simulation methodology, a design model was created according to the chosen design. To address the issue of tool mobility within the center, saving time and facilitating work, the problem-solving methodology was applied by creating design proposals for an auxiliary furniture unit for the center, considering suitable materials and dimensions.

Floor Plan of the Center



Space Distribution and Circulation Paths





Furniture Unit Model

Table 6: Application in Furniture Design Course			
Course Title	Course Instructor	Project Title	Program Name
Furniture Design	Dr. Dalia Mahmoud Ibrahim	Abjad Hawaz Table – Iqbal Table	Bachelor of Interior Design
Student Design		Rafal Jablawi Alaa Al-Dosari (Iqbal Table) [1]	Abrar Al-Sindi Sarah Bakhsh (Abjad Hawaz Table) [2]

Teaching Strategies

Problem-Solving Strategy -Theoretical Lecture - Dialogue and Discussion - Brainstorming - Collaborative Learning - Simulation - Practical Demonstration

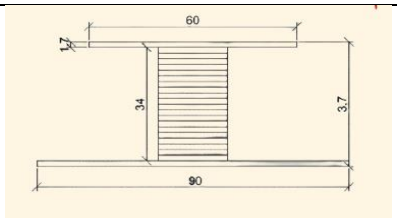
Work Plan	**Objective**
1. Delivering a theoretical lecture to clarify the parametric design concept and how to utilize it in designs that emphasize Arab identity. 2. Students selecting different methods to showcase the concept. 3. Developing design ideas. 4. Reviewing the proposed designs. **5.** Approving the final design.	This project aims to design furniture units incorporating Arabic calligraphy to emphasize Arab identity and enrich it. It merges art, design, and heritage, presenting a novel vision for the concept of parametric furniture with an Arab perspective**.**

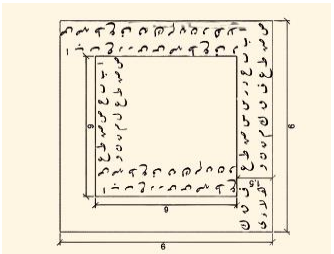
1. Studying the relationships between Arabic calligraphy & different ways of representing it.
2. Researching suitable ideas and methods for interweaving letters using the parametric concept.
3. Developing designs that embody the parametric concept of Arabic calligraphy.
4. Selecting the appropriate design and creating projections for clarification in preparation for execution.
5. Creating a model to simulate the original form of the project to ensure students understand the idea before implementation.
6. Executing the design in its original size and with appropriate materials.

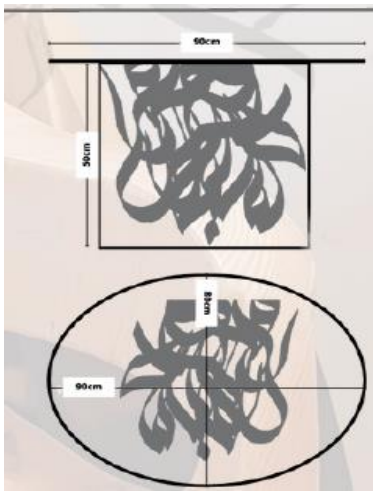
Project Idea

(Iqbal Table) [1] Designing a table ("Iqbal") with vertically arranged squares and letters inscribed on the edges, integrating Arabic calligraphy into contemporary furniture designs, thereby lending a novel and innovative character to the furniture piece.	(Abjad Hawaz Table) [2] Designing a table ("Abjad Hawas") with randomly interwoven Arabic letters, where their integration within the design creates captivating patterns and shapes that enhance the furniture's artistic value, offering a different design perspective from various angles.

Vertical and Horizontal Projections

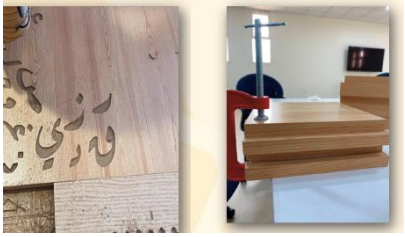






Models of Executed Table inspired by Arabic calligraphy

Implementation Stages



Implemented Furniture

Section four: A Survey Study of Interior Design Graduates on the Effectiveness of Designing Real Buildings and Spaces in Stimulating Creative Thinking and Problem-Solving

4-1 Survey Objective:

To investigate the impact of teaching and learning design through the Creative Problem-Solving Strategy by engaging students in designing realistic and tangible buildings and spaces.

In light of modern educational trends that emphasize aligning university outcomes with labor market demands, academic institutions are increasingly adopting interactive teaching methods that promote creative thinking and problem-solving among students. One of the most effective of these methods in interior design education is the integration of real-world design projects into course curricula. Such projects enable students to engage with authentic challenges within realistic environments, thereby enhancing their ability to apply theoretical knowledge in practical, impactful ways.

This survey was developed to assess the effectiveness of real-world spatial and architectural design assignments implemented in the "Interior Design Studio" course at Taibah University, as perceived by recent graduates of the Interior Design Department who have experienced this approach in recent academic years. The aim of the questionnaire is to evaluate the impact of experiential learning on a range of core competencies, including creative thinking, design decision-making, problem-solving ability, and career readiness.

In addition, the survey seeks to measure graduate satisfaction with this learning experience and to identify potential areas for improvement. The results are intended to serve as a foundation for refining the academic curriculum and formulating actionable recommendations that enhance the quality of interior design education—ensuring it meets contemporary professional standards and fosters sustainable innovation.

4-2 Survey Results Analysis

Total participants: 107 Interior Design graduates

Target group: Interior Design alumni – Taibah University

Objective: To assess the effectiveness of real-world architectural and spatial design projects in enhancing creative thinking and problem-solving abilities.

4-3 Background Information

Item	Percentage
Graduated in 1445 AH	67%
Graduated in 1444 AH	19%
Graduated in 1443 AH	14%

Analysis: The high participation rate from the most recent graduating class (1445 AH) reflects growing awareness among students about the importance of integrating real-world design in education.

4-4 Relevance to Specialization and Job Market

- **Currently working in the field:** Only 33.6%
- **Not yet employed in the field:** 66.4%
- **Participated in real-world projects at the university:** 55.1%
- **Did not participate:** 44.9%

Analysis: The significant percentage of graduates who engaged in real design projects at the university highlights the value of incorporating applied experiences in the curriculum, though broader participation is still needed.

4-5 Impact of Real-World Design on Educational Quality

Statement	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree
Real-world design is effective in education	57.9%	8%	11.2%	7%	15.9%
It enhanced my technical expertise	46.7%	21.5%	12.1%	4.7%	15%

Analysis: The vast majority affirmed that real-world design improves learning outcomes and boosts students' expertise, demonstrating a direct correlation between practical application and professional competency.

4-6 Practical Value of the Experience

- **Key benefits as perceived by students:**
  - Readiness for the job market
  - Understanding real-world execution
  - Taking on professional responsibility
  - Studying real user needs

Analysis: Responses indicate that integrating real design projects not only enriches educational experience but also links it directly with industry expectations.

4-7 Overall Satisfaction and Repetition of the Experience

Item	Strongly Agree	Agree	Somewhat Agree	Disagree	Strongly Disagree
Satisfaction with course after integrating real-world design	26.2%	25.2%	26.2%	13.1%	9.3%
Support for repeating the experience for future students	43%	23.4%	15%	3.6%	15%

Analysis: The strong support for repeating the experience suggests its success, despite some variation in satisfaction levels—indicating cumulative impact over time and opportunities for improved implementation.

4-8 Perceived Benefits to the University

- **Top perceived benefits:**
  - Enhancing campus visual image.
  - Adapting spatial planning based on user experience.
  - Utilizing students' creative potential.

Analysis: Graduates demonstrated awareness of the community impact of their work, reinforcing the idea that academic efforts can produce meaningful, functional outcomes for real users.

4-9 Suggestions for Development

- Incorporate student proposals in actual campus projects.
- Engage professional designers in project reviews.
- Integrate hands-on training within course modules.
- Organize design competitions based on real needs.
- Invite external stakeholders to review projects.

Analysis: These suggestions highlight a desire among students to deepen real-world engagement and expand the practical scope of their academic journey—ultimately strengthening graduate readiness.

4-10 Overall Conclusion:

The survey results clearly demonstrate that integrating **real-world spatial design** into academic curricula:

- Stimulates creative thinking.
- Enhances applied skillsets.
- Increasing student satisfaction.
- Boosts post-graduation employability.
- Produces shared value for both the students and the institution.

4-11 Recommendation: Further embed real-world design in the curriculum while implementing the above development suggestions to ensure maximal educational and professional impact.

Results

The strategy of solving real-world problems creatively proved to be highly effective and had a positive impact on students' thinking and creativity. The key findings are as follows:

- Working on tangible, real-life problems relevant to students' needs within their own educational environments significantly stimulated their creative thinking.
- The continued provision of immediate feedback by the course instructor increased students' motivation to learn and acquire knowledge, especially when facing complex, real-world design problems related to university buildings.

- Students experienced a noticeable boost in self-confidence, driven by their active role and responsibility in problem-solving and knowledge construction.
- Students gained valuable experiences and skills that are directly aligned with labor market demands.
- Students developed a stronger sense of belonging to the university by proposing design solutions that aim to serve Taibah University's buildings and architectural spaces.
- The findings highlight the importance of trusting and empowering young talent, enabling them to contribute to solving community problems, which aligns with the goals of Saudi Vision 2030.

Recommendations

Considering the findings of this study, the researchers recommend the following:

- Integrate the strategy of solving real-world problems creatively across all practical courses in the Interior Design program.
- Encourage instructors to adopt this strategy and provide them with training on its implementation through professional development programs offered to faculty members at the university.
- Train students in the creative problem-solving strategy through dedicated workshops and training sessions, due to its positive impact on enhancing their design thinking.
- Support the educational environment within the Interior Design Department with the necessary resources to facilitate the successful application of this strategy.
- Support and promote student-designed projects both materially and in the media, and provide opportunities for their actual implementation to boost student confidence and invest in their creative potential.

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