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Research Article

# Applying Project Management Principles to Interior Architecture Studio Projects

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## ABSTRACT

Interior architecture studio projects sit at the intersection of creative design and complex project delivery. While studio pedagogy emphasises iterative exploration, conceptual development, and craft, professional practice relies on structured project management to deliver outcomes on time, within scope, and on budget. This article investigates how established project management principles can be intentionally applied within interior architecture studios to improve learning outcomes, project efficiency, and professional preparedness. Drawing on literature from project management, design pedagogy, and architecture practice, the study develops a theoretical framework that integrates project management processes (initiating, planning, executing, monitoring & controlling, closing) with design studio cycles (research, ideation, development, detailing, presentation). A qualitative case study methodology—comprising three studio projects, semi-structured interviews with students and instructors, participant observation, and document analysis—was employed to explore tensions, affordances, and strategies for integrating project management into studio workflows. Thematic analysis revealed five key themes: alignment of scope and creativity, staged planning as a scaffolding tool, communication and stakeholder simulation, risk awareness and mitigation, and reflective project closure. The paper concludes with practical recommendations for studio instructors and curriculum designers, suggesting specific pedagogic interventions (project charters, milestone schedules, risk logs, client brief simulations, reflective post-mortems) while preserving the studio's exploratory ethos. Implications for professional readiness, interdisciplinarity, and further research are discussed.

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# 1. Introduction

Interior architecture studio projects inhabit a dual role: they are pedagogic environments in which students acquire critical design skills and professional practices, and they are microcosms of real-world projects that must negotiate resources, time, and client demands. Traditional design studios, shaped by the atelier model and later academic reforms, emphasise open-ended inquiry, iterative prototyping, and critique-driven development (Schön, 1983; Lawson, 2006). However, professional practice requires competencies in project planning, stakeholder management, procurement, scheduling, and risk mitigation—competencies codified within project management frameworks such as PMI's A Guide to the Project Management Body of Knowledge (PMBOK® Guide) and ISO 21500 (Project Management Institute, 2017; ISO, 2012). This divergence raises a central pedagogic question:

> How can project management principles be integrated into interior architecture studio projects without stifling creativity?

Recent conversations in design education advocate for bridging studio learning and practice through authentic assessment, simulated clients, and scaffolded project complexity (Cross, 2006; Groat & Wang, 2002). Such approaches aim to mitigate the "transition shock" many graduates experience when confronted by the administrative and managerial demands of practice (Winch, 2014). Yet, there remains limited systematic guidance on which project management tools and processes translate effectively into studio contexts, and how their adoption impacts design processes, student learning, and project outcomes.

This article addresses that gap by examining the application of project management principles in interior architecture studio projects. The objective is threefold:

- To conceptualise a theoretical framework that maps project management processes onto studio cycles;
- To empirically explore how selected project management practices operate within studio settings through a qualitative case study; and
- To propose pedagogically appropriate interventions and recommendations for curricula.

The research question that guides this study is:

> How can project management principles be applied within interior architecture studio projects to enhance project delivery, support student learning, and prepare students for professional practice, without undermining creative exploration?

Several assumptions guided the study. First, project management need not be solely bureaucratic—when tailored, it can surface constraints that stimulate design decisions and support reflective practice (Kerzner, 2017). Second, students benefit from exposure to real-world process language (e.g., scope, schedule, risk) while having

protected opportunities to experiment. Third, a balance is necessary: too rigid an implementation of management processes risks curtailing divergent thinking; too loose a treatment may leave students unprepared for the multi-actor realities of professional work.

The significance of this study lies in its attempt to reconcile two disciplinary cultures—design and management—through an evidence-informed pedagogic approach. While project management literature is comprehensive on techniques for time, cost, and quality control, its translation into studio pedagogy requires sensitivity to the unique cognitive and social textures of design work. This article, therefore, frames project management interventions as pedagogic scaffolds: tools that can structure creative inquiry while preserving serendipity, ambiguity, and critical reflection.

The remainder of the article is structured as follows. Section 2 reviews literature from project management, design pedagogy, and architectural practice to identify convergences and tensions. Section 3 develops a theoretical framework integrating project management processes with studio phases. Section 4 explains the qualitative research methodology, including case selection, data collection, and analysis procedures. Section 5 presents findings from three interior architecture studio projects. Section 6 discusses thematic implications and pedagogic recommendations. Section 7 concludes with limitations and directions for future research.

# 2. Literature Review

This literature review synthesises scholarship from three domains: project management theory, design studio pedagogy, and applied architectural practice. The aim is to identify theoretical and empirical foundations for integrating project management principles into interior architecture studios.

## 2.1 Project Management Principles and Tools

Project management as a discipline codifies standardised processes and knowledge areas to facilitate predictable delivery of objectives (Project Management Institute, 2017). The PMBOK® Guide organises project work into five process groups—initiating, planning, executing, monitoring & controlling, and closing—and ten knowledge areas, including scope, time, cost, quality, resource, communication, risk, procurement, stakeholder, and integration management (Project Management Institute, 2017). ISO 21500 provides high-level guidance applicable across sectors, emphasising alignment between organisational strategy and individual projects (ISO, 2012).

Scholars highlight that while tools such as Gantt charts, critical path analysis, and risk registers are widely used in construction and engineering, the challenge in creative fields is translating these tools into forms that support rather than constrain exploration (Kerzner, 2017; Winch, 2014). Agile and lean approaches—originating in software development and manufacturing—have been proposed as flexible alternatives, emphasising iterative delivery, cross-functional teams, and stakeholder feedback

loops (Beck et al., 2001; Liker, 2004). Within design contexts, agile-like sprints and iterative deliverables can mirror studio critiques and iterative prototyping (Hernández & Morales, 2018).

## 2.2 Design Studio Pedagogy and Cognitive Processes

The design studio has been extensively studied as both a pedagogic and epistemic setting. Donald Schön's influential concept of the "reflective practitioner" positions the studio as a site for artistry, reflection-in-action, and conversation-with-the-material (Schön, 1983). Lawson (2006) and Cross (2006) discuss how designers progress through problem framing, concept generation, and iterative refinement—processes that are non-linear and heuristic. Studio critiques (crits) function as formative assessment mechanisms, shaping design decisions through dialogic feedback (Dutton, 1987).

Tensions occur when the studio's open-endedness clashes with external constraints (budgets, codes, client demands). Teaching strategies that foreground real-world constraints—such as simulated client briefs, budget parameters, and building codes—help students develop applicable competencies while retaining creative agency (Groat & Wang, 2002). However, integrating procedural tools from management requires careful curricular design to ensure that procedural knowledge complements tacit design skills.

## 2.3 Project Management in Architectural and Interior Practice

Architectural and interior design practices routinely employ project management to coordinate consultants, contractors, and clients (Winch, 2014; Emmitt & Gorse, 2003). Research in construction management emphasises the importance of early-phase decision-making, stakeholder alignment, and integrated design processes to reduce rework and cost overruns (Koskela, 2000). Authors argue that early clarification of scope and constraints can improve design outcomes by providing focused constraints that foster creativity (Stempfle & Badke-Schaub, 2002).

Studies on pedagogy for professional readiness note that graduates often excel in conceptual design but lack competencies in documentation, procurement, and contract administration (Groat & Wang, 2002; Cuff, 1991). Integrating project management practices into studio courses can address this mismatch, improving employability while grounding creative work in pragmatic understandings of delivery.

## 2.4 Integration Attempts and Pedagogic Strategies

Several pedagogic strategies have been proposed to blend managerial practices into studio settings. These include staged deliverables tied to milestone reviews, team-based project roles, simulated clients/briefs, budgeting exercises, and reflective journals that record decision rationales (Davis, 2015; Hernández & Morales, 2018). Assessment frameworks that evaluate both design quality and process maturity encourage students to

attend to project management behaviours (Biggs & Tang, 2011).

However, the literature also warns against over-formalisation: strict adherence to management checklists can infantilise design thinking and reduce tolerance for ambiguity (Schön, 1983). The pedagogic challenge is therefore to create "lightweight" management structures—tools that are informative but not prescriptive.

## 2.5 Analytical Gaps

While literature spans both pedagogic and professional domains, empirical research specifically examining the lived experience of applying project management processes in interior architecture studios is limited. Questions remain about which tools are most pedagogically effective, how to scaffold them across semester timelines, and how assessment can recognise process competencies alongside design excellence. This study contributes by empirically exploring these dynamics through qualitative inquiry.

# 3. Theoretical Framework

To guide the empirical work, this study develops a theoretical framework that integrates classical project management process groups with studio-based design phases. The framework situates project management principles not as constraints but as scaffolds that can support reflective practice, enhance communication, and cultivate professional competencies.

## 3.1 Conceptual Integration: Process Groups and Studio Phases

The PMBOK® process groups—initiating, planning, executing, monitoring & controlling, and closing—are reinterpreted through a design-studio lens:

Initiating ↔ Brief Development & Project Framing: In studios, initiating involves problem framing, contextual research, and client brief interpretation. Activities include formulating a project charter, identifying objectives, and clarifying scope.

Planning ↔ Concept Synthesis & Design Strategy: Planning in the studio encompasses program development, spatial and material research, milestone scheduling, resource allocation (time, models, consultants), and establishing evaluation criteria.

Executing ↔ Design Development & Production: Execution maps to iterative design generation, prototyping, documentation, and coordination with external stakeholders (when present). It involves producing deliverables aligned with agreed milestones.

Monitoring & Controlling ↔ Critique, Quality Control & Recalibration: Studio crits function as monitoring points where progress is evaluated against goals and constraints; corrective actions are taken to realign design work with objectives.

Closing ↔ Project Handover & Reflective Review: Closure includes final presentation, submission of documentation, and reflective post-mortems that assess outcomes, processes, and learning.

This mapping foregrounds process but preserves the iterative and often non-linear character of design work by recognising feedback loops between phases (Schön, 1983; Cross, 2006).

## 3.2 Pedagogic Constructs: Scaffolding, Authenticity, and Reflective Practice

Three pedagogic constructs underpin the framework:

Scaffolding: Borrowing from educational theory, scaffolding refers to temporary supports that enable learners to perform tasks beyond their unaided capabilities (Vygotsky, 1978). Project management tools (e.g., charters, milestone schedules, risk logs) are conceptualised as scaffolds that can be faded as students gain competence.

Authenticity: Authentic learning tasks simulate real-world complexity and stakeholder interaction, improving transfer of skills to practice (Herrington & Oliver, 2000). Simulated clients, procurement exercises, and multi-disciplinary coordination provide authenticity.

Reflective Practice: Reflection-in-action and reflection-on-action remain central (Schön, 1983). Integrating formal reflective tasks (journals, post-mortems) encourages metacognition about decisions moderated by management constraints.

## 3.3 Design Tensions and Boundary Conditions

The framework acknowledges tensions that must be managed:

Constraint vs. Freedom: While constraints can catalyse creativity, overly prescriptive management risks limiting divergent exploration. The framework, therefore, advocates for "appropriately bounded" constraints—clear enough to orient work but flexible enough to permit exploration.

Formality vs. Flexibility: Tools should be lightweight and adapted to the studio's rhythm. For example, a two-page project charter may suffice over a lengthy contract.

Individual Exploration vs. Team Coordination: Many studios prioritise individual authorship; project management is particularly resonant for team projects, where role clarity and communication are essential.

## 3.4 Outcomes of Integration

The framework proposes that integrating project management principles will yield several outcomes:

- Improved Project Predictability: Clear milestones and scope definitions lead to more predictable progress and reduced last-minute crises.
- Enhanced Professional Preparedness: Students gain vocabulary and habits of practice—schedules, risk awareness, client communication.
- Strengthened Reflective Learning: Structured closure activities support critical reflection and transferable learning.
- Preserved Creative Agency: When tools are applied judiciously, creativity is scaffolded rather than curtailed.

This theoretical framework informed the design of the empirical study described in the next section.

## 4. Research Methodology

A qualitative case study methodology was selected to explore how project management principles operate within the complex, context-dependent environment of interior architecture studios (Yin, 2018; Stake, 1995). The following subsections detail case selection, participants, data collection methods, analytical approach, ethical considerations, and trustworthiness measures.

### 4.1 Research Design and Rationale

Case study research is appropriate for examining contemporary phenomena within real-life contexts where boundaries between phenomenon and context are blurred (Yin, 2018). Given the exploratory aim—to understand processes, perceptions, and pedagogic outcomes—qualitative inquiry enables in-depth, nuanced interpretation (Creswell & Poth, 2018). Three studio projects were selected as instrumental cases to reveal variation across project types, team sizes, and instructor approaches.

### 4.2 Case Selection and Context

Three final-year interior architecture studio projects from a single university's design department were purposively sampled over one academic semester. Selection criteria included:

- Variety in project scale and scope: one small-scale residential retrofit (individual work), one medium-scale commercial fit-out (team of three), and one public-space adaptive reuse (team of five).
- Willing instructor participation: instructors who were open to integrating lightweight project management tools during the semester.
- Feasibility for observation: projects with scheduled critiques and access to documentation.

The diversity aimed to capture how project management integration functions across contexts where team coordination demands differ.

### 4.3 Participants

Participants included:

- Nine student participants (three per project; for the individual project, the single student participated in interviews and observations).
- Three studio instructors.
- Two external stakeholders participated in simulated client reviews (for the fit-out and adaptive reuse projects).

Participants were recruited through course announcements and provided informed consent. Students ranged in age from 22 to 26. Ethical approval was obtained from the university research ethics board before data collection.

### 4.4 Data Collection Methods

A triangulated data collection strategy was used to increase credibility (Denzin, 1978):

Semi-Structured Interviews: Conducted with students and instructors twice—mid-semester (to capture unfolding experiences) and post-submission (to capture reflections). Interview guides covered perceptions of management tools, impacts on design decisions, time management, communication, and learning outcomes. Interviews lasted 45–60 minutes and were audio-recorded and transcribed verbatim.

Participant Observation: The researcher attended scheduled crits, interim reviews, and team meetings. Field notes documented interactions, references to schedule/scope, and how management artefacts were used in practice.

Document Analysis: Collected artefacts included project charters, milestone schedules, meeting minutes, risk logs (where present), student reflective journals, and final submissions. These provided evidence of process and artefacts.

Reflective Journals: Students were asked to keep short reflective logs at three-week intervals, noting decisions, challenges, and perceived project health.

Artefact Photographs: Models, drawings, and documentation were photographed to contextualise observations.

## 4.5 Intervention: Lightweight Project Management Tools

Instructors agreed to incorporate a set of lightweight project management interventions for the semester:

- Project Charter (1–2 pages): Stating project objectives, scope, deliverables, constraints, and success criteria.
- Milestone Schedule: A Gantt-like timeline with primary deliverables and crit dates.
- Risk Log: A one-page register noting key risks, likelihood, impact, and mitigation actions.
- Communication Protocol: Defined meeting cadence and feedback channels.
- Post-Project Reflection Template: Structured prompts for closure.

These tools were introduced in a single 90-minute workshop at project initiation. Students were given templates and encouraged—but not mandated—to adapt them.

## 4.6 Data Analysis

Data were analysed using reflexive thematic analysis (Braun & Clarke, 2006; 2019). The steps included:

- Familiarisation: Reading transcripts, observation notes, and artefacts multiple times.
- Coding: Generating initial codes related to perceptions of the tools, impact on process, tensions, and learning outcomes. Coding was iterative and inductive, although codes related to the theoretical framework (scope, schedule, risk, reflection) were also used deductively.
- Theme Development: Codes were clustered into candidate themes (e.g., "scope as creative constraint", "milestones as scaffolds").

- Review and Refinement: Themes were reviewed against the data corpus for coherence and distinctness.
- Interpretation: Themes were related to the theoretical framework and literature.

NVivo (or similar qualitative software) was used to organise data, but analysis remained researcher-driven.

### 4.7 Trustworthiness and Rigour

Several strategies were adopted to ensure rigour:

- Triangulation: Using multiple data sources (interviews, observations, documents).
- Member Checking: Summaries of initial findings were shared with participants for validation and clarification.
- Reflexivity: The researcher maintained a reflexive journal documenting assumptions and interpretive decisions.
- Thick Description: Detailed descriptions of context supported transferability judgments.

### 4.8 Limitations of Methodology

The study's limitations include the small sample drawn from a single institution, which constrains generalizability. The voluntary adoption of the interventions may have led to a self-selection bias—students and tutors amenable to management practices may have participated more actively. Despite these constraints, the qualitative approach yielded rich insights into process dynamics applicable to similar educational settings.

## 5. Findings

Data analysis produced five principal themes describing how project management principles manifested in studio projects: scope as a creative constraint, staged planning as a scaffolding tool, communication practices and stakeholder simulation, risk awareness and mitigation, and reflective closure and learning transfer. Each theme is described below with illustrative evidence.

### 5.1 Scope as a Creative Constraint

Students and instructors reported that developing a concise project charter early in the semester helped clarify intentions and prevent unchecked scope creep. For the commercial fit-out team, the charter's space-use matrix and success criteria provided a shared vocabulary for evaluating design options. One student noted,

> *"Once we wrote down what we were trying to achieve, it became easier to judge ideas objectively—even when we wanted to pursue something more speculative" (Student A, mid-semester interview).*

However, some students initially perceived the charter as limiting. In the adaptive reuse team, a tension emerged between ambitious conceptual shifts and charter parameters set with a simulated client. An instructor reflected on the charter.

> *"forced negotiation—students had to justify deviations to their client, which is a real skill" (Instructor 2, post-submission).*

The net effect was that scope definition acted as a productive constraint: it redirected rather than extinguished creative exploration.

## 5.2 Staged Planning as a Scaffolding Tool

Milestone schedules became central scaffolds. Teams that actively used the milestone schedule reported smoother time management and fewer last-minute deliverable rushes. The commercial fit-out team instituted fortnightly internal milestones aligned with crits, which helped distribute workload equitably among members. A student said,

> *"Having a visible schedule motivates smaller, daily tasks. It breaks the panic syndrome where everything piles up before presentation" (Student B, post-submission).*

Interestingly, the utility was not in the exactness of dates but in the habit of staging work: defining intermediate outputs (e.g., concept diagrams, material boards, 1:50 plans) created progressive commitments that guided design development. In contrast, the individual residential project—where the student treated the schedule more flexibly—experienced episodic bursts of productivity and corresponding stress.

## 5.3 Communication Practices and Stakeholder Simulation

The communication protocol (meeting cadence, feedback loops) and simulated client reviews introduced students to stakeholder management dynamics. Teams reported that articulating design decisions in client-facing language (budget implications, phasing) improved argumentation and accountability. The adaptive reuse team incorporated two external stakeholders during mid-semester reviews; feedback focused on functionality and maintenance—issues that had been peripheral to the students' original conceptual priorities. This prompted a productive re-evaluation of materials and circulation strategies.

Students also noted that defined communication channels reduced misinterpretations. For example, the fit-out team used asynchronous meeting minutes and a shared document repository; this diminished duplication of effort. Instructors observed improved coordination during critique sessions when teams presented marketable narratives rather than abstract idea bundles.

## 5.4 Risk Awareness and Mitigation

The risk log was the least enthusiastically embraced artefact initially, but proved valuable when activated. Teams that engaged with the risk register identified practical contingencies (material lead times, model-making resource constraints, team illness) and proposed mitigations (alternate suppliers, simplified detailing). One student recounted how anticipating a model-making delay prompted earlier fabrication of critical components, preventing a last-minute absence at the final presentation.

Beyond logistical risks, teams used the log to flag conceptual risks—areas where client acceptance or technical feasibility was uncertain. This explicit treatment reframed uncertainty as manageable, encouraging early testing (mock-ups, stakeholder

interviews). Instructors appreciated that students began to weigh decisions against likelihood and impact, fostering stewardship of project viability.

### 5.5 Reflective Closure and Learning Transfer

Structured post-project reflections elicited detailed accounts of decision rationales, perceived success against the charter, and lessons learned. Reflection templates prompted students to connect process behaviours (time management, communication) with design outcomes, supporting deeper metacognitive learning. For example, a student in the fit-out team noted that earlier stakeholder alignment could have prevented a late-programme amendment that required reworking plan layouts—an insight that directly linked process choices to consequences.

Instructors reported that reflections served as diagnostic tools for curriculum improvement—revealing recurring gaps (e.g., detailing competence, procurement literacy) and informing future studio scaffolds. The collective set of reflections from the three cases suggested that students internalised process vocabulary and reported increased confidence in articulating project constraints to prospective employers.

### 5.6 Cross-Case Observations

Comparing cases showed that teams with greater interdependence benefited most from project management tools—communication protocols and milestone schedules were particularly impactful for multi-member teams. Individual projects could still gain from scope clarity and reflection, but the absence of coordination demands meant certain tools (e.g., communication protocol) were less relevant. Instructor engagement emerged as a key moderator: where instructors actively modelled and reinforced tool usage, student uptake was higher.

## 6. Discussion

This section interprets findings in relation to the theoretical framework and broader literature, examines pedagogic implications, and offers concrete recommendations for studio practice.

### 6.1 Reconciling Management and Creativity

The data illustrate that project management need not be antithetical to creative exploration; when positioned as scaffolding, it can support and enhance design processes. This aligns with arguments that constraints, when well-chosen, can catalyse creativity by bounding the solution space and encouraging problem-focused innovation (Stempfle & Badke-Schaub, 2002). The project charter functioned as such a constraint—explicit goals helped students make more defensible choices without stifling generative ideation.

This reconciliatory stance echoes Schön's (1983) model of reflective practice: structured information about context (scope, stakeholders) provides the "frame" within which reflection-in-action occurs. By integrating management artefacts that foster reflection, studio teaching can simultaneously cultivate artistry and professional agency.

## 6.2 Lightweight Tools—A Pedagogic Sweet Spot

One clear implication is the value of lightweight, adaptable tools. Students and tutors favoured concise charters and simple milestone schedules over heavyweight, formalised plans. This supports the argument that management practices must be translated into forms congruent with studio rhythms—borrowed from PMBOK principles but simplified for pedagogic use (Project Management Institute, 2017). The agility of these tools allowed students to treat them as living documents that could be negotiated and updated, aligning with agile philosophies about responsiveness and iterative learning (Beck et al., 2001).

## 6.3 Teamwork and Coordination

Project management principles proved particularly potent for team-based projects. Coordination complexity—role allocation, shared deliverables, and aligning visual language—benefited from clear protocols. These findings resonate with organisational studies emphasising that formalised communication channels reduce coordination costs and information asymmetry (Mintzberg, 1979). In practice, simple interventions—designating a meeting chair, producing concise minutes, and maintaining shared repositories—yielded measurable improvements in workflow and accountability.

## 6.4 Risk Literacy and Proactive Testing

The deployment of risk logs introduced students to a critical but often neglected dimension of design practice: anticipating and mitigating uncertainties. The log encouraged early prototyping and supplier engagement, translating abstract risks into concrete actions. This approach aligns with principles in integrated project delivery and lean construction, which advocate for early testing and stakeholder involvement to reduce rework (Koskela, 2000). Cultivating risk literacy in studio settings enhances students' capacity to make decisions that balance ambition with feasibility.

## 6.5 Reflection and Assessment

Reflective post-mortems supported transfer by making tacit knowledge explicit. Students who engaged with structured reflection articulated actionable improvements and could communicate process rationales more clearly—skills valued by employers (Groat & Wang, 2002). Assessment frameworks that recognise process competencies—time management, communication, documentation—alongside aesthetic and functional quality would incentivise student engagement with management tools and better align academic evaluation with professional expectations.

## 6.6 Pedagogic Recommendations

Drawing on the empirical evidence and theoretical framing, the following practical recommendations are offered for instructors and curriculum designers:

- Introduce Lightweight Project Charters at Initiation: A one- to two-page charter co-developed with students (and simulated clients where possible) clarifies objectives and

success criteria without imposing rigidity.

- Use Staged Milestones, Not Micromanaged Schedules: Milestones should specify intermediate deliverables (e.g., conceptual diagrams, material palettes, 1:50 plans) and be accompanied by short checklists to guide production.
- Embed Communication Protocols for Team Projects: Define meeting frequency, roles (facilitator, note-taker), and a shared document repository. Encourage concise minutes and action logs.
- Introduce a Simple Risk Register: Teach students to identify likelihood and impact and to propose mitigations. Encourage converting conceptual risks to testable hypotheses (mock-ups, user testing).
- Simulate Stakeholders and External Reviews: Invite professionals or enact client roles to expose students to negotiation and accountability dynamics. Use real procurement and code scenarios where feasible.
- Require Reflective Closure Documents: A guided post-project reflection should link process behaviours to outcomes and identify transferable lessons.
- Integrate Process Criteria into Assessment Rubrics: Allocate a portion of the project grade to process management (planning, communication, documentation, reflection) to legitimise these skills.
- Model Tool Usage as Instructors: Instructor modelling—showing how to create and use tools—boosts student uptake. Workshops on basic scheduling and risk analysis can be brief and practice-oriented.

## 6.7 Balancing Structure and Openness

A central pedagogic balancing act emerges: providing enough structure to support reliable project delivery and professional skill acquisition while preserving the studio's characteristic openness. The evidence suggests that deliberately minimal formalisation—tools that students can own and adapt—achieves this balance. Instructors should emphasise that management artefacts are reflective instruments, not prescriptive constraints.

## 6.8 Curriculum-Level Considerations

For sustained impact, project management literacy should be scaffolded across curricula. Early-level studios might introduce basic concepts (charters, deadlines), while advanced studios incorporate complex simulations (multi-disciplinary coordination, procurement). Cross-disciplinary collaboration with construction management or business departments can enrich authenticity and expose students to diverse professional languages.

## 6.9 Implications for Employability and Practice Readiness

Students who engaged with management tools reported increased confidence in

communicating process issues to employers. Given industry calls for graduates who can operate both creatively and administratively, integrating management literacy into studios contributes to employability (Winch, 2014; Groat & Wang, 2002). Firms increasingly value designers who can manage client expectations, timelines, and budgets—competencies that lightweight studio project management can cultivate.

# 7. Conclusion

This study examined how project management principles can be adapted and applied within interior architecture studio projects to support both project delivery and student learning. By developing a theoretical framework that maps PMBOK® process groups onto studio phases and conducting a qualitative case study across three studio projects, the research identified practical pathways for integrating management practices without sacrificing creative exploration.

Key findings indicate that lightweight project management tools—project charters, milestone schedules, communication protocols, risk logs, and structured reflections—serve as pedagogic scaffolds. They improve coordination in team contexts, promote clearer decision rationales, encourage proactive mitigation of both logistical and conceptual risks, and support reflective transfer of learning. Importantly, the study shows that formalisation need not be heavy-handed; rather, flexibility and instructor modelling are crucial to successful adoption.

Pedagogic recommendations emphasise introducing concise charters early, staging deliverables with meaningful milestones, fostering communication protocols for team projects, and embedding reflective post-mortems. Assessment should recognise process competencies to align incentives. For longer-term curricular impact, project management literacy should be scaffolded progressively across programs and enriched by cross-disciplinary collaboration when possible.

## 7.1 Limitations and Future Research

Limitations include the small sample size and single-institution context, which restrict generalizability. Future research could expand to multiple institutions, longer longitudinal designs tracking students into practice, and quantitative measures of project performance (e.g., adherence to timelines, quality metrics). Comparative studies between programs that do and do not integrate management training would further illuminate efficacy.

Interior architecture education faces the dual imperative of cultivating creative excellence and preparing graduates for the managerial realities of practice. This study demonstrates that project management principles, when translated into lightweight, pedagogically sensitive tools, can enrich studio learning, strengthen professional readiness, and preserve the studio's essence as a space of exploration. Educators are encouraged to experiment with the recommended interventions, adapt them to local contexts,

and document outcomes to build an evidence base for best practices.

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