INTEGRATED LEARNING AND INTERNSHIP EFFECTIVENESS IN NIGERIAN ARCHITECTURAL EDUCATION

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Abstract

This study examines the effectiveness of integrated internship programs in Nigerian architectural education, by aiming to bridge the gap between theoretical classroom instruction and professional industry practice to enhance professionalism. The research identified factors that served as systemic and general barriers to effective implementation of integrated learning and internship. It assessed the alignment between academic curricula and industry needs, and evaluated the influence of supervision and digital exposure on learning outcomes among students of architecture in universities in Nigeria. The study used a mixed-methods approach, and an embedded multiple-case design was applied across four accredited universities samples for the study. Data were gathered from 150 students and recent graduates through surveys instrument, along with oral interviews of 25 practitioners and lecturers. The findings from the study revealed that only 41.9% of the students felt adequately prepared for internships, as they exhibited low competence in core professional areas including project management (22.2%) and construction documentation (29.9%). On a brighter note, a strong positive correlation was observed between the quality of supervision and general satisfaction during internship ($r = 0.721$, $p < .05$), yet 80% of supervisors noted that some students still faced difficulties in applying theoretical knowledge, while only 37.6% of respondents had exposure to advanced digital tools like BIM during internship and classroom learning. The study concluded that the internship model practices in Nigeria is hugely flawed, constrained by inconsistent supervision, limited technological integration, and absence of competency-based assessment. The study recommended reforms targeted at university-industry collaboration, structured supervisor training, digital literacy enhancement, and a shift toward competency-based evaluation frameworks.

Keywords: Architectural education, internship effectiveness, integrated learning, Nigeria, situated learning, professional competence.

Introduction

Architectural profession in Nigeria is now driven by rapid urbanization, infrastructure demands, and growing sustainability awareness (Okonta et. al., 2025) due to population explosion and advancement in construction science and technology. This transformation occurs against a backdrop of rich indigenous architectural traditions that seamlessly integrated with natural environments, but are now becoming principles that are increasingly overlooked in contemporary practice (Allu & Emuze, 2017). Understandably, the sustained growth in Nigeria's construction sector presents both exceptional opportunities and localized challenges for architectural education,

particularly in preparing students and recent graduates for competing equally with peers globally given the demands of cultural preservation, environmental sustainability, and economic development through adaptive and green design. It within these concerns and constraints that internship programs which typically occurs between the fourth and fifth years of architecture undergraduate programs in most universities in Nigeria becomes a critical bridge between academic instruction and professional practice. These mandated workplace experiences are intended to equip students with practical skills, professional judgment, and industry understanding that complement theoretical learning modules (Gundes & Atakul, 2017; Akande *et al.*, 2023). This problem is also compounded by regulatory challenges and bottlenecks in the architectural profession. The Architectural Registration Council of Nigeria (ARCON) qualifications currently allow for practice primarily within Nigeria due to a substantially different curriculum from international standards, thereby limiting global professional mobility (Okonta et. al., 2025), such that a graduate of architecture in Nigeria will have to upgrade to the standard applicable to any other country he wishes to practice. Simultaneously, the rift between ARCON and the Nigerian Institute of Architects since 2016 have created professional unrest that inevitably trickles down to affect the quality of students' internship and practice standardization (Okonta & Ayinla, 2024).

This paper addressed these challenges by examining the current effectiveness of internship programs in architectural education in Nigeria and proposed the best strategies for dealing with these delimiting issues. Specifically, this study demonstrated how integrated learning approaches can bridge identified gaps between theoretical knowledge and practical application, how the quality of supervised learning affects learning outcomes, and what structural reforms might optimize internship experiences for both students and professional and industry mentors. The significance of this research lies in its potential to inform educational policy reform and attitude reorientation among students and faculty members in architecture programs in universities and polytechnics in Nigeria. The analysis of the effectiveness of internship program through stakeholder perspectives and situating findings within both local constraints and global best practices, may contribute timely recommendations and suggestion of important and relevant areas for policy framework reforms for the advancement of architectural education.

The effectiveness of supervised learning programs such as internships in architectural education is grounded in three interrelated frameworks which include the situated learning theory, digital design thinking, and the regulatory alignment theory. These frameworks when use together, provide a coherent analytical basis for examining the relationship between academic instruction, experiential learning, and professional formation. Situated Learning Theory (Lave & Wenger, 1991) views learning as a social process in which students develop from observers to competent practitioners through participation in authentic professional settings such as internships. In Nigeria, effective internships should be more advanced than routine technical assistance to include design ideation, client engagement, and site coordination, to be effective in building both competence and professional identity. As Allu & Emuze (2017) noted, the absence of such authentic engagement reduces internships to mere token exercises disconnected from professional realities. Digital Design Thinking framework (Oxman, 2006) redefines pedagogy in response to the cognitive transformations introduced by digital technologies, as it analyses and interpreted the interplay between human creativity and computational intelligence, especially how digital tools expand

problem-solving and design synthesis. In Nigeria, limited access to advanced digital systems constrains students' exposure to contemporary workflows (Akande *et al.*, 2023), so embedding digital skills in internship design would not be a bad idea but would be essential to innovation and alignment with global practice. Regulatory Alignment Theory examines the interface between educational frameworks and professional governance systems (Bokhari & Myeong, 2022). Simply, it assesses how accreditation, licensing, and international recognition shape graduates' transition from school to professional practice without having to experience the bottlenecks and barriers of having to upgrade their certifications. These frameworks offer a rigorous foundation for analyzing how pedagogical authenticity, technological integration, and regulatory policies shape the professional training of architecture students in Nigeria.

Literature review

Modern architectural education is changing quickly and must balance the traditional studio model (where the ability to use pencils and papers to draft where a very cherished skill sets) with new demands for digital skills, sustainability, and real-world relevance. The design studio, once the main place for creative thinking and problem-solving (Mohamed, 2020), now needs major updates to connect what students learn in school with what they face in professional practice as digitalization has practically taken over every aspect of architecture (Khalil *et al.,* 2023; Masdéu & Fuses, 2017). This change now includes new digital tools such as computer aided design CAD, computer aided modeling CAM softwares etc, and ways of thinking that shape how designers create and solve problems (Tepavčević, 2017). However, many schools still lack systems and resources to effectively teach these digital skills, considering the fact that and global sustainability call for programs that include environmental responsibility and life-cycle awareness (Hendawy *et al.,* 2024; Mohamed, 2022). The move to online and hybrid learning has also exposed the weaknesses in how teachers and schools manage studio-based learning in remote settings (Chiu *et al.,* 2024) especially in universities in developing and poor countries. At the same time, internships which should connect academic learning to real-life practice are often not effective in bridging these gaps, as Ivana (2019) noted that poor supervision, weak links to coursework, and unclear goals make many internships unhelpful. These problems are even greater in countries like Nigeria, where outdated academic curriculum and software programs, lack of resources, and poor regulation widen the gap between education and practice (Okonta & Ayinla, 2024; Onwuemele, 2018). Research supports this concern, for example Abdulkarim (2019) found that Nigeria's 2007 NUC BMAS curriculum no longer meets the needs of today's profession, Maina (2018) showed that poor infrastructure and high costs of equipment and softwares limit the use of CAD and BIM technologies, and Akah et al. (2024) found large differences in BIM adoption across schools, leading to a call for national policies and better links between universities and the industry. Yusuf and Lukman (2019) also found that the required student industrial work experience scheme (SIWES) taken as internship, does not properly prepare students for real work, while Erbaş (2023) showed that well-planned site internships help students build confidence, technical skills, and professional identity. These studies show that architectural education still struggles to combine digital literacy, sustainability, and real-world experience, hence solving these problems will require big changes such as using new tools like AI-based learning (Omeh *et al.,* 2024), online

supervision systems (Assalaarachchi et al., 2024), and global partnerships that help students gain modern, practical, and relevant skills (Rotondo et al., 2023).

Methodology

This study employed an embedded multiple-case study design that examining internship programs across four accredited Nigerian universities to analyze the interplay between academic preparation, workplace learning, and regulatory frameworks. A mixed-methods approach facilitated data triangulation such that quantitative survey data from 117 students and recent graduates established broad patterns of skill development and supervision quality, while semi-structured interviews with 25 participants (students, graduates, and academic/professional supervisors) yielded rich, qualitative insights into experiential challenges and systemic disjunctions. Thematic analysis of interview transcripts, complemented by a content analysis of institutional and regulatory documents, put these findings within the local structural frameworks of architectural education in Nigeria. Although the study's focus on four institutions of higher learning and reliance on self-reported data presented inherent limitations, the systematic integration of multiple data sources provides a robust empirical basis for investigating the efficacy of architectural internships in this area of study.

Discussion

The findings reveal persistent gaps between academic instruction and professional readiness within Nigerian architectural education. Table 1 indicates that only 41.9% of students felt adequately prepared for internship demands, with particularly low confidence in project management (22.2%) and construction documentation (29.9%). Supervisors corroborated this view, as 80% of the supervisors reported that students struggled to apply theoretical concepts effectively (Table 2). These findings reaffirm Abdulkarim (2019) conclusion on curriculum obsolescence and Yusuf and Lukman (2019) critique that current internship models remain largely observational rather than participatory. Embedding practice-based and iterative learning opportunities earlier in the academic program, consistent with Lave and Wenger (1991) situated learning theory would help strengthen the connection between classroom learning and workplace competence.

Table 1. Students' Self-Assessment of Internship Preparedness

Response Category	Percentage (%)
Adequately prepared	41.9
Inadequately prepared	58.1
High competence in project management	22.2
High competence in construction documentation	29.9

Table 2. Supervisors' Perception of Students' Professional Application

Response Category	Percentage (%)
Students able to apply theory effectively	20.0
Students struggle to apply theoretical knowledge	80.0

Supervision quality also emerged as a decisive factor. Table 3 shows that 54.7% of students rated supervision as effective, while 17.1% rated it ineffective. Correlation analysis revealed a strong positive association (r = 0.721, p < .05) between supervision quality and overall internship satisfaction (Table 4). These results align with Schneider *et al.* (2024), highlighting that unstructured mentorship limits professional growth. As also reflected in Yusuf and Lukman (2019), improving supervisor orientation and fostering consistent feedback mechanisms between academia and industry would substantially enhance experiential outcomes.

Table 3. Students' Evaluation of Internship Supervision

Response Category	Percentage (%)
Effective supervision	54.7
Neutral	28.2
Ineffective supervision	17.1

Table 4. Correlation Between Supervision Quality and Internship Satisfaction

Variable Relationship	r-value	p-value
Supervision quality vs internship satisfaction	0.721	<0.05

In terms of technology exposure, Table 5 illustrates that although 90.6% of students had experience with CAD software, only 37.6% had moderate or extensive BIM exposure, and less than 25% engaged with advanced tools such as parametric or simulation software. This technological limitation supports Maina (2018) finding that digital integration in Nigerian architecture schools remains constrained by infrastructure and policy gaps, as well as Akah *et al.* (2024) emphasis on unequal access across institutions. Reframing digital education toward process-oriented design thinking and institutional collaboration with industry is therefore essential.

Table 5. Students' Exposure to Digital Tools During Internship

Digital Tool	Percentage (%)
CAD software	90.6
BIM software	37.6
Advanced simulation/parametric tools	24.8

Structural inconsistencies were also evident. Table 6 shows that internship structures and assessment methods differ significantly across universities, while Table 7 reveals that 80.2% of stakeholders preferred competency-based evaluation over traditional time-based systems (23.9%). These disparities echo Abdulkarim (2019) and Okonta and Ayinla (2024) observations on the fragmented nature of architectural education policy in Nigeria. Implementing unified competency frameworks could harmonize academic and professional expectations, ensuring equitable standards across institutions.

Table 6. Variation in Internship Implementation Across Universities

Observation	Present
Duration and supervision structures vary widely	YES
Assessment methods inconsistent across programs	YES
Lack of centralized regulatory monitoring	YES

Table 7. Stakeholders' Preference for Internship Evaluation Model

Evaluation Model	Percentage (%)
Time-based evaluation	23.9
Competency-based evaluation	80.2

The evidence indicates a fragmented internship ecosystem characterized by weak theory–practice integration, variable supervision, limited digital competence, and inconsistent institutional regulation. Consistent with Ivana (2019), Erbaş (2023), and Abdulkarim (2019), addressing these

shortcomings requires comprehensive reform, anchored in experiential learning principles, supervisor capacity-building, digital innovation, and outcome-based evaluation. Such reforms would align Nigerian architectural education with global best practices while enhancing the professional readiness and adaptability of graduates.

Conclusion

This research has examined the effectiveness of internship programs in Nigeria's architectural education through a comprehensive mixed-methods approach, identifying both significant challenges and promising opportunities for enhancement. The findings reveal that while internships serve as an essential bridge between academic and professional worlds, their current effectiveness is limited by several interconnected factors, including the theory-practice divide, variable supervision quality, technology integration challenges, and structural barriers. The study makes several original contributions to the literature on architectural education. First, it provides empirical evidence of specific challenges, addressing a significant gap in current research. Second, it proposes a comprehensive framework for enhancing internship effectiveness that integrates pedagogical, technological, and regulatory dimensions. Third, it adapts global best practices to local constraints and opportunities, offering contextually relevant strategies for improvement.

Implications for Practice

The findings suggest several practical implications for enhancing internship experiences within Nigerian architectural education. First, academic institutions and professional bodies should develop more structured support for workplace supervisors, including training programs, detailed guidelines, and clearer communication channels. Second, technology integration should be reconsidered to develop transferable digital literacy rather than specific software skills, with particular attention to bridging gaps between academic and practice environments. Third, the research suggests value in exploring more integrated learning approaches that create iterative movement between academic and practice settings throughout the educational journey, rather than concentrating practical experience primarily in a dedicated internship period. Such approaches might include more frequent short-term placements, practice-integrated academic projects, and collaborative teaching between academic and practitioner instructors.

Policy Recommendations

Based on the research findings, several policy recommendations emerge for regulatory bodies and educational institutions:

1. ARCON and NIA might consider developing more detailed guidelines for internship experiences that specify not only duration but also quality standards, supervision requirements, and learning outcomes. Additionally, there is opportunity to enhance recognition of effective supervision within professional development frameworks, creating incentives for quality mentoring.

2. Educational institutions might reconsider how professional practice is integrated throughout the curriculum, with particular attention to sequencing learning experiences that progressively develop professional competencies.
3. Finally, both regulatory and educational bodies might explore more systematic mechanisms for gathering feedback on internship experiences to support continuous improvement

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