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The FUSION Model: Smart Integration of Tradition and Innovation in Medical Education

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Introduction: The tension between tradition and innovation is a defining challenge in medical education, yet the literature lacks a strategic framework to guide educators through this dynamic.

Methods: This study addresses this gap using a ten-year qualitative autoethnography, drawing on a 65,000-word corpus of reflective journals and institutional artifacts to explore the educator's lived experience.

Results: The findings reveal a spectrum of three professional archetypes in response to this tension: Oppositionists, who view the two as rivals; Passive Integrators, who blend them reactively; and Smart Integrators, who do so with intentional purpose. Based on these insights, the study proposes the FUSION Design Helix, a dual-layered framework for strategic integration. The core comprises a six-stage process - ranging from 'Framing Goals' to 'Navigating Implementation' - which is synthesised through the macro-phases of Design Thinking: Inspiration, Ideation, and Implementation. By positioning tradition and innovation as complementary resources rather than rivals, the Helix provides a proactive, design-oriented engine for curriculum development.

Conclusion: Collectively, the findings reposition educational change as an act of purposeful pedagogical design rather than reactive compromise, offering a scalable cognitive framework for cultivating reflective educators and building resilient, future-ready curricula in medical education. Practically, the model provides medical schools and faculty developers with a structured roadmap for planning, implementing, and sustaining pedagogically grounded innovation while strengthening the educators' capacity for reflective, theory-informed practice.

Keywords: Curriculum, Integration, Learning, Medical education

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Introduction

In the dynamic landscape of modern healthcare, the role of medical education has never been more critical or contested. The fundamental challenge lies not merely in what is taught but in how an entire system balances the trusted, evidence-based traditions that have defined the medical profession for centuries with the relentless pace of innovation (1). This complex interplay permeates every aspect of a medical school's function, from the foundational curriculum design and pedagogical teaching methods to assessment strategies, class management, and even the pastoral duties that shape a student's professional identity (2). For too long, this crucial dialogue has lacked a wise and widely accepted conclusion, often leading to a series of strategic missteps: either a stubborn adherence to outdated practices that fail to prepare future doctors for new realities, or an enthusiastic but uncritical embrace of unproven innovations without a sound educational rationale (3). This paper argues that the success of medical education hinges on understanding how educators navigate this delicate, system-wide tension, which is essential for ensuring that future programmes are not only robust and responsive but also truly fit for purpose.

To navigate this complex landscape effectively, making wise and widely accepted decisions on how to integrate tradition with innovation requires more than good intentions. It demands that educators and institutions meet a few critical prerequisites. First, and most fundamentally, a clear and shared understanding of both 'tradition' and 'innovation' is essential. Without precise definitions, debates can quickly devolve into mischaracterisations, with 'tradition' being misconstrued as simple resistance to change, and 'innovation' as a purely beneficial, uncritical advance (3-5). Second, the specific context of any potential integration must be thoroughly considered. What works in one clinical department or pedagogical setting may not be suitable for another, and a one-size-fits-all approach is a recipe for failure (5). Third, a balanced perspective is required, one that examines both sides of the coin for any given solution. This means rigorously evaluating the proven strengths and potential limitations of traditional methods, while also critically assessing the promised benefits and potential pitfalls of innovative approaches (3). Finally, and perhaps most importantly, this process demands a particular mindset - one that combines a healthy dose of critical thinking, the curiosity and openness of a beginner's mind, and a willingness to challenge established norms and assumptions (1). Only by meeting these preconditions can medical educators hope to move beyond ideological divides and foster a culture of thoughtful, evidence-based progress.

A review of the literature reveals several key themes in the ongoing debate between tradition and innovation in medical education. To provide a clear overview, the key findings from these studies are summarised in Table 1 below, followed by a more detailed analysis.

A brief outline of each of these three categories is provided below:

Pedagogical and curricular methods

A persistent dichotomy exists between traditional and innovative approaches in medical pedagogy, yet a clear consensus emerges that neither should exist in isolation. Several studies directly compare the effectiveness of these two paradigms, finding that while innovative methods - such as computer-mediated discussions, virtual dissection, and digital learning platforms - can enhance knowledge retention and efficiency, they often fail to replicate the unique pedagogical value of traditional methods (1, 11, 13).

Table 1. A thematic summary of the literature on tradition and innovation in medical education

Category of research	Summary of key findings	Supporting references
Pedagogical and curricular methods	Research consistently shows that while innovative teaching methods can enhance efficiency, traditional approaches are often uniquely effective at fostering essential non-cognitive skills like empathy and professionalism. The most promising strategies often blend traditional and innovative techniques, but some innovations may still be associated with a decrease in foundational knowledge and skills.	(1, 6-14)
Systemic and institutional challenges	The push for innovation is frequently hindered by factors beyond the classroom, including outdated academic promotion models and physician preferences for traditional CME formats. Institutions also face a fundamental conflict between traditional business models and new, innovative strategies, with the very mission of academic medicine itself evolving to address this tension.	(9, 10, 12, 15-17)
The role of emerging technology	The literature acknowledges the transformative potential of technologies like AI in areas such as learning and assessment. However, it strongly cautions that their implementation must be strategic and ethical, addressing issues of bias, limitations, and the need for rigorous evidence to justify their use.	(15, 18)

For instance, cadaveric dissection, despite facing logistical and ethical constraints, is consistently shown to foster essential professional traits like empathy and ethical awareness, which are difficult to cultivate through digital alternatives (1, 13). Similarly, live patient encounters, a more traditional active learning modality, consistently outperform technologically advanced novel learning strategies in terms of student-rated effectiveness and their capacity to promote professional development and interpersonal skills (11). This suggests that the value of tradition is often rooted in its ability to cultivate non-cognitive, humanistic skills that are fundamental to a holistic medical education. Importantly, this is not exclusively the domain of tradition, as some studies suggest that innovative curricula, such as problem-based learning (PBL), can also foster better teacher-student relationships and humanistic qualities during the preclinical years (14). Additionally, some innovative methods may be associated with an insufficient amount of survival knowledge and fewer acquired skills, highlighting the need for a balanced perspective (7). The successful integration of traditional and innovative methods has been demonstrated in specific course developments, such as a "Health Information Resources" course spurred by accreditation changes (8), and a "Pain Module" that blended traditional seminars with computer-mediated discussions (6).

Systemic and institutional challenges

Beyond the classroom, the challenge of change is frequently driven by systemic and cultural factors, with a noticeable tension between established institutional norms and the need for reform. The problem is arguably compounded by a prevailing culture where medical innovation remains more closed and regimented than in other fields, often due to age-old traditions reinforced by modern funding and regulatory practices (12). Current models for academic promotion and career advancement for academic physicians, for example, remain based on outdated models and fail to reward collaborative innovation, thereby acting as a barrier to progress (9). This systemic resistance to change is echoed in broader institutional contexts, where the adoption of new strategies, such as population health initiatives, often conflicts with the traditional business models of academic medical centres (16). The literature also indicates a more direct resistance from educators and physicians themselves. A survey of practicing physicians revealed a strong preference for traditional continuing medical education (CME) offerings over innovative, competency-based alternatives, which presents a significant barrier to the successful implementation of new programmes (10). The very mission of academic medicine itself is being reimagined to include new missions like collaboration and equity, which challenges the traditional tripartite model and calls for a new, "palmate" approach (17).

The role of emerging technology

Ultimately, the literature advocates for a nuanced, integrated approach rather than a wholesale replacement of tradition with innovation. The most effective strategies appear to be those that leverage the benefits of new technologies while preserving the irreplaceable value of established methods (13, 17). This balanced approach requires a critical, evidence-based mindset, where educators rigorously test new strategies at the level of the learner and acknowledge their limitations (11, 18). While new generative AI technologies like ChatGPT offer significant potential for personalised learning and assessment, their implementation must be cautious and guided by a clear understanding of their ethical limitations, bias, and the potential for over-reliance (15, 18). The studies reviewed, therefore, suggest a path forward that is neither wholly traditional nor radically innovative but one that intelligently and critically integrates the best practices from both worlds to create a robust and future-proof medical education system.

Research gaps and questions

The literature reviewed consistently highlights a tension between tradition and innovation across various domains of medical education, from pedagogical methods to institutional culture. While individual studies offer valuable insights into specific aspects of this debate, a holistic and strategic understanding remains underdeveloped, revealing several key gaps in the current body of knowledge.

First, the existing literature tends to present tradition and innovation as a dichotomy rather than as a continuum. Studies often either advocate for one side or compare isolated examples, but few explore the spectrum of possible approaches, from a purely traditional model to a purely innovative one, and various hybrid models that exist in between. A lack of this "spectrum perspective" prevents a nuanced understanding of how these two paradigms can synergistically contribute to a more effective educational practice.

Second, a clear and actionable strategic framework or model for the intelligent integration of tradition and innovation is largely absent from the literature. While many papers discuss

the benefits of a blended approach, they rarely provide a concrete, evidence-based mechanism to guide medical educators in making deliberate, well-reasoned decisions about how and when to combine traditional and innovative solutions. This gap leaves educators without a practical roadmap for moving beyond the ideological debate and toward thoughtful, purposeful implementation.

For the purposes of this study, tradition is defined as the set of established pedagogical practices, cultural norms, and time-tested clinical training methods that form the historical foundation of medical education. Conversely, innovation is defined as the purposeful introduction of new technologies, novel instructional designs, or evidence-based shifts in the curricula intended to enhance educational outcomes. Rather than viewing these as chronological markers (the past vs. the present), this study treats them as a dynamic tension between preservation and transformation.

Methods

Study Design and Participants

This study is grounded in a social constructivist ontology and an interpretivist epistemology. The ontology holds that reality is not a single, objective truth but is socially constructed and understood through human experience and interaction (19). This aligns perfectly with the research questions, which seek to understand how medical educators perceive and navigate a complex, subjective tension between tradition and innovation, rather than measure it as an objective phenomenon. The interpretivist epistemology, therefore, posits that knowledge is generated by interpreting these subjective, lived experiences, and the meanings individuals attach to them (20). By exploring the researcher's situated experience - which includes personal reflections, collaborative dialogues, and observations within the academic environment - this study aimed to suggest a deep, contextual understanding of this phenomenon, a key goal of interpretivist research.

To operationalise this philosophical stance, we employed a qualitative autoethnographic approach. This design is the most appropriate and powerful method for addressing the research questions because it directly uses the primary researcher's lived experience as the primary data source to explore a cultural phenomenon (21). This insider perspective is essential for uncovering the nuanced and often-unspoken complexities of navigating tradition and innovation in medical education, a process that is deeply personal and context-dependent. An autoethnographic design allows for a unique, first-person account that is both deeply reflective and theoretically informed, providing insights that are difficult to obtain through external observation or other research methods.

Data Collection and Measurements

Data were gathered over a 10-year period (2013–2023) from approximately 85 reflective journal entries, 40 teaching records, and 120 institutional emails and meeting notes. These materials generated a corpus of roughly 65,000 words of text. This corpus reflects the primary author's experience across undergraduate and postgraduate curricula, research supervision, teaching, academic leadership, and pastoral support, ensuring the model accounts for tensions inherent in diverse educational tiers and roles. This multi-level engagement provides a unique '360-degree' view of the tradition-innovation tension, capturing data from the classroom, laboratory, and executive boardroom.

Sample extracts included reflections written immediately after key educational events (e.g., curriculum reviews, technology pilots, faculty training sessions) and contemporaneous email discussions with colleagues about teaching approaches. To ensure transparency, the selection process encompassed the full spectrum of the tradition-innovation tension, explicitly including both successful integrations and 'negative cases' of failure or professional resistance. Each document was dated, catalogued, and stored in an anonymised database to preserve chronological and thematic coherence.

It is important to clarify that institutional artifacts, such as emails and meeting notes, were not subjected to a formal systems analysis or institutional ethnography. Instead, these documents served as reflexive prompts to facilitate 'memory work' and ensure chronological accuracy in the autoethnographic process. They were used solely to reconstruct the primary author's internal decision-making processes and personal experiences of the tradition-innovation tension, rather than to audit the institution's organisational performance.

Data Analysis

The analysis followed an iterative, multi-stage process of thematic narrative analysis, designed to transform personal, reflective, and institutional data into conceptually grounded findings while preserving the richness of the lived experience (22). The process was cyclical and reflexive, continuously moving between the data, analytic memos, and theoretical literature.

Phase 1: Familiarisation and Open Coding

All data sources—including reflective journals, teaching records, and institutional documents—were read repeatedly to gain an overall sense of the narratives. Using NVivo 12 software, approximately 65,000 words of text were subjected to open coding, resulting in 247 initial codes that captured meanings and actions related to the educators' responses to innovation and tradition. Codes were inductively generated from the data, such as "protecting established practices," "experimenting without clear purpose," and "purposeful blending of new and old."

Phase 2: Pattern Identification and Category Development

Codes were compared and clustered to identify recurring interpretive patterns. Through axial coding and reflective memoing, three meta-patterns emerged that represented distinct ways educators navigated the tradition–innovation tension (The Oppositionists, The Passive Integrators, The Smart Integrators). (Further information about these three perspectives are provided in the Findings section of the manuscript).

These categories were supported by multiple data points across both insider (personal reflections) and outsider (institutional dialogues) sources, ensuring triangulation and interpretive depth. Illustrative excerpts were documented in analytic memos to maintain an audit trail from raw data to interpretive category.

Phase 3: Model Construction and Theoretical Integration

Building upon the "Smart Integrator" category - the most proactive and strategic stance - the analysis turned to identifying the underlying cognitive and behavioural processes that characterised purposeful integration. Through further coding and constant comparison, six recurring phases were identified across reflective and institutional narratives, corresponding to the sequential stages of The FUSION Model.

The resulting model offers a framework for strategic, deliberate integration of tradition and innovation, emphasising that both are resources rather than rivals, and that effective balance arises from intentional design rather than compromise. Each stage of the FUSION Model was crossvalidated against existing literature on educational change and curriculum innovation to ensure conceptual alignment and analytical robustness.

Throughout all phases, reflexivity was maintained through journaling and memoing to critically examine interpretive assumptions and ensure that analytical insights were grounded in both data and theoretical reflection.

Ethical Considerations and Trustworthiness

The study was conducted in accordance with the university research ethics policy, which exempts self-reflective autoethnography not involving third-party participants.

Following Guba and Lincoln's four criteria, to ensure credibility, we performed triangulation through the integration of multiple data sources (personal reflections, institutional records, dialogues) and by member-checking the key interpretations with two trusted colleagues who reviewed anonymised extracts.

Transferability was supported through detailed descriptions of the institutional and cultural context, allowing the readers to judge applicability to their own educational environments. Dependability was enhanced by maintaining an audit trail of data sources, coding decisions, and analytic memos, all dated and stored systematically. Confirmability was reinforced by reflexive journaling throughout the process, acknowledging positionality and potential biases in interpretation.

As an insider researcher, the primary author maintained a reflexive stance throughout the study to mitigate bias. While the autoethnographic data is rooted in the primary author's decade of experience, the analysis was a collaborative process involving the both authors. We engaged in 'critical dialogue' to challenge interpretations, ensuring that the final FUSION model transcends individual subjectivity and achieves broader theoretical resonance.

Results

The findings of this study are presented in two distinct parts, mirroring the research questions that guided this inquiry. The first section details the various approaches and strategies used to navigate the tension between traditional and innovative practices in medical education. The second section proposes a conceptual model for the effective and smart integration of these two paradigms, derived from the key themes and experiences identified in the data. This structure allows for a clear and systematic presentation of the study results, moving from the exploration of existing practices to the proposition of a new guiding model.

Approaches to Integrating Tradition and Innovation

This section presents the findings exploring

the key approaches medical educators use to navigate the tension between traditional and innovative practices. The autoethnographic data revealed a spectrum of strategies categorised into three main approaches: The Oppositionists, The Passive Integrators, and the Smart Integrators. The Oppositionist category is further divided into two distinct groups: the Conservative Traditionalists and the Trend-Driven Innovators. These labels are employed strictly as analytical constructs for descriptive clarity and are not intended as personal value judgements on individual practitioners. As shown in Table 2, these approaches, each with its own definitions, outcomes, and rationales, illustrate the diverse ways medical educators confront the challenge of blending the established with the new.

Further details about each of these approaches are provided below:

o The Oppositionists

The first identified approach, *The Oppositionists*, is defined by a fundamental belief that tradition and innovation exist in an irreconcilable dichotomy, an either/or paradigm where one must necessarily supplant the other. This perspective often leads to a static environment of stagnation or reckless change, with little room for thoughtful integration. The underlying justification for this approach is a deep-seated fear of dilution or loss - whether it's the loss of time-tested clinical wisdom and identity or the fear of being left behind in a rapidly evolving academic landscape. This stance serves as a protective mechanism for core professional values, ensuring that fundamental principles are not discarded lightly in the face of transition. This dichotomy manifests in two distinct sub-approaches.

The first, The *Conservative Traditionalists*, idealise established legacy practices and actively resist change. Their justification stems from a profound trust in time-tested clinical wisdom, which they believe is at risk of being diluted by new methods. This approach, while fostering a strong sense of professional identity, ultimately limits adaptability to modern healthcare demands. Following this approach, academics view traditional methods as sacred and innovation as a threat. In my 2017 journal, I noted a colleague's firm stance: *'We have taught this way for thirty years; why should we gamble with student safety for the sake of a new app?'* This sentiment was recurrent, appearing in 12 separate meeting notes as a 'barrier of preservation' rather than a dialogue."

The second sub-approach, *The Trend-Driven Innovators*, represents the opposite extreme. They prioritise novelty and technological advancements over pedagogical continuity or established practices. Their justification is a desire for modern appeal and institutional relevance, often leading to shallow innovation that lacks deep pedagogical roots.

This dichotomy is clearly illustrated by a case from my experience: During a curriculum review, the proposal for a new simulation module was met with a clear division. A long-serving professor, a *Conservative Traditionalist*, resisted the change, arguing that no technology could replace the "sacred" hands-on experience and that the new module would dilute the core of time-tested surgical training. Conversely, a younger colleague, a *Trend-Driven Innovator*, argued for an immediate and full digital curriculum overhaul, prioritising modern appeal and institutional relevance over the pedagogical value of the proposed module itself. This clash between idealising legacy practices and pursuing novelty for its own sake left the curriculum in a state of paralysis.

o The Passive Integrators

The second approach, The Passive Integrators,

Table 2. A Summary of Approaches to Integrating Tradition and Innovation

Approach		Definition	Key Outcome(s)	Justification / Rationale
The Oppositionists	The Conservative Traditionalists	Idealise established practices and actively resist change.	Strong professional identity; limited adaptability.	Profound trust in time-tested clinical wisdom.
	The Trend-Driven Innovators	Prioritise novelty and technology over pedagogical continuity.	Shallow, rootless innovation; lack of cohesion.	Desire for modern appeal and institutional relevance.
The Passive Integrators		Unstructured and unmethodical acceptance of both tradition and innovation.	Inconsistent and confused practices; fragmented learning.	Avoid conflict and satisfy the mixed expectations of stakeholders.
The Smart Integrators		Deliberately, methodologically, and purposefully align tradition and innovation.	Coherent, adaptive innovation; cohesive educational vision.	Valuing both tradition and innovation; guided by learner needs and specific context.

is characterized by a reluctant and unstructured acceptance of both traditional and innovative practices, lacking a methodological framework for their integration. These educators do not see tradition and innovation as a conscious choice but rather as an unavoidable reality to be managed without a clear pedagogical philosophy. This results in inconsistent and often confused practices, where new technologies or methods are adopted without being thoughtfully woven into the existing curriculum. The primary justification for this passive approach is often a desire to avoid conflict and to satisfy the mixed expectations of various stakeholders, such as senior leadership, students, and institutional committees. While lacking structural depth, this approach provides a necessary pragmatic buffer that allows an institution to remain functional and inclusive of diverse viewpoints during periods of high-pressure systemic change. However, while this strategy may create a superficial appearance of progress and harmony, it ultimately lacks a cohesive educational vision, leading to a fragmented and incoherent learning experience for students.

As an example, my personal reflections from 2019 capture this 'tech-lust': *'We are using VR today simply because the funding arrived, though the lesson plan remains a 1990s lecture.'* This 'accidental integration' was a dominant theme in my observations of faculty development workshops, where innovation was often *'bolted on, not built in.*

Another clear example of this approach emerged from a faculty member's struggle to implement new assessment methods. The university mandated a new digital portfolio system for student submissions, but the department's long-standing oral exam tradition remained in place, deeply valued by the senior faculty. The educator, seeking to avoid conflict and satisfy the mixed expectations of both administration and senior colleagues, simply added the digital portfolio to the existing assessment workload without integrating it into the curriculum. This unmethodical adoption resulted in students having to manage two parallel, disconnected assessment systems. The new digital tool was not used to its full potential, and the traditional oral exams were not updated to reflect the students' digital work. This created a fragmented and confused learning experience for the students, who viewed the new tool as a compliance burden rather than a purposeful part of their education.

o The Smart Integrators

The final and most advanced approach, the Smart Integrators, is defined by a deliberate and philosophical effort to purposefully and methodologically align tradition and innovation. Unlike the passive approach, this strategy is not accidental but is a conscious and strategic choice. The outcome of this approach is a coherent and adaptive innovation, where new methods and technologies are not adopted for their own sake but are thoughtfully woven into the established pedagogical fabric. The ultimate justification for this approach is that it is guided by learners' needs and a specific context. Educators operating from this perspective engage in a continuous process of critical reflection, asking not just "what is new?" but "what is needed?" This allows them to leverage the proven strengths of traditional methods while selectively adopting innovations that genuinely enhance learning, resulting in a robust, relevant, and internally consistent educational experience.

This approach is best demonstrated by a curriculum redesign of the MSc Clinical Education dissertation module. The established practice of a lengthy, single-authored thesis, a time-honoured tradition, was a source of anxiety and isolation. Rather than discarding the tradition entirely, a methodical process was initiated. Students' and other academics' viewpoints were sought, and the pitfalls of previous cohorts were studied. Simultaneously, the relevant literature around dissertations was reviewed, and theoretical frameworks were used to make a list of revised learning outcomes and students' desired competencies as the new targets for the module. This allowed for a critical mapping of the current traditional approach with those new learning outcomes, highlighting where key gaps existed. For each of these unmet outcomes, a procedural or tool-based innovation was designed and purposefully integrated with the existing traditional approaches. This new system was checked with different stakeholders, and after a year of implementation, feedback was obtained, progress was monitored, and necessary changes were implemented to ensure the new structure was continually serving its purpose. This purposeful blend of the proven academic rigor with targeted, process-based innovation resulted in a more manageable and coherent educational experience that met a specific learner's need.

Beyond the MSc dissertation case, this proactive approach appeared in curriculum committee emails (2021) where I argued for *'leveraging the anatomy lab's tactile legacy to ground our new digital 3D models.'* Notes from pastoral care sessions also highlighted this, as I recorded the need to *'mentor students in using AI as a partner to clinical reasoning, not a replacement for it.'*

Table 3. The FUSION Model for Smart Integration

Stage	Purpose	Key Actions
Frame the Goals	To establish a clear pedagogical vision and purpose for change.	Articulate specific learning outcomes and desired competencies.
Unpack Traditional Approaches	To critically evaluate the rationale, strengths, and limitations of existing practices.	Reflect on the value of time-tested methods and their core skills.
Scan for Gaps	To diagnose where current approaches fall short of meeting pedagogical goals.	Systematically identify deficiencies in current programs.
Invent Innovative Options	To explore creative solutions that can fill the identified gaps.	Craft novel methods, technologies, and pedagogical strategies.
Orchestrate Integration	To strategically blend new innovations with traditional strengths.	Plan how new and old approaches will coexist to create synergy.
Navigate Implementation	To ensure the sustainable execution and adaptation of the new model.	Plan for faculty training, manage expectations, and conduct ongoing evaluation.

A Proposed Framework: The FUSION Model for Smart Integration

This section presents the second key finding of the study: a conceptual framework for guiding the purposeful integration of tradition and innovation in medical education. Derived from the experiences and insights of the "*Smart Integrators*" identified in the data, the FUSION Model offers a systematic, six-stage process designed to move educators beyond reactive or dichotomous thinking toward a coherent, learner-centric approach. Each stage of the model is sequential, building upon the last to ensure that integration is deliberate, strategic, and ultimately effective (Table 3).

• *Overview of the FUSION Model*

The *FUSION Model* is a guiding framework that provides a structured pathway for the smart integration of traditional and innovative practices. It provides a six-stage cognitive architecture to navigate the pedagogical, systemic, and technological tensions identified in the literature (See Table 1). The model is named an acronym for its six stages: Frame the Goals, Unpack Traditional Approaches, Scan for Gaps, Invent Innovative Options, Orchestrate Integration, and Navigate Implementation. This process represents a clear departure from the unplanned methods of *Passive Integrators* and the rigid stances of *Oppositionists*. By following these steps, educators can ensure that every decision to change or innovate is grounded in a deep understanding of pedagogical needs and executed with a thoughtful, holistic strategy. For example, in redesigning the MSc dissertation module, the model was followed as a deliberate, step-by-step process, ensuring that the final "blended" approach was not a matter of chance, but a product of strategic design.

• *The Six Stages of the FUSION Model*

1. Frame the Goals

The process begins by establishing a clear pedagogical vision. Before any decisions about tradition or innovation are made, educators must first articulate the specific learning objectives, desired outcomes, and competencies for the learners. This stage is crucial because it provides the foundational purpose for any subsequent change. Without a clearly defined vision, innovative initiatives risk becoming solutions in search of a problem, while traditional methods can be mindlessly perpetuated. Framing the goals ensures that all subsequent steps are aligned with a meaningful educational purpose. For example, in the case of the MSc dissertation module, this involved using learning theories and stakeholder feedback to create a revised set of learning outcomes focused on process-oriented skills like critical appraisal and scholarly writing, rather than just the final product (dissertation).

2. Unpack Traditional Approaches

Once the goals are framed, the next step is to critically examine existing, or traditional, approaches. This stage requires a deep and reflective analysis of what is currently being done, focusing not just on the methods themselves but on their underlying rationale, strengths, and limitations. It involves asking questions like, "What value does this traditional approach truly offer?" and "What core skills does it cultivate that we might lose if we replace it?" Unpacking tradition ensures that its time-tested wisdom is not discarded carelessly and that educators have a clear understanding of the established foundation upon which to build. For example, in the dissertation redesign, this meant analysing the traditional thesis's core strength: its ability to foster independent, rigorous research.

3. Scan for Gaps

With a clear understanding of both the pedagogical goals and the strengths of traditional methods, educators can now identify where the current approaches fall short. This stage involves

a systematic scanning for the gaps in a program's ability to meet its stated goals. This could include a lack of adaptability to new technologies, a failure to develop modern skills like data literacy, or an inability to effectively engage a new generation of learners. Scanning for gaps is a critical diagnostic step that provides specific targets for purposeful innovation, ensuring that change is needs-based rather than trend-driven. For example, this stage revealed that while the traditional dissertation fostered independence, it often failed to develop collaborative skills and caused significant student anxiety, which was a clear gap in the desired learning outcomes.

4. Invent Innovative Options

Only after the gaps have been identified should the development of innovative solutions begin. This stage involves both divergent and convergent perspectives. It starts with a divergent perspective - a creative exploration of a broad range of novel methods, technologies, and pedagogical approaches that could potentially fill the identified gaps. This could involve considering new digital tools, alternative teaching and assessment strategies, or different learning formats. The key here is to invent as many options as possible without initial assessment and commitment. The process then shifts to a convergent perspective, where these solutions are further explored and evaluated to select the most fit-for-purpose options that align with the pedagogical vision.

For example, in redesigning the dissertation module, a range of procedural innovations was explored, including a scaffolded portfolio approach, self-assessment tools, interactive templates, a group-based research project, and a final paper accompanied by a blog series. These options were then critically assessed against the module's newly defined learning outcomes to choose the best solutions.

5. Orchestrate Integration

This is the pivotal stage where the actual blending of tradition and innovation occurs. It involves a strategic orchestration of the most promising innovative options with the enduring strengths of traditional approaches. The orchestration can be conceptualised as a piggy-back approach, where the tradition works as the core and innovation is purposefully added to its back. This model reassures that time-tested clinical wisdom and pedagogical principles are kept as the core of the new orchestrated approach. The goal is to create a seamless synergy, where a new tool, for example, is not simply added to the curriculum but is integrated so that it enhances an existing method. This orchestration requires a clear plan for how the new and the old will coexist and interact, ensuring that the outcome is more than the sum of its parts.

In the case of the MSc dissertation redesign, the team decided to preserve the traditional final paper while integrating the innovative portfolio and self-assessment approaches to scaffold the process, thereby blending academic rigor with a more supportive and manageable workflow.

6. Navigate Implementation

The final stage of the FUSION Model focuses on the practical and often challenging task of implementation. It acknowledges that even the best-designed integration can fail without a clear strategy for execution. This stage involves planning for faculty training, managing stakeholder expectations, and anticipating potential resistance. Implementing a change management model, such as Kotter's 8-Step Change Model, is essential here as it reassures stakeholders by framing the integration as a purposeful and successful process of change. For example, a change model helps to create a sense of urgency, forming a guiding coalition, and communicating the vision, all of which are critical for overcoming inertia. This stage also includes a plan for ongoing evaluation and a commitment to continuous feedback, allowing educators to navigate the inevitable challenges of change and adapt the model as needed. This final step ensures that the vision for smart integration becomes a sustainable reality.

In the case of the new dissertation module, it was implemented with clear guidelines for the faculty and students. After the first year, feedback was actively sought and used to make minor adjustments to the portfolio structure, ensuring a continuous and adaptive improvement.

The FUSION Model, therefore, serves as a practical and evidence-based response to the central challenge of this study. It provides a structured pathway to guide educators from an unstructured, dichotomous approach toward a purposeful and coherent strategy for integrating tradition and innovation. The following discussion will interpret these findings in light of the existing literature, explore their broader implications, and outline a clear direction for future research.

Discussion

While general curriculum models - e.g., Kern's six-step cycle for curriculum development or the ADDIE (Analysis, Design, Development,

Implementation, Evaluation) framework - are often agnostic to the source of educational content, FUSION is built upon the specific tension between tradition and innovation found in medical education. By mandating a 'Scan for Gaps' only *after* a critical valuation of tradition, the model prevents the 'shallow innovation' identified in the findings and ensures that change is an act of design rather than a compromise of core professional values.

This study' findings reveal a spectrum of approaches to navigating the tension between tradition and innovation in medical education, culminating in the proposal of the FUSION Model as a structured framework for smart integration. These approaches reflect a deeper landscape of professional identity and institutional culture, where 'Oppositionists' resistance often stems from structural pressures or a perceived duty to protect time-tested clinical values, while 'Passive Integration' may reflect burnout or institutional compliance rather than the development of true adaptive expertise. By understanding these categories as rational responses to systemic tensions rather than simple ethical failures, the FUSION model is positioned to move educators toward 'Smart Integration' by transitioning from reactive stances to proactive, design-oriented leadership.

▪ *Feature 1: The goal-driven nature of the FUSION model*

A key feature distinguishing the FUSION model is its foundational, goal-driven approach to integration. This framework requires educators to first establish a clear pedagogical vision before considering any changes. This aligns directly with the principle of Constructive Alignment, which posits that a curriculum is most effective when learning objectives, teaching activities, and assessment tasks are all purposefully linked (23). This has at least three critical applications in practice. First, it ensures that pedagogy always remains the priority. By framing integration around specific educational objectives and desired competencies, the model prevents innovation from becoming an end in itself (24). Instead, new tools and traditional methods are viewed as mere instruments to achieve a pedagogical purpose (25). Second, this clarity of purpose can trigger intrinsic motivation among educators. When they can see the tangible outcomes and rationale behind an integration effort from the outset, they are more likely to be invested and engaged in the process. Finally, starting with clear goals allows educators to effectively monitor and oversee the integration process. By having a defined benchmark, they can continuously evaluate whether the blended approach is moving toward the intended outcomes, making it possible to adjust the strategy in real time and ensure the initiative remains on a purposeful path. For instance, in designing clinical blocks, FUSION ensures that traditional bedside clerkships are not replaced by digital modules but rather augmented by them to meet specific diagnostic competencies.

▪ *Feature 2: Prioritising tradition first*

By first requiring a critical unpacking of existing, or traditional, approaches, the model helps educators to accurately scan for opportunities to build on existing strengths. This aligns with the principles of Appreciative Inquiry, which posits that meaningful change begins by identifying and valuing the core strengths of current practices (26). The framework then shifts, using a lens of Design Thinking to deeply understand the needs of learners and stakeholders, thereby pinpointing specific opportunities for improvement (27). This dual approach ensures that new initiatives are not adopted blindly but are instead designed to solve a specific need while leveraging the proven strengths of current methods. This grounded approach can also trigger greater motivation to move forward with innovation, as educators can see a clear rationale for change. During changing OSCE assessments, this approach allows educators to preserve the 'gold standard' of face-to-face communication while integrating simulators to assess rare or high-risk clinical scenarios that traditional methods cannot safely capture.

Furthermore, by starting with tradition, the model encourages educators to piggyback on existing practices rather than inventing from scratch. This strategic integration leverages the proven strengths of current methods while introducing new elements where they are most needed. Ultimately, this process helps educators to value tradition, recognising its strengths and ensuring it is not compromised for the sake of non-purposeful or trendy innovation. This balanced perspective leads to a more robust and sustainable educational framework.

To provide a robust meta-layer for this structural logic, the six stages of FUSION can be synthesised into the three macro-phases of Design Thinking: Inspiration, Ideation, and Implementation. As could be seen in Figure 1, the initial steps of Framing Goals and Unpacking Tradition constitute the "Inspiration" phase; here, the "Smart Integrator" grounds innovation in a deep, appreciative understanding of the existing clinical culture and its core values.

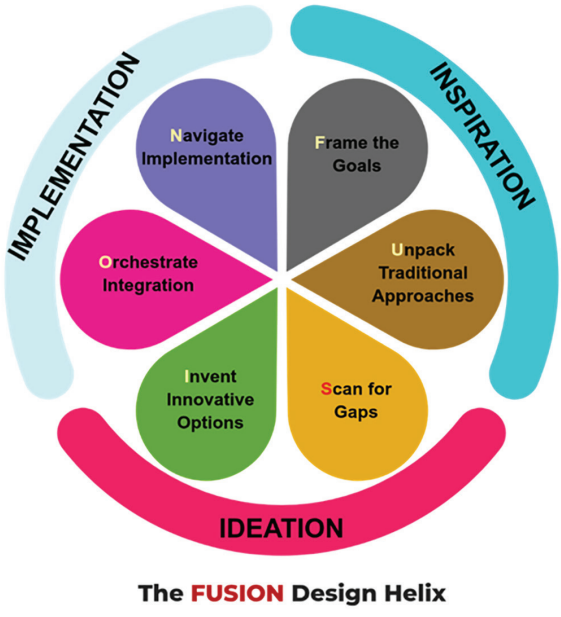

Figure 1. The FUSION Design Helix: Smart Integration of Tradition and Innovation in Medical Education

This transitions into the "Ideation" phase, where Scanning for Gaps and Inventing Options transform diagnostic insights into creative pedagogical solutions that are purpose-built for modern demands. Finally, the stages of Orchestrating and Nurturing represent the "Implementation" phase, shifting the focus from conceptual design to systemic embedding and long-term sustainability. By mapping the FUSION steps onto these well-established macro-phases, the model moves beyond a linear checklist to become a circular, iterative cognitive engine for resolving complex institutional tensions.

Following the discussion of the FUSION Model's key features, it is important to address the essential pre-requirements for its successful implementation. For a framework of this nature to be effective, certain foundational conditions must be in place within the medical education environment.

▪ *Pre-requirement 1: Stakeholder engagement*

The first pre-requirement for implementing the FUSION Model is the full engagement of all relevant stakeholders. This emphasis on early buy-in is a central tenet of Diffusion of Innovations Theory, which posits that the success of a new idea depends on how it is communicated and spreads through a social system. By engaging diverse stakeholders from the outset, the "innovators" and "early adopters" who can champion the change can be effectively identified, thereby accelerating the diffusion process and building crucial momentum (28).

This is not merely a procedural step but a fundamental necessity for several reasons. Firstly, a comprehensive integration of tradition and innovation requires input from diverse perspectives, including faculty, students, administrators, and clinical staff. Each group holds unique insights into a programme's strengths and weaknesses, making their engagement essential for accurately framing goals, unpacking traditional approaches, and scanning for gaps. Secondly, and perhaps more importantly, active involvement from the outset fosters a sense of ownership and legitimacy. When stakeholders feel they have contributed to the design of the process, they are far more likely to support and champion the eventual changes, significantly mitigating the resistance often associated with academic reform.

▪ *Pre-requirement 2: Preferred future perspective*

A second pre-requirement is the adoption of a preferred future perspective by medical educators and other stakeholders. This mindset is a core principle of Strategic Foresight, a discipline that moves beyond prediction to actively explore and shape desired futures. In contrast to a passive or predictive view - which assumes that change is an uncontrollable force to be adapted to - this perspective asserts that the future can be actively built and designed (29, 30). This mindset is crucial for implementing the FUSION Model because the model is inherently a proactive, constructive process. The stages of "*Frame the Goals*" and "*Invent Innovative Options*" require an imaginative and aspirational outlook, one that believes a better educational experience is not just a possibility but an outcome that can be strategically engineered. Without this belief, the model's systematic steps risk becoming empty exercises, incapable of challenging the status quo and inspiring meaningful change.

▪ *Pre-requirement 3: Capacity building*

Finally, a preferred future perspective cannot be realised without the necessary skills and competencies to execute it, making capacity building a critical pre-requirement. This need is supported by the Resource-Based View (RBV), which posits that an organisation's sustained success is driven by its unique and valuable internal resources and capabilities (31). In the context of medical education, the skills and competencies of the faculty are a vital strategic resource. Therefore, capacity-building programmes are an essential investment, designed to cultivate and enhance these resources (32-40). By equipping educators with the tools of the FUSION model, an institution strengthens its core capabilities.

This allows the institution to leverage its internal resources to meet the new challenges posed by the FUSION Model, which provides an opportunity to build a competitive advantage in the academic landscape. For example, design thinking is necessary for problem-solving and inventing innovative options, while critical thinking is vital for the careful evaluation of traditional approaches and the strategic scanning for gaps. Similarly, creativity and openness are required to explore novel solutions, while collaborative skills are needed to orchestrate integration and navigate implementation. Without these targeted capacity-building efforts, even the most well-intentioned educators may lack the tools to move from an aspirational mindset to effective, purposeful action.

Conclusion

This study synthesizes a decade of autoethnographic evidence to provide a strategic roadmap for navigating the tension between tradition and innovation in health professions education. It contributes a novel typology of educator stances and the FUSION Model, a framework that ensures educational change is an act of purposeful design rather than reactive compromise. By shifting the discourse from a binary conflict to a spectrum of "Smart Integration," this work offers a scalable cognitive tool for building resilient, future-ready curricula.

Regarding RQ1, the typology of approaches teaches us that the primary barrier to effective change is not innovation itself, but a lack of methodological anchoring, often manifesting as either protective resistance or non-purposeful adoption. For RQ2, the FUSION Model is presented as a theory-informed, analytical-conceptual framework designed to guide practice-oriented curriculum development.

Effective integration, as revealed by this study, necessitates two critical shifts. Firstly, fostering a medical education culture that is more 'reflective' than merely 'descriptive' is paramount. This aligns with Schön's concept of Reflective Practice, emphasising that educators must critically analyse their experiences to uncover deeper rationales. Secondly, pedagogists must lead this transformative process. This is supported by Shulman's theory of Pedagogical Content Knowledge (PCK), ensuring integration is driven by educational principles rather than technological convenience.

This study offers several significant implications. Theoretically, it introduces a "spectrum perspective," moving beyond the traditional binary. Practically, the FUSION Model provides a roadmap for planning initiatives, encouraging a proactive, needs-driven approach to innovation and an appreciative stance towards tradition. This highlights the importance of capacity building and a "preferred future" mindset for faculty development.

Despite its contributions, this study is subject to limitations inherent in its autoethnographic design. As a qualitative methodology rooted in the primary author's personal experience, findings may not be directly generalisable. Furthermore, as an analytical-conceptual framework synthesised retrospectively, the FUSION model represents a 'theory-building' phase that requires prospective testing.

Future research should focus on empirical studies to validate the FUSION Model across diverse cultural contexts. Research could explore training programmes for cultivating "smart integrators" and conduct comparative studies on institutions adopting a "spectrum perspective" versus a traditional dichotomy. Finally, further qualitative studies from diverse insider perspectives would enrich the understanding of this complex dynamic.

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Authors' Contributions

M.RZ Conceptualisation, Data gathering, Data analysis, Writing the draft of the manuscript, Revising the manuscript. A.P Conceptualisation, Data analysis, Revising the manuscript.

Conflict of interest

The authors declare no conflicts of interest related to this work.

Declaration of AI Use

The authors declare that no AI tools were used in the preparation of this manuscript.

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