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The Transition Gap Between Academic Preparation and Professional Practice in Saudi Arabia

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A b s t r a c t

The study aims to identify and analyze the gaps between educational outputs and market needs in Saudi Arabia. It identifies the technical and social skills required in the early years of practice, assesses their provision, and compares how graduates and professionals view graduate preparedness to recommend curriculum adjustments. The study employs a convergent mixed-method design. Two surveys were conducted to measure the same variables: one for graduates, the other for professionals. Findings show that graduate and professional perceptions converge on the extent to which architecture programs align with the needs of practice. The lowest-reported area of graduate preparedness was multidisciplinary coordination. The most challenging professional transition area was working within project deadlines. When it came to skill gaps, the largest reported skill gap was aligning conceptual designs with project constraints. The professionals identified six challenges for new graduates entering professional practice: role confusion, regulatory knowledge, coordination difficulties, project management, communication barriers, and market disconnect. The findings indicate that Saudi architecture programs require reforms to align educational outputs with market needs by incorporating more realistic, practice-based projects and courses.

K e y w o r d s : Education; Preparation; Practice; Gap; Perception.

1. Introduction

1.1 Background

Architecture blends art and engineering. Academia usually focuses on theoretical and conceptual aspects of architecture - the why (Grant & Ozolins, 2023). However, professional practice requires technical mastery, regulatory understanding, and interdisciplinary collaboration - the how (Hariri et al., 2020). Recent graduates struggle with a well-documented (Zavaleta, 2025), technical gap born from this chasm (Trevelyan, 2010). This disconnect is highlighted by increasingly complex professional environments (Madan & Mathur, 2025) and the rapid development of many countries, including Saudi Arabia.

Graduating students feel underprepared in construction documentation, project management, collaboration with other disciplines, and navigating codes and regulations (Mosaad & Elgobashi, 2025; Smith et al., 2024; Sopeoglou, 2024). Overcoming this issue is of relevance to Saudi Arabia's Vision 2030, and the increase in construction projects requiring high levels of sustainability and innovation. However, based on professionals' observations, many graduates lack the necessary skills to engage from the outset. The fast pace of Building Information Modeling (BIM) developments, code revisions, and an increased focus on sustainability, along with the extended focus on conceptual design in traditional studio education, all create competency gaps (Alnaser et al., 2024; Becerik-Gerber et al., 2011; Hatem & Karram, 2025).

The literature suggests that combining students' and professionals' graduate evaluations is a significant research gap, as most studies address one of the perspectives in isolation and miss that comparative opportunity (Andrews, 2022; Mullally & Brown-Molloy, 2025). The study adds immediacy to the goals of Vision 2030 and the standards of international accreditation in architecture in the Gulf Region.

1.2 Aims

The study aims to identify and analyze the gaps between educational outputs and market needs in Saudi Arabia, to propose methods to narrow them. It identifies the technical and social skills required in the early years of practice, assesses their provision, and compares how graduates and professionals view graduate preparedness to recommend curriculum adjustments.

1.3 Research Questions

The study was guided by the questions:

1. How do graduates and professionals perceive graduates' levels of preparedness in the core competencies of architecture, and in what ways do their perceptions coincide or differ?
2. What are the most significant transition-related challenges and the most significant skill shortages that occur in the transition from education to the practice of architecture?
3. What changes to the architecture curriculum in Saudi Arabia would best address the needs of the profession?

2. Literature Review

Numerous studies have documented the separation of education and practice in architecture over multiple decades and various locations. Boyer and Mitgang (1996) identified this issue in North America, where education and practice were poorly bridged and supervised. After almost 30 years, the issue remains, and perhaps worsens. Andrews (2022) noted a "schism" in UK architecture. Many practitioners claimed that UK architecture graduates lacked key practical skills after years of study. Hejazi (2020) documented the same issues in Iran. Graduates struggled with the transition from academic design studios to professional practice. In Egypt, Mosaad and Elgobashi (2025) noted the demand for skills in construction technology, project management, and regulatory compliance. The presence of similar studies in varying cultural and economic areas shows that the issue is not the separation of education and practice in architecture, but that architectural education itself creates gaps between conceptual exploration and technical mastery, and between creative expression and professional constraints(Choto & Remadan, 2026).

Technical competencies have consistently been identified as areas of weakness. In Malaysian Graduates, Mari et al. (2019) found consensus among graduates and employers that a gap in work readiness stems from graduates' limited exposure to construction processes, material properties, and systems integration in the built environment. Aderonmu et al. (2014) researched Nigerian Architecture Programs and found gaps between the "overt curriculum" (what is officially taught) and the "operational curriculum" (what students learn and can practice). With regards to other skills, Salleh et al. (2013) analyzed job advertisements and determined that the other skills which were in demand (beyond the technical skills) were project management, client communication, regulatory compliance, and team collaboration, which were skills primarily not addressed within the studio-based curriculum. Smith et al. (2024) challenge the traditional dichotomy between hard and soft skills and argue that employers seek proficiency in technical skills, interpersonal skills, adaptive thinking, and professional judgment.

As technology advances, skill gaps widen. Becerik-Gerber et al. (2011) documented how architecture programs struggle to integrate BIM and parametric design tools to keep up with the increasing industry adoption. Hariri et al. (2020) examined this in the context of Lebanon, showing that traditional educational models struggle to keep up with skill shortages caused by rapid technological change. New tools adoption rates vary across firms and regions, making it difficult for academic programs to determine which tools and workflows to prioritize (Kohale et al., 2024).

Educators in architecture ascribe different solutions to the education-practice gap. According to Milovanović et al. (2026), design studios should be structured to enable students to balance conceptual and practical skills, understanding and integrating the constraints of regulations, construction, and the specifics of real-world projects. Integrated models, which weave professional practice throughout the course in a continuum as opposed to a separate course, have yielded better results (Weinreb, n.d.). Finally, Choto and Remadan (2026) proposed a transformative, practice-based teaching model where teaching, research, and professional practice coalesce through live projects and structured industry partnerships.

The collaboration between industry and academia is rapidly becoming a valuable approach to the problems at hand. Konduri et al. (2024) highlight that partnerships need to go beyond the one-off guest lecture to sustainable involvement of industry stakeholders in designing curricula and co-teaching. Hatem and Karram (2025) describe curriculum reform by faculty and industry professionals integrating sustainability and practice as a new trend in curriculum design. Mullally and Brown-Molloy (2025) advocate the inclusion of systems thinking, ethics, and adaptive leadership as meta-competencies in postgraduate professional practice courses.

There is limited research related to Gulf countries, especially Saudi Arabia. Saudi Arabia's Vision 2030 goals and unique, rapidly developing regulatory environments create new contexts for developing programs that prepare graduates for design jobs and large-scale construction, sustainability and heritage conservation projects and programs (Alanazi & Benlaria, 2023; Alshahrani & Mostafa, 2025). The Saudi Building Code, recently revised to include energy efficiency, seismic, and accessibility issues, is a significant legal framework. There are several programs that have not adequately addressed this issue, leaving graduates unprepared for regulatory compliance to be incorporated in their practice. This study aims to provide insight into this issue and lay the groundwork for evidence-based curriculum reform by gathering data on the graduate/professional experience.

3. Research Methodology

The study employed a convergent mixed-methods design using a survey questionnaire. Two sets of survey questionnaires with identical core sections and questions were developed, one for graduates and one for professionals. The questionnaire was structured into three sections: university skill preparedness, professional transition challenges, and skill gaps in professional practice, along with qualitative insights from professionals only. A total of 72 responses were collected, comprising 53 graduates and 19 professionals. Table 1 shows the core sections of the questionnaire Graduate Sample (n=53): Participants were graduates of Saudi architecture programs within the past three years. Participants came from both public and private universities from different regions of Saudi Arabia. Participants held a

variety of early-career roles: Architect (28.3%), Intern Architect (28.3%), Junior Architect (22.6%), and Architectural Engineer (13.2%). Almost half of the participants (47.2%) had less than 6 months of practice, so they were able to provide evaluations based on their recent experiences.
Professional Sample (n=19): Participants were architecture professionals in management or supervisory positions who frequently interacted with new graduates. Participants had roles of Project Managers (31.6%), Architects (21.1%), Senior Architects (10.5%), and CEOs (10.5%). Participants had a lot of industry experience (31.6%) had been in the industry for 6–10 years, and (31.6%) had been in the industry for more than 15 years, which gave them the opportunity to have a developed perspective, based on their experiences with a variety of graduate classes.
The survey was distributed electronically via LinkedIn in 2026. Two types of analyses were performed. First, a quantitative analysis of the Likert-scale items, including descriptive statistics (means, medians, standard deviations, etc.), Mann-Whitney U-tests to compare perspectives between graduates and professionals, and Spearman's rho correlation analysis to explore the relationships between competencies. Qualitative analysis of the open-ended insight questions, including thematic analysis, coding of challenges and recommendations, and triangulation of the theme to the quantitative patterns. Figure 1 shows the method.

Table 1: Questionnaire sections.

Section	Items
University Skill Preparedness	Conceptual Architectural Design Architectural presentation and visualization Technical drawings and construction detailing Knowledge of construction methods and materials BIM and digital design tools Project scheduling and management tools Collaboration with engineers and multidisciplinary teams
Professional Transition Challenges	Understanding real construction documentation Working within project deadlines and schedules Communicating with clients and project teams Adapting to professional responsibilities
Skill Gaps in Professional Practice	Conceptual design vs real project constraints Technical detailing and construction drawings Understanding construction methods BIM and digital coordination workflows Project management knowledge Professional communication and teamwork

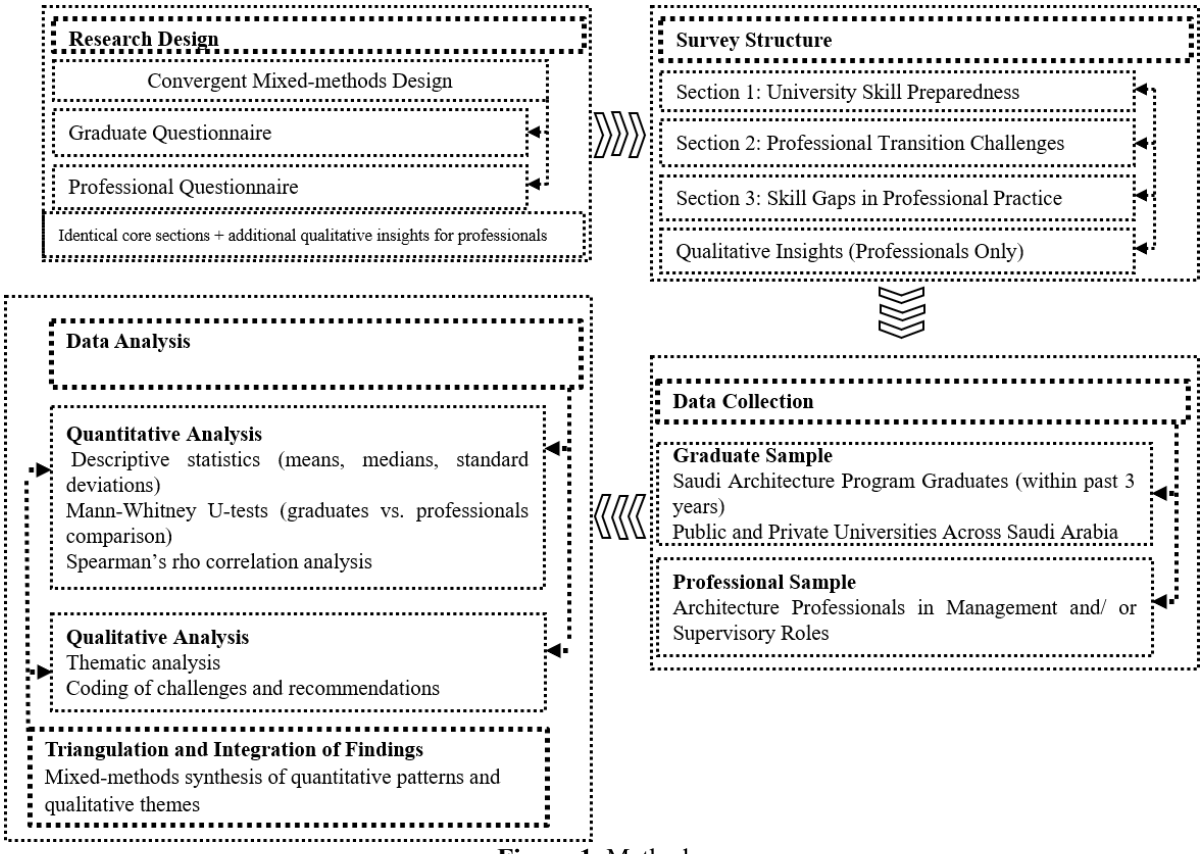

Figure 1. Methods.

4. Results and Discussion

A total of 72 participants completed the survey including 53 recent graduates and 19 professionals. Participants rated each item of the three sections on a 5-point Likert scale. For the reporting, the scale well prepared (4) and very well prepared (5) were combined, and the same was done for not prepared at all (1) and slightly prepared (2). A Mann-Whitney U-test showed no significant difference between the perceptions of graduates and professionals.
Participants rated university skill preparedness on a scale where 1 = not prepared at all and 5 = very well prepared. Table 2 shows the findings on university skill preparedness. Both groups rated it positively, with 50.4% of graduates and 50.4% of professionals. For the item "conceptual architectural design," 73.6% of graduates and 68.4% of professionals rated it positively. The median score was 4 for both groups. Similarly, the item "architectural presentation and visualization" was rated positively by 62% of graduates and 68.4% of professionals, with a median score of 4 for both groups. "Collaboration with engineers and multidisciplinary teams" was rated negatively by 50.9% of graduates and 36.8% of professionals. The graduate median score was (Mdn = 2), and the professional median score was (Mdn = 3). A Spearman rank correlation analysis showed a statistically significant strong positive alignment ($\rho = 0.92$, $p = 0.004$), a sign of high assessment reliability.

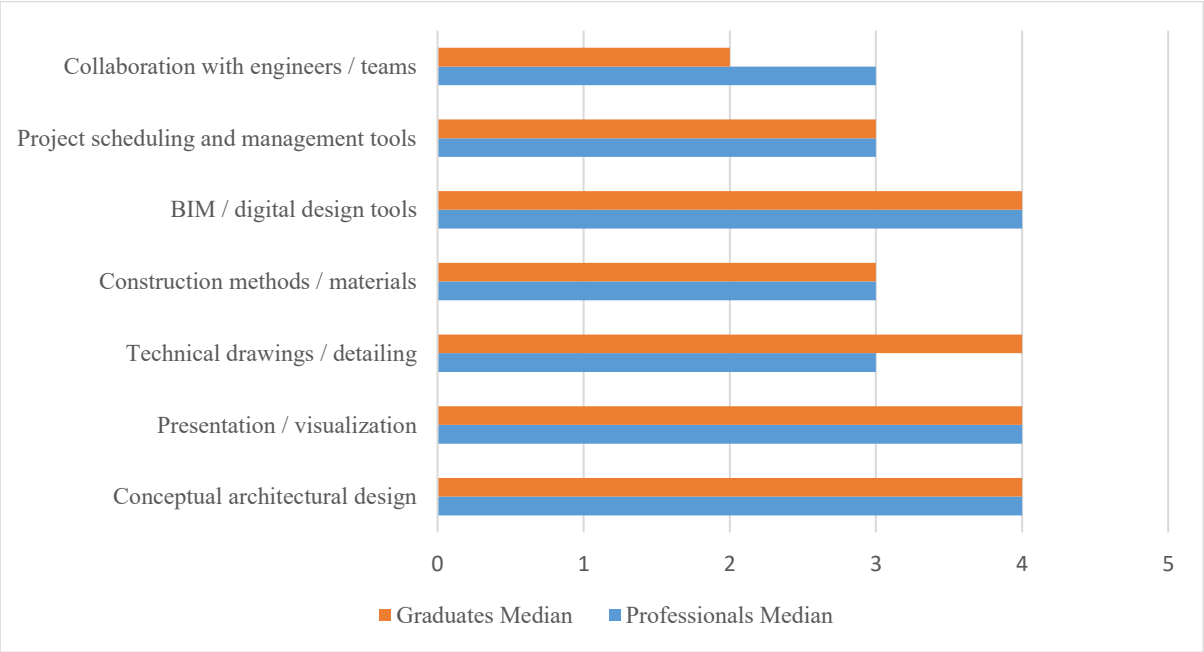

Figure 2. Shows the medians for each item.

The findings show that graduates are well prepared in "conceptual architectural design" and "Architectural presentation and visualization". This could be explained by the programs' emphasis on design exploration and presentation. However, they tend to be underprepared when it comes to the areas of collaboration and project management due to their limited exposure to real workflows.

Table 2: Graduate vs. Professional Perception of University Skill Preparedness.

University Skill Preparedness Dimension	Graduates n=53 %					Professionals n=19 %				
	1	2	3	4	5	1	2	3	4	5
Conceptual Architectural Design	1.9	5.7	18.9	41.5	32.1	0.0	5.3	26.3	31.6	36.8
Architectural presentation and visualization	1.9	13.2	22.6	30.2	32.1	5.3	0.0	26.3	42.1	26.3
Technical drawings and construction detailing	0.0	11.3	35.8	28.3	24.5	0.0	10.5	42.1	26.3	21.1
Knowledge of construction methods and materials	1.9	20.8	30.2	26.4	20.8	10.5	10.5	47.4	5.3	26.3
BIM and digital design tools	1.9	13.2	26.4	34.0	24.5	5.3	0.0	36.8	31.6	26.3
Project scheduling and management tools	24.5	11.3	32.1	15.1	17.0	10.5	15.8	42.1	21.1	10.5
Collaboration with engineers and multidisciplinary teams	30.2	20.8	22.6	9.4	17.0	21.1	15.8	15.8	21.1	26.3

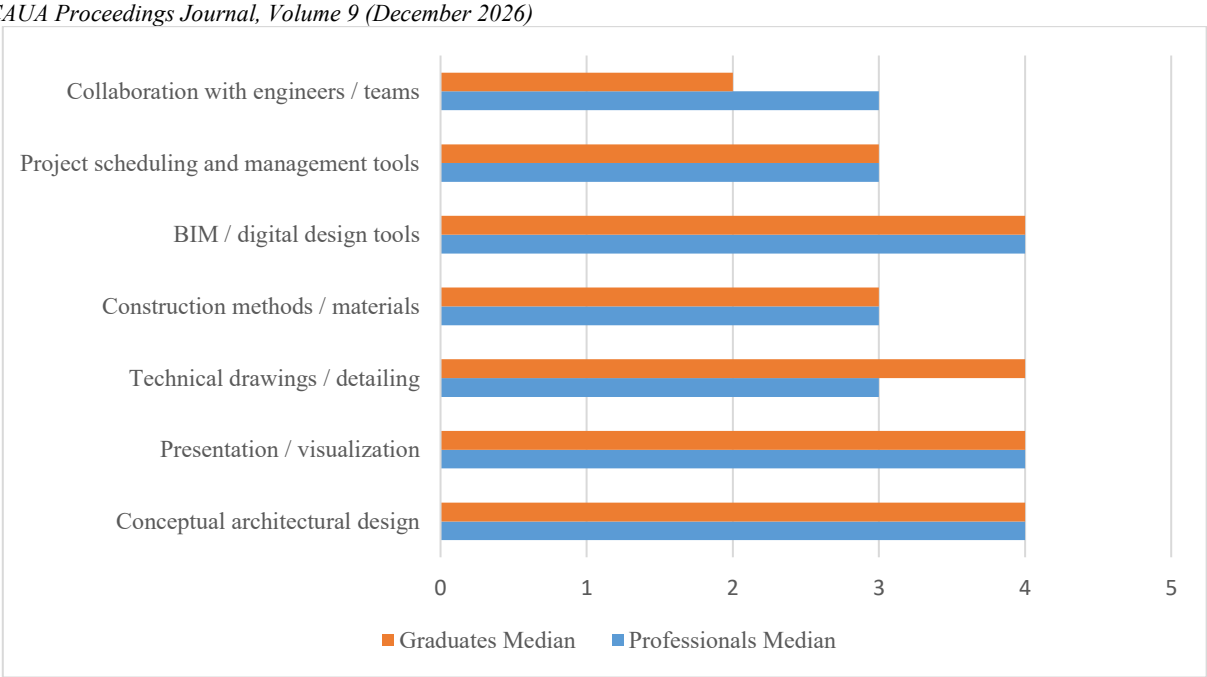

Figure 2. University Skill Preparedness Median Ratings.

Participants rated professional transition challenges on a reverse scale where 1=not challenging at all and 5= very challenging. The scale was reverse-coded for reporting so that higher scores indicate positive perceptions. Table 3 shows the findings on university skill preparedness. 48.1% of graduates and 55.3% of professionals rated it positively, with means of 3 and 4, respectively. For the item "understanding real construction documentation," 49.1% of graduates and 68.4% of professionals rated it as the least challenging aspect of the professional transition. However, the rating distribution is broad, resulting in lower medians, graduates (Mdn = 3) and professionals (Mdn = 4). "Communicating with clients and project teams" had a stronger central tendency, with 50.9% of graduates and 52.6% of professionals rating it positively, and (Mdn = 4) for both groups. Graduates face challenges in meeting project deadlines. Out of the four transition challenges, "Working within project deadlines and schedules" was reported as the most challenging. A Spearman rank correlation analysis showed a strong positive alignment (ρ=0.81, p=0.074), however, the relation is not statistically significant likely due to the low number of items. Figure 3 shows the medians for each item.

Table 3: Graduates vs. Professionals Perception of Professional Transition Challenges.

Professional Transition Challenges	Graduates n=53 %					Professionals n=19 %				
	1	2	3	4	5	1	2	3	4	5
Understanding real construction documentation	9.4	13.2	28.3	18.9	30.2	5.3	5.3	21.1	52.6	15.8
Working within project deadlines and schedules	13.2	17.0	24.5	20.8	24.5	5.3	15.8	31.6	15.8	31.6
Communicating with clients and project teams	7.5	22.6	18.9	28.3	22.6	5.3	15.8	26.3	26.3	26.3
Adapting to professional responsibilities	9.4	15.1	28.3	22.6	24.5	10.5	5.3	31.6	26.3	26.3

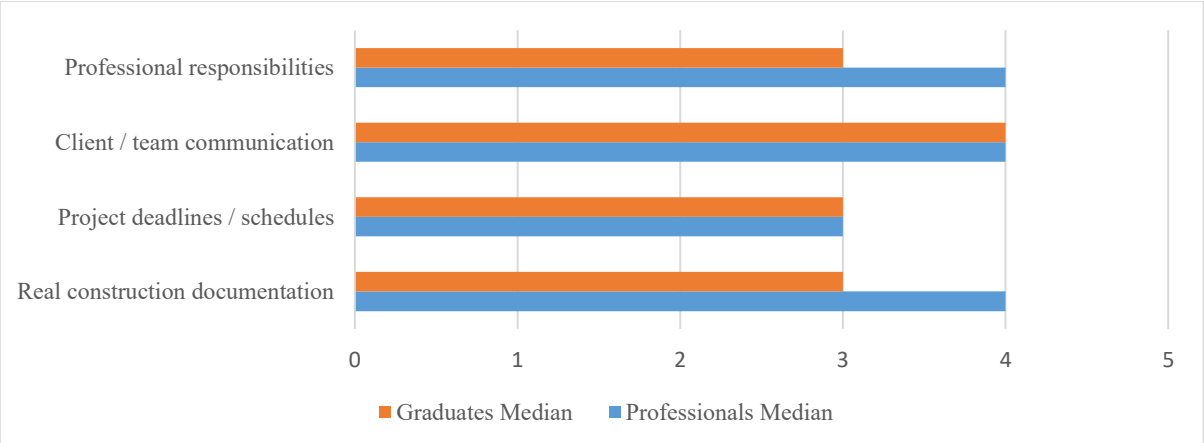

Figure 3. Professional Transition Challenges: Graduate vs. Professional Median Ratings.

Participants rated skill gaps in professional practice on a reverse scale where 1=no gap and 5= very large gap. The scale was reverse-coded for reporting so that higher scores indicate positive perceptions. Table 4 shows the findings on skill gaps in professional practice. This category was rated lowest by both graduates (Mdn = 3) and professionals (Mdn = 3). The item "conceptual design vs. real project constraints" had the lowest rating, with 34% of graduates reporting it negatively and 42.1% of professionals. The medians were (Mdn = 3) for both groups. A Spearman rank correlation analysis showed a moderate positive alignment ($\rho = 0.50$, $p = 0.317$), however, relation is not statistically significant. Figure 4 shows the medians for each item.

Table 4: Graduate vs. Professional Perception of Skill Gaps in Professional Practice.

Skill Gaps in Professional Practice	Graduates n = 53 %					Professionals n = 19 %				
	1	2	3	4	5	1	2	3	4	5
Conceptual design vs real project constraints	11.3	22.6	43.4	17.0	5.7	5.3	36.8	31.6	21.1	5.3
Technical detailing and construction drawings	9.4	13.2	41.5	30.2	5.7	5.3	15.8	42.1	36.8	0.0
Understanding construction methods	11.3	22.6	30.2	24.5	11.3	5.3	10.5	42.1	26.3	15.8
BIM and digital coordination workflows	11.3	7.5	20.8	37.7	22.6	15.8	10.5	26.3	36.8	10.5
Project management knowledge	20.8	22.6	24.5	20.8	11.3	10.5	21.1	31.6	26.3	10.5
Professional communication and teamwork	11.3	18.9	15.1	28.3	26.4	15.8	5.3	31.6	31.6	15.8

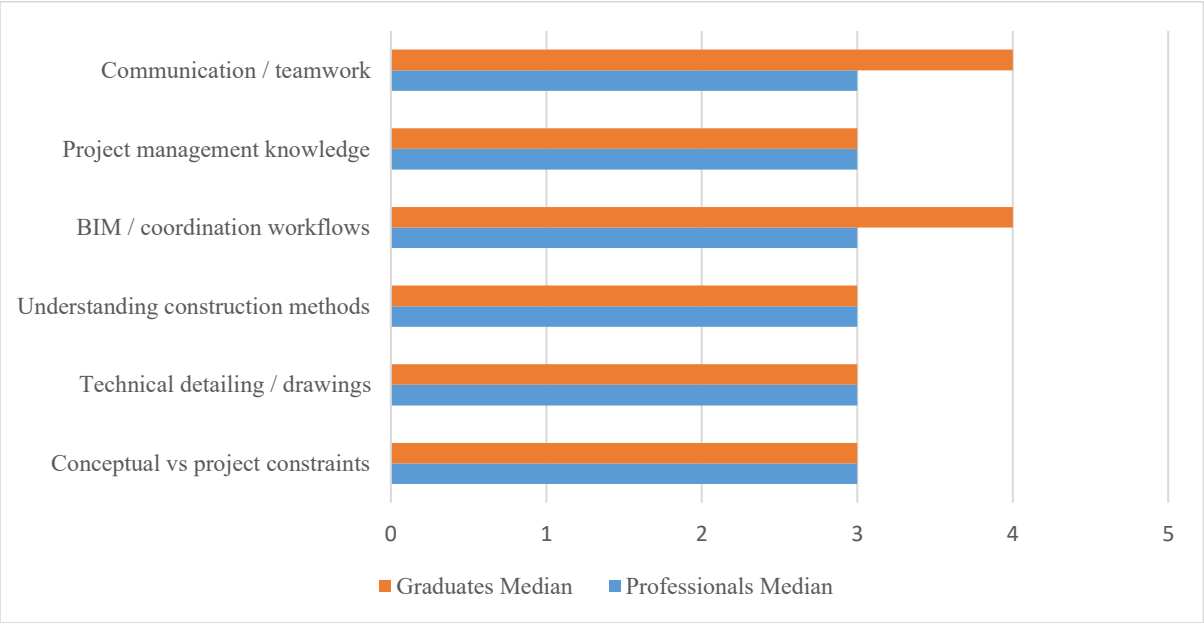

Figure 4. Professional Skill Gaps: Graduate vs. Professional Median Ratings.

The preparation gap is systemic and not rooted in transition anxiety. This is evident by the strong correlation between graduates' and professionals' perspectives ($\rho = 0.81$, $p = 0.000091$) across the 17 dimensions, which validates both perspectives. The competencies are interdependent. Graduates who reported being underprepared in one technical aspect tended to feel underprepared in other associated areas. The same is true for transition challenges and skill gaps, where graduates who reported larger skill gaps also report higher transition challenges. The strengths and weaknesses mirror those reported in Egypt, Iran, the UK, and Malaysia.

The professionals noted the gap in graduate knowledge of the Saudi Building Code and regulations. This is concerning as architects have an ethical and legal responsibility to comply with relevant standards, safety requirements, and accessibility requirements. However, graduates enter the market with skill gaps in the Saudi Building Code, zoning regulations, and design approval processes. This is where you're giving the current focus of vision 2030 sustainability, energy, etc., and the rapid updates to the Saudi Building Code and zoning regulations. Compliance with codes and regulations should be introduced gradually throughout the different levels of design studios.

Although BIM and digital design tools were perceived as some of the highest skill preparation areas, a deficiency remains in using BIM for coordination. BIM efficacy depends on the BIM manager's understanding of the various systems and ability to coordinate different disciplines. This is the graduate's weakest area. BIM should be integrated as a design and coordination tool in design studios and construction courses instead of only using it as a drafting tool.

The graduates and professionals differed in their assessment of multidisciplinary collaboration. This shows that graduates underestimate their soft skills, while professionals believe that these skills transfer well from education to

practice. Similarly, professionals rated transitional challenges higher (Mdn = 4 vs. Mdn = 3). This demonstrates that graduates adjust to the transition faster than they expect. The perception of transition challenges is related to confidence and identity formation, which is often neglected by academic programs. Therefore, academic programs should help students develop a positive image of the profession and value their skills. On the other hand, professionals should provide mentoring to help graduates address their weaknesses.

Graduates and professionals offered opinions on what differentiates graduates from public and private universities. In the graduate self-evaluations, minimal differences were apparent. Public university graduates reported feeling overall prepared at (Mdn = 3), and private university graduates reported (Mdn = 3.27). On the other hand, 50% of professionals noted that public and private graduates differ in skills and knowledge. Notable differences in curriculum or university resources may explain these differences. However, the small sample size and the personal nature of the assessments may be a great obstacle to drawing conclusive results.

Analysis of professionals' qualitative data identified the following challenges: (1) Role Confusion, graduates oversimplify architect's leadership role and the role of the architect in advising and collaborating with the client "work as draftsmen rather than architects,"; (2) Regulatory Knowledge, limited knowledge of the Saudi Building Code, zoning regulations, and the approval process; (3) Coordination Between Disciplines, poor coordination with structural and MEP engineers, lacking knowledge and/or the skills needed for effective communication; (4) Project Management, poor ability to manage the time, budget, and deliverables; (5) Communication barriers, poor ability to manage many of the required communication tasks including client presentations, technical reports, professional communication, etc.; (6) Market disconnect, poor ability to adapt conceptual designs to real-world constrains.

Suggestions for curricular changes clustered in the following five categories: (1) offer internships and live projects in all years of the curriculum, (2) create courses dedicated to understanding and implementing the Saudi Building Codes within design studios, (3) offer workshops on understanding engineering and how to work collaboratively with engineering, (4) integrate project management and professional practice at the beginning of the curriculum, and (5) create industry-academia linkages in Curriculum Design, Advisory Boards, and Co-teaching.

Professionals also emphasized the necessity of effective industry-academia partnerships in curriculum design and co-instruction. Moreover, partnerships can take other forms, such as advisory boards, live projects, and professional placements, to name a few. This aligns with the Vision 2030 Human Capability Development Program and could be supported through funding, recognition, and policy frameworks. Vision 2030 recognized that education is a cornerstone of development. It sets the transformation of the education system as a priority; as such, the results are relevant to the Vision 2030 goal of improving the readiness of youth to enter the marketplace. Programs that respond to the kingdom's developmental goals would be better positioned to provide graduates who can help achieve those goals.

Strong clustering of related competencies was found in Spearman's correlation analyses. Figure 5 shows the correlation matrix for graduate responses. The most notable were:

University skill preparedness:

- Project scheduling and Collaboration: $\rho\ (53) = 0.60$, $p < 0.001$
- Knowledge of construction and Project scheduling: $\rho\ (53) = 0.53$, $p < 0.001$
- Conceptual Design and presentation and visualization: $\rho\ (53) = 0.51$, $p < 0.001$

Professional transition challenges:

- Adapting to responsibilities and client communication: $\rho\ (53) = 0.78$, $p < 0.001$
- Deadline management and Client communication: $\rho\ (53) = 0.72$, $p < 0.001$
- Adapting to responsibilities and Deadline management: $\rho\ (53) = 0.0.69$, $p < 0.001$

Skill gaps in professional practice:

- Construction methods and project management: $\rho\ (53) = 0.63$, $p < 0.001$
- Construction methods and professional communication: $\rho\ (53) = 0.60$, $p < 0.001$

These correlations demonstrate that skill deficiencies are not isolated. If a student has difficulties in a technical area, they are likely to have difficulty in related technical areas. The same applies to the soft skill competencies. This is a significant consideration when developing a curriculum, since neglected competencies indicate the need for comprehensive intervention rather than addressing deficiencies in isolated skills.

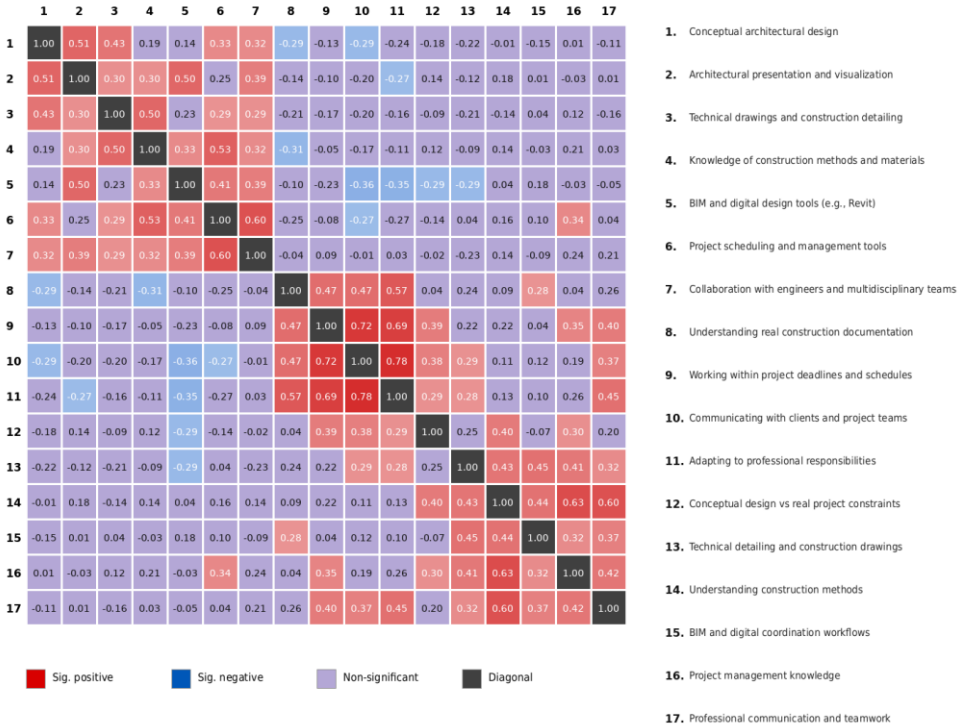

Figure 5. Graduates Correlation Heatmap.

Similar correlation patterns emerged in professional data. The analysis confirmed the graduate findings and suggested that the clustering of competencies is based on the actual relationships among the skills, not on response bias. Figure 6 shows the correlation matrix for professional responses. The most notable were:

University skill preparedness:

- Project scheduling and collaboration $\rho\ (19) = 0.84$, $p < 0.001$
- Bim and digital tools and technical drawings $\rho\ (19) = 0.73$, $p < 0.001$
- Technical drawing and construction knowledge $\rho\ (19) = 0.70$, $p = 0.001$

Professional transition challenges:

- Adapting to responsibility and client communication $\rho\ (19) = 0.80$, $p < 0.001$
- Deadline management and construction documentation $\rho\ (19) = 0.74$, $p < 0.001$
- Deadline management and client communication $\rho\ (19) = 0.57$, $p = 0.010$

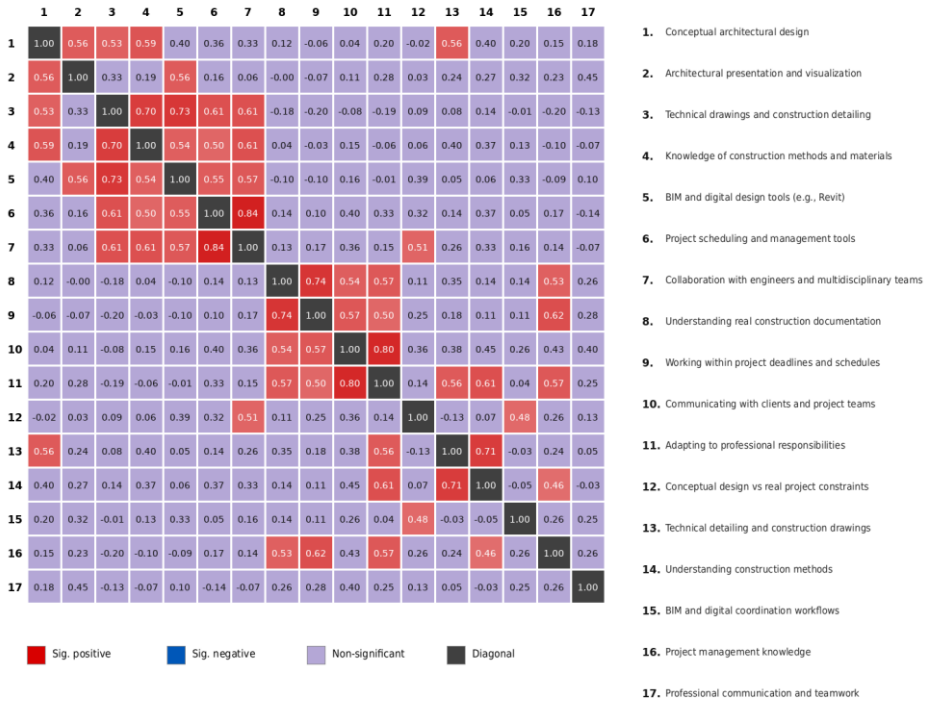

Figure 6. Professionals Correlation Heatmap.

5. Study Limitations and Future Research

The study sample size is adequate for this exploratory study. However, the sample size is not sufficient to draw broader conclusions. The results reflect graduate perspectives at a single point in time due to the cross-sectional nature of the sample; subsequent studies may use larger sample sizes and longitudinal tracking. Additionally, other studies may track the effects of curricular reforms on the professional gaps.

6. Conclusion

This study shows that Saudi architecture programs equip graduates with the necessary skills in conceptual architectural design and visual presentation. However, they are less effective at preparing graduates in practice-oriented skills. Both graduates and professionals reported the same strengths and weaknesses. This validates the reliability of this finding. The higher ratings for conceptual design and the lower ratings for technical and professional areas reveal the value and limitations of traditional studio-based architectural education when it is not adequately linked to real-world conditions. The results showed 3 weaknesses in graduate preparation: multidisciplinary coordination, project scheduling, and collaboration. Graduates face challenges and transition to practice in Meeting project deadlines, adapting to professional responsibilities, and understanding construction documentation. These results indicate that the transition requirements extend beyond technical knowledge to include workflows, adaptability, and the ability to work in a collaborative environment.

The study revealed that the gap between practice and education is fundamental, rather than being an issue of confidence or transition anxiety. The most critical skill gap is the ability to bring conceptual designs to life within regulatory and budget frameworks. This means that graduate shortcomings are not isolated. Graduates face interconnected deficiencies in technical knowledge, project management, multidisciplinary coordination, and professional communication. These gaps can only be resolved through the complete reformation of curricula and not through minor adjustments.

Curricular reform should prioritize closing the gap. To this end, practice-based learning should be incorporated throughout architectural education. Building codes, regulations, and compliance requirements should be progressively integrated into design studios and technical courses. The depth of BIM education should go beyond the basic use case as a drafting and visualization tool and focus on coordination and interdisciplinary integration. In addition, programs should place greater emphasis on internships, live projects, project management, and interdisciplinary collaboration.

To align architectural education with professional expectations, sustainable industry-academia partnerships are important. These partnerships should include effective advisory boards, co-teaching, studio critiques, live project briefs, internships, and work placements. Strengthening the relationship between universities and practice will allow architecture programs to respond to the changing needs of the Saudi construction sector. Preparing architects who can effectively contribute to large-scale projects, compliance, sustainability, and transformation of the built environment supports the broader goals of Vision 2030.

Future research should expand on this preliminary study by using larger sample sizes. Longitudinal studies are also necessary to track graduates' professional development and changes in their readiness for practice. Finally, post-reform evaluations should be conducted to assess whether curriculum changes, industry partnerships, and practice-based learning have closed the gaps between architectural education and professional practice.

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Conflicts of Interest

The author(s) report no conflicts of interest.

Data Availability Statement

The original contributions presented in this study are included in the article. Further inquiries can be directed to the corresponding author.

Institutional Review Board Statement

The survey does not involve any sensitive personal data, it complies fully with applicable ethical guidelines, so it does not require additional ethical review.

CRediT Author Statement

All authors contributed to the study conception and design. Individual contributions are as follows: A.E.: methodology, supervision, validation, visualization, and writing – review and editing. S.A.: conceptualization, investigation, writing-

review and editing, and resources. M.A.: writing – original draft and investigation. S.B.: writing – original draft and investigation. L.S.: writing – original draft and investigation. All authors have read and approved the final manuscript.

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