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Developing a Conceptual Academic Governance Framework for Faculty Evaluation in Medical Universities Based on a Critical Review

Shahram Yazdani[1], Ramin Homayouni-Zand[1]*, Masomeh Kalantarion[1]

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Abstract

Background: Effective faculty evaluation is critical for quality assurance and professional development in medical universities; however, prevalent systems often lack integration, transparency, and contextual sensitivity—particularly in settings such as Iran. This study addresses this research gap by proposing a comprehensive, locally adapted framework aimed at enhancing evaluation practices and strengthening the connections between assessment, academic governance, and faculty growth.

Methods: A critical review methodology was employed, following the four-stage framework established by Carnwell and Daly (2001). A systematic literature search was conducted across international databases (PubMed, Scopus, Web of Science, ERIC, Google Scholar) and national databases (SID, Magiran, IranMedex) for studies published between 2000 and 2025. Search terms covered faculty evaluation, performance, appraisal, assessment, and teaching effectiveness, combined with terms related to medical education, medical schools, academic medicine, and health professions education. Thematic analysis was used for the conceptual synthesis of existing faculty evaluation systems to develop an evidence-based model.

Results: Analysis of eight international and national frameworks—including the AAMC Mission-Based management (MBM) model, Merit Review system, University of Minnesota multi-track system, MCDA, BSC–AHP–TOPSIS hybrid model, Textual Feedback Analysis Model, S-UDLCD data-driven model, and Iran's SHOA system—revealed that no single model was sufficient. Mission-based, merit-oriented, and data-driven systems each offered only partial strengths, with notable limitations in addressing the multidimensional nature of faculty roles, ensuring organizational justice, and linking evaluation to professional development and governance. Findings underscore the necessity for a hybrid, context-specific system that integrates quantitative, qualitative, and multi-source evidence.

Conclusion: A localized, mission-aligned, multi-criteria, and feedback-driven academic governance framework is proposed. This integrated model is organized around four key features: (1) explicit alignment of academic pathways with institutional missions, (2) integration of both quantitative and qualitative performance indicators, (3) multi-source assessment mechanisms that combine electronic data, structured weighting, and textual feedback analysis, and (4) a continuous feedback and development cycle that links evaluation outcomes to annual academic contracts, resource allocation, and promotion decisions. This model provides a foundation for educational policymakers and university administrators to design fair, transparent, and development-oriented evaluation systems. Future studies should focus on pilot implementation, empirical validation of the model in Iranian medical universities, and longitudinal assessment of its impact on faculty performance, satisfaction, and institutional outcomes.

Keywords: Faculty Evaluation System, Medical Universities, Critical Review, Conceptual Framework, Performance Assessment, Academic Governance, Medical Education

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Corresponding author: Dr Ramin Homayouni-Zand, rhomayouni@sbmu.ac.ir

[1] Department of Medical Education, School of Medical Education and Learning Technologies, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Key Messages:

↑What is "already known" in this topic:

Existing faculty evaluation models often lack integration of governance, fairness, and developmental feedback, with no single framework fully addressing the multifaceted needs of medical universities.

→What this article adds:

A conceptual, hybrid, mission-aligned faculty evaluation model that emphasizes academic governance in medical universities by integrating quantitative, qualitative, and multi-source feedback. This theoretical framework addresses model-specific limitations while providing a locally adaptable and equitable foundation for faculty assessment, pending empirical validation.

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Introduction

Faculty members constitute the core of higher education institutions, bearing primary responsibility for teaching, research, and community service. Within this context, Academic Governance—defined as the systematic structures through which institutions ensure accountability, equity, and alignment of performance with their mission—has become increasingly critical, particularly in medical education, where faculty frequently assume dual academic-executive roles, making strategic planning closely dependent on their expertise (1-4). Strengthening faculty capacity enhances teaching effectiveness, research productivity, and clinical service delivery, thereby enabling universities to provide high-quality education and care in increasingly competitive environments (5-7).

Faculty evaluation is widely recognized as a crucial mechanism for quality assurance and professional development, providing essential evidence for promotion and policy decisions while offering constructive feedback for continuous improvement (8-11). However, due to the multidimensional nature of roles—encompassing education, research, clinical care, and administration—evaluation remains inherently complex. Contemporary approaches are shifting from narrow appraisals toward capacity-building aligned with competency-based medical education (12-14). Despite global progress, methods limited to single dimensions (e.g., student ratings) or constrained by fragmented bureaucratic structures often fail to produce credible evidence for strategic planning. This necessitates integrated systems that systematically assess all domains and link outcomes to institutional incentives and development strategies (15-20).

In Iran, faculty activities are monitored by universities and the Ministry of Health; however, evaluations are hindered by fragmented processes, excessive bureaucracy, underutilization of results in promotion decisions, and limited transparency. These factors collectively undermine trust, fairness, and job satisfaction (21-25). To address these deficiencies, the present study conducts a critical review of existing faculty evaluation models. Importantly, rather than merely synthesizing components to propose a single integrated framework, this review systematically critiques the methodological rigor, validity, and contextual applicability of current frameworks, particularly identifying their epistemological strengths and weaknesses in resource-limited settings. By clarifying the essential methodological components required for a comprehensive and context-sensitive system, this review provides evidence-based insights to guide the future design of a tailored evaluation model, ultimately strengthening academic governance in Iranian medical universities.

Methods

Study Design

This study employed a critical review approach to examine faculty evaluation systems in universities of medical sciences and to propose a preliminary conceptual model for designing a comprehensive evaluation system. This approach was selected for its capacity to facilitate critical analysis and synthesis of diverse evidence, advancing beyond mere description toward explanation, interpretation, and the generation of new concepts. The methodological framework for this review is based on the model by Carnwell and Daly (2001), which structures the critical appraisal process into four key stages to ensure rigor and conceptual development: (1) defining the scope and purpose, (2) comprehensive searching, (3) methodological critique, and (4) synthesis and interpretation (26-27).

Research Design and Framework Operationalization

A critical review, in contrast to systematic or narrative reviews, engages in critical analysis and conceptual reconstitution of existing knowledge. According to Carnwell and Daly (2001), this design integrates empirical and theoretical evidence to generate new insights, aligning with the multidimensional nature of faculty evaluation systems that encompass educational, research, clinical, and managerial activities.

In operationalizing this framework:

- *Stage 1 (Scope and Purpose):* The scope was defined as faculty evaluation systems in medical universities, with the explicit purpose of identifying methodological strengths, weaknesses, and contextual gaps to inform a customized model for Iran.
- *Stage 2 (Comprehensive Searching):* Systematic searches were conducted across multiple databases, as detailed below.
- *Stage 3 (Methodological Critique):* Each selected study was critically appraised for its validity, rigor, theoretical contribution, and applicability to the Iranian context.
- *Stage 4 (Synthesis and Interpretation):* The critiqued evidence was synthesized to identify overarching patterns and philosophical orientations, culminating in the proposed Academic Governance Model (Figure 1).

Search Strategy

The search was performed from January 1, 2000, to December 31, 2025, to cover recent developments in medical education policies.

International peer-reviewed literature was searched in PubMed, Scopus, Web of Science, and ERIC. Google Scholar was additionally searched to identify relevant scholarly sources. Searches were conducted using relevant terms and database-specific search options, and all retrieved records were screened against the predefined eligibility criteria. To ensure the capture of local contextual evidence, Iranian databases, including SID, Magiran, and IranMedex, were also searched. This dual approach (international and national) was necessary because the ultimate goal of the study was to propose a model specifically applicable to Iranian medical universities, which required

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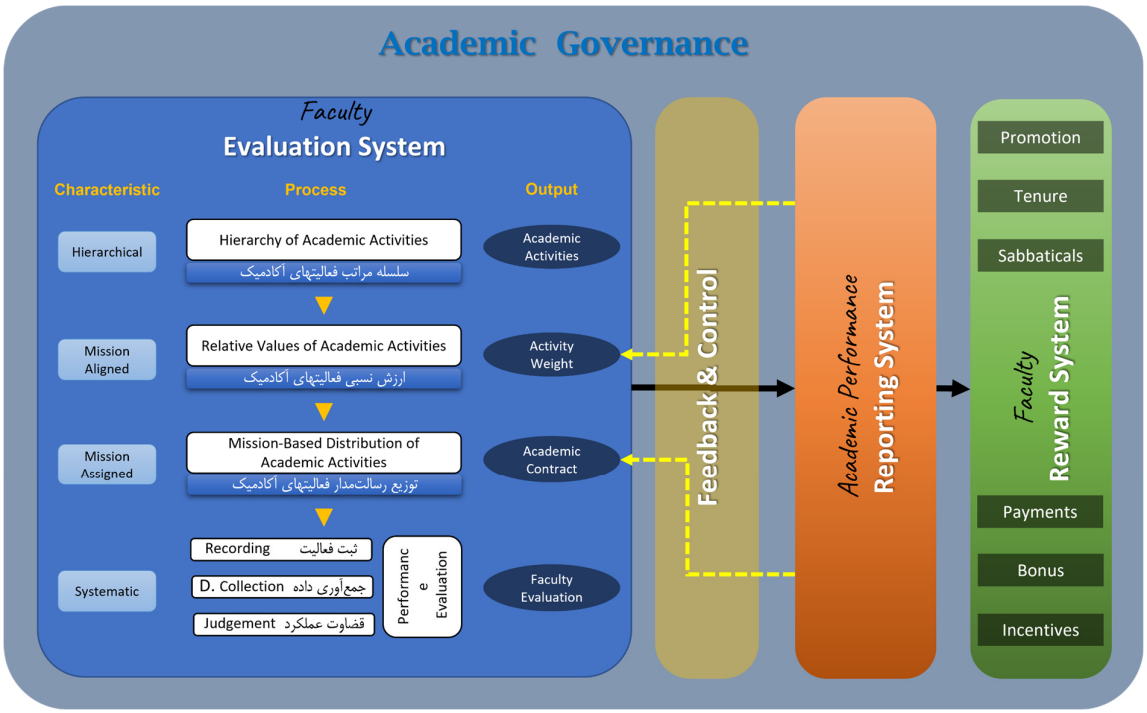


Figure 1. Academic Governance Model for Faculty Evaluation

the identification of both global best practices and local implementation gaps.

The following Boolean syntax was applied in PubMed: ("faculty evaluation"[Title/Abstract] OR "faculty performance"[Title/Abstract] OR "faculty appraisal"[Title/Abstract] OR "faculty assessment"[Title/Abstract] OR "academic staff performance"[Title/Abstract] OR "teaching performance"[Title/Abstract] OR "teaching effectiveness"[Title/Abstract]) AND ("Education, Medical"[Mesh] OR "Schools, Medical"[Mesh] OR "medical education"[Title/Abstract] OR "medical school*"[Title/Abstract] OR "academic medicine"[Title/Abstract] OR "health professions education"[Title/Abstract]).

The search strategy combined two concept groups using the Boolean operator AND. The first group addressed faculty evaluation and performance and included “faculty evaluation,” “faculty performance,” “faculty appraisal,” “faculty assessment,” “academic staff performance,” “teaching performance,” and “teaching effectiveness.” The second group addressed the medical education context and included the MeSH terms “Education, Medical” and “Schools, Medical,” together with the title/abstract terms “medical education,” “medical school*,” “academic medicine,” and “health professions education.” Terms within each group were combined using OR. Grey literature, including official reports and bylaws from the Iranian Ministry of Health and Medical Education, was manually reviewed. This was specifically included to understand the national policy frameworks and executive regulations that shape faculty evaluation in Iran, as such contextual documents are rarely published in peer-reviewed journals.

Study Selection Process: The selection process was conducted in multiple stages. Initially, the titles and abstracts of all retrieved records were screened based on predefined inclusion criteria. Subsequently, the full texts of potentially eligible articles were reviewed. Reference lists of selected articles were also hand-searched. The detailed numerical results of the screening process, including the number of records identified, screened, excluded, and ultimately included, are reported in the Results section.

Inclusion and Exclusion Criteria

Studies were included if they were published in Persian or English between January 1, 2000, and December 31, 2025, and presented original research (quantitative, qualitative, or mixed-methods), systematic or narrative reviews, conceptual papers, or official policy documents that included a clear evaluation framework. Eligible sources addressed faculty performance evaluation systems, professional development, or academic governance in medical or health sciences universities, or in other higher education settings with demonstrated transferability to medical education. Selection prioritized multidimensional frameworks covering educational, research, clinical, or managerial activities. Complementary evaluation approaches were also eligible when they offered a distinct methodological or conceptual contribution to the proposed framework, such as the analysis of narrative feedback. Conversely, studies were excluded if they were non-academic sources, such as editorials, news reports, or opinion letters lacking a theoretical model; if they focused

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exclusively on student ratings of teaching without organizational or managerial implications or a distinct methodological contribution to the proposed framework; if they lacked sufficient methodological detail to assess their conceptual contribution; or if they originated from non-medical fields without demonstrated transferability to medical education contexts.

Data Extraction

Data from the final selected studies were independently extracted by two researchers to ensure accuracy. Discrepancies were resolved through discussions with a third reviewer. Data were recorded in a pre-designed structured table that encompassed: (1) study context (country, institution type); (2) evaluation domains (education, research, clinical service, leadership); (3) evaluation methods and tools (e.g., peer review, 360-degree feedback, self-assessment, quantitative metrics); (4) reported challenges and success factors; and (5) linkage to professional development and governance.

Data Analysis and Synthesis

Data analysis employed an iterative thematic synthesis approach at a conceptual level to extract abstract themes from the selected models. This conceptual coding facilitated an interpretive synthesis that transcended mere description.

The analysis comprised three overlapping stages: (1) descriptive summarization, which involved mapping key structural components (domains, methods, indicators) of each model; (2) interpretive analysis, which examined theoretical assumptions, epistemological foundations, and implicit values; and (3) conceptual integration, which synthesized critiqued evidence into overarching categories—including governance-oriented, capacity-building, and accountability-driven systems—that formed the theoretical foundation for the proposed model. This iterative process transformed fragmented evidence into a coherent framework that addressed both global best practices and contextual gaps in Iranian medical universities.

Academic governance was not directly derived from the reviewed models. Instead, it was utilized as an interpretive lens—guided by recurring governance functions identified in the literature—to organize the synthesized evidence into a coherent framework. This approach reflects the authors' scholarly synthesis, which is inherent to critical review methodology, rather than a purely inductive derivation.

Ensuring Rigor and Trustworthiness

To enhance the rigor of the review, the following measures were undertaken: independent extraction by two researchers as described above; source triangulation through the combination of international peer-reviewed articles and national policy documents; peer debriefing, wherein preliminary findings and the proposed model were discussed with two experts in medical education administration; and an audit trail that maintained detailed records of all search and decision-making steps to ensure transparency and reproducibility.

Results

The systematic search across international and national databases yielded 1,245 records. After removing duplicates (n=312), 933 articles were screened based on titles and abstracts. Of these, 847 were excluded due to their irrelevance to faculty evaluation systems in medical education. The full texts of the remaining 86 articles were assessed for eligibility, resulting in the exclusion of 79 articles for reasons including a sole focus on student evaluations of teaching without organizational context, insufficient methodological rigor, conceptual duplication, or lack of applicability to medical education. Additionally, one relevant local policy document was identified through hand-searching reference lists and grey literature from the Iranian Ministry of Health. Ultimately, eight models met the inclusion criteria and were subjected to critical analysis.

The first model examined was the AAMC Mission-Based Management (MBM) model, a mission-driven faculty evaluation and resource allocation framework that systematically measures faculty contributions across education, research, clinical care, and service in alignment with institutional missions. By translating diverse faculty activities into comparable units of effort and value, the model supports evidence-based decision-making for budgeting, planning, accountability, and academic governance (28, 29). The literature indicates that this model enhances the transparency and measurability of less visible academic activities—particularly teaching—thereby enabling institutions to develop mission-aligned evaluation systems through adjustable weighting (30, 31). However, excessive reliance on quantitative metrics may undermine qualitative judgment and overlook non-measurable academic contributions; furthermore, imprecise adjustment of weights can perpetuate structural biases (32). Overall, this model offers an advanced data-driven framework but necessitates integration with qualitative assessment tools and ongoing monitoring of data accuracy.

The second model, the Merit Review system, is a comprehensive evidence-based annual faculty evaluation model that employs structured performance portfolios and criterion-referenced judgments across multiple academic domains to inform feedback, compensation, promotion, and governance-related decisions (33). Prior studies indicate that this system increases transparency (34), more effectively links rewards to performance (35), and is associated with improved research productivity (36). Nonetheless, its reliance on student evaluations and subjective judgment raises concerns regarding gender and racial bias (37, 38). Several studies have also reported that this system may promote quantity-driven behaviors, such as an overemphasis on the number of publications (39). A high administrative burden has been identified as an additional limitation. While suitable for large higher education systems, its effectiveness depends on enhancing evaluation instruments and training assessors to mitigate bias (40).

The third model reviewed was the University of Minnesota's multi-track system, which includes Tenure, Academic, and Clinician pathways (41). Annual faculty re-

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views use either the Summary of Annual Faculty Evaluation (SAFE) form or the Works faculty activity reporting system, depending on departmental procedures. For promotion on the Clinician Track, a Mini-360 evaluation gathers feedback on clinical competencies from supervisors or direct reports, peers, and trainees (41). These arrangements illustrate how review procedures can be differentiated according to faculty roles and career pathways (42, 43). However, challenges include implementation complexity (42), a heavy data-entry workload (42), and concerns regarding the validity of student ratings—particularly Student Rating of Teaching (SRT) (44). Despite its comprehensive design, successful implementation depends on robust digital infrastructure and continuous training for evaluators (43).

The fourth model, MCDA, is based on multi-attribute value theory and the MACBETH method. It employs a structured, multi-criteria framework to integrate diverse performance indicators, facilitating transparent and systematic faculty evaluation to inform governance and decision-making (45). The primary advantages of this approach include transparent weighting procedures, the capacity to conduct sensitivity analyses, and the integration of quantitative indicators with expert qualitative judgment (45, 46). However, the model is highly sensitive to the quality of input data, and achieving consensus among evaluators regarding weight allocation can be challenging. In academic environments with well-defined governance structures, MCDA can be highly effective; however, in less cohesive settings, it necessitates strong facilitation and training (45, 46).

The fifth model, the hybrid BSC–AHP–TOPSIS framework, was developed based on Moradi (2022) and extracted from reference (47). This hybrid model integrates the Balanced Scorecard, Analytic Hierarchy Process, and TOPSIS to provide a comprehensive multi-criteria performance evaluation system. It combines strategic performance dimensions with multi-criteria weighting and ranking methods to facilitate systematic and governance-oriented faculty evaluation (47). Findings indicated that AHP-based weighting remains stable in sensitivity analyses, with the "learning and growth" perspective receiving the highest weight from students (47). Strengths include strategic alignment and the integration of quantitative and qualitative indicators (48-51). Despite its integrative design, the BSC–AHP–TOPSIS model is limited by reliance on small student samples, which increases response bias and restricts generalizability in the absence of multi-source triangulation (51, 52). Additionally, instability in AHP weighting, the compensatory logic of TOPSIS, and the cognitive burden associated with extensive indicator sets raise concerns regarding validity, fairness, and strategic gaming (48-50, 53-57).

The sixth model, the Textual Feedback Analysis Model, is based on natural language processing techniques and is described in Sona Singh's report. It interprets narrative evaluation data to complement quantitative measures (58). Its primary strength lies in analyzing authentic narrative feedback from students—an area where structured questionnaires fall short (58). By combining narrative student feedback with natural language processing and machine learning techniques, this approach can support the systematic analysis of qualitative feedback as a complement to quantitative faculty evaluation measures (59). Nonetheless, cultural variation in language use, the need for large pre-processed datasets, and the risk of algorithmic bias represent significant limitations. This approach functions primarily as a complementary analytical tool rather than a stand-alone multidimensional evaluation system (59–61). It was included because its analysis of narrative student feedback offered a distinct methodological contribution to the qualitative evidence component of the proposed framework.

The seventh model, S-UDLCD, is a recently developed data-driven model introduced in 2023 and reviewed in the literature. It integrates learning analytics, multi-tier support systems (RTI/MTSS), and Universal Design for Learning (UDL), shifting evaluation from retrospective assessment to predictive, intervention-focused monitoring (62). This model transforms faculty and learning evaluation from retrospective judgment to a data-driven, proactive, and intervention-oriented approach by incorporating real-time learning analytics, continuous feedback, and multi-tiered support systems. Its alignment with accreditation requirements and emphasis on structured professional development pathways enhance educational quality, institutional accountability, and faculty growth (63-68). Despite its strengths, the S-UDLCD™ model is constrained by risks of algorithmic bias, datafication of learning, ethical and privacy concerns, limited external validity, and high infrastructural demands, which may undermine faculty autonomy and restrict effective implementation in resource-limited settings (64, 65, 69-74).

The eighth model, the SHOA system, is an electronic faculty evaluation and annual promotion platform implemented at Tehran University of Medical Sciences. It is designed to standardize, document, and quantify faculty activities across educational, research, managerial, and cultural domains. Operating as the official institutional reference for faculty appraisal, the system relies on structured self-reporting, managerial verification, and regulation-based scoring to inform promotion, resource allocation, and incentive decisions (75). The SHOA system demonstrates strengths in transparency, standardization, and data integration within faculty evaluation in Iranian medical universities; however, its heavy reliance on self-reporting, administrative burden, and limited flexibility constrain its effectiveness. These limitations have been consistently documented in empirical studies of faculty evaluation systems in Iran (25). A comparison of the models is shown in Table 1.

Overall, the critical analysis revealed several overarching patterns and trade-offs across the eight models. A recurring tension emerged between standardization and flexibility: structured quantitative models (e.g., SHOA, AAMC MBM) facilitate comparison and resource allocation but may overlook nuanced academic contributions, while qualitative models (e.g., Merit Review, Textual Feedback Analysis) provide richer insights yet face challenges related to subjectivity and consistency. The level of

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Table 1. Comparison of Faculty Evaluation Models (8 Models)

Model	Origin	Performance Coverage	Key Features	Methods / Tools / Sources	Advantages	Limitations	Localizability
Mission-Based Faculty Evaluation System (AAMC) (28-29)	United States	Education, research, clinical service, administration	Alignment with institutional mission	Quantitative (RVU), web-based platform	Transparency, mission alignment, and flexibility.	Quantitative dominance: administrative burden	Requires weight localization and regulatory adaptation.
Merit Review System (33)	United States	Education, research, clinical service, administration, professional development	Evidence-based assessment; merit-based reward allocation.	Mixed qualitative–quantitative assessments, annual portfolios, committees, and scoring rubrics.	Transparency, motivation, and a focus on professional development.	Perceptual bias, validity issues in tools, and a heavy administrative load.	Applicable; it supports performance-based contracting.
University of Minnesota Faculty Evaluation System (41)	United States	Education, research, clinical service, administration	Differentiated career tracks (Tenure, Academic, Clinician) with track-specific review procedures.	Annual reviews using SAFE forms or Works; Mini-360 clinical competency evaluations for Clinician Track promotion.	Fairness, role–mission alignment, and process transparency.	Track inconsistencies, administrative burdens, and the limited validity of SRTs.	Track differentiation that is adaptable to the Iranian context.
Multi-Criteria Decision Analysis (MCDA) (45)	Portugal	Education, research, administration	Value-based multi-criteria decision-making with transparent weighting.	Quantitative (multi-criteria indicator weighting)	Transparent weighting integrates qualitative and quantitative data and includes a robust sensitivity analysis.	Requires comprehensive data; computational complexity; consensus is needed.	Useful for developing transparent, localized systems.
BSC–AHP–TOPSIS Hybrid Model (47)	Turkey	Education, research, administration, executive responsibilities	Strategic BSC integrated with AHP weighting and TOPSIS ranking.	Quantitative: strategy mapping, weighting, ranking	Strategic alignment, transparency, and relatively simple implementation.	Data sensitivity, criterion overlap, and human judgment error.	Suitable for pilot testing; complex for nationwide implementation.
Textual Feedback Analysis Model (58)	India	Education (primary focus)	NLP-based analysis of narrative student feedback	Qualitative–quantitative (NLP, sentiment analysis, ML algorithms)	Extracts authentic feedback, providing deeper insight into student perceptions.	Algorithmic bias, cultural expression variance, and the need for large datasets.	Expandable to Persian; it can integrate with Iranian educational platforms.
S-UDLCD Data-Driven Comprehensive Model (62)	United States	Education, administration, professional development, institutional decision-making	Integration of UDL, RTI/MTSS, and learning analytics: predictive and intervention-focused.	Mixed data streams, dashboards, analytics systems	Future-oriented, supports early risk detection, and promotes institutional alignment.	This requires advanced digital infrastructure, as well as considerations related to ethical and privacy concerns.	Promising for long-term digital transformation; requires policy adaptation.
SHOA Evaluation System (75)	Iran	Education, research, clinical, administrative, cultural	Standardized electronic documentation: mission alignment.	Quantitative (electronic reporting, self-declaration, regulatory scoring)	Transparency, standardization, and a unified platform.	Overreliance on self-reporting, administrative burden, and limited qualitative indicators.	Strong national applicability requires the expansion of qualitative components.

technological integration also varies considerably: data-driven frameworks such as S-UDLCD leverage advanced analytics for predictive evaluation but require substantial infrastructural investment and risk algorithmic bias—constraints that are particularly acute in resource-limited settings. Furthermore, models differ in their orientation toward evaluation purpose, with some emphasizing accountability (AAMC MBM, SHOA) and others prioritizing professional development (Merit Review, University of Minnesota)—highlighting the need to balance summative and formative functions. Finally, the philosophical underpinnings reveal three distinct orientations: mission-driven, competency-based, and quantitative–analytical systems—each offering valuable insights, yet none is suf-

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ficient alone. These patterns suggest that a hybrid approach—combining the strengths of multiple models while mitigating their limitations—is most appropriate for the Iranian context, provided it accounts for local cultural, structural, resource, and governance constraints.

Proposed Model: The Context-Informed "Academic Governance Model for Faculty Evaluation"

Utilizing the conceptual analysis framework of Carnwell & Daly and synthesizing the extracted themes, a conceptual model was developed that comprises four core components (Figure 1).

This Figure presents the conceptual framework of the proposed Academic Governance Model. The model comprises four interconnected core components:

1. Mission–Role Framework: This component delineates academic pathways in teaching, research, clinical service, administration, and cultural engagement, aligned with institutional priorities and the actual roles of faculty. It is inspired by the AAMC and the multi-pathway model of the University of Minnesota.

2. Performance Indicators: These indicators integrate quantitative measures (weights, mission-based scores, academic RVUs) with qualitative measures (peer feedback, professional development, and qualitative analysis of academic roles), thereby combining the strengths of Merit Review and hybrid models.

3. Assessment Mechanisms: A multi-source evidence system is proposed, drawing on: – electronic performance data (inspired by AAMC MBM), – structured weighting and decision matrices (MCDA and BSC–AHP–TOPSIS), – analytics-based organizational learning (S-UDLCD), and – textual feedback analysis (Textual Feedback Model). The integration of these data sources enhances reliability and minimizes assessment errors.

4. Feedback & Development Cycle: This innovative component directly links past performance to annual academic contracts, educational and research planning, resource allocation, and promotion opportunities. The cycle ensures continuous organizational learning and aligns future expectations with past outcomes.

Core Features of the Context-informed Academic Governance Model

The proposed model is structured as a hierarchical and systematic framework that clearly defines activity domains, their relative value, and the responsibilities of each managerial level. It is mission-oriented, aligning academic activities with faculty and university priorities. Its multicriteria nature ensures equitable assessment through a transparent combination of quantitative and qualitative indicators. Emphasizing data-driven evaluation, the model integrates multi-source reporting systems to enhance precision and validity. Its developmental orientation shifts the focus from mere judgment to continuous professional growth. Furthermore, the inclusion of a corrective feedback loop promotes organizational learning and strengthens evidence-informed decision-making.

By integrating the strengths of global models and adapting them to the cultural, policy, and structural realities of Iran's medical education system, the model provides a comprehensive, equitable, and scalable framework. It not only captures the multidimensional roles of faculty members but also facilitates data-informed decision-making, equitable promotion processes, and sustained professional development. Ultimately, this context-informed model has the potential to serve as a foundation for transformative reform in faculty evaluation across Iranian medical universities.

Discussion

Findings from this critical review indicate that faculty evaluation systems in medical universities and higher education institutions have undergone substantial transformation over the past two decades, shifting from traditional quantitative and output-driven approaches to multidimensional, evidence-informed, mission-based, and data-driven models. An examination of mission-based models such as AAMC (28, 29), evidence-based approaches like Merit Review (33), analytical models including MCDA (45), hybrid models such as BSC–AHP–TOPSIS (47), data-driven frameworks like S-UDLCD (62), text-analysis models such as Textual Feedback Analysis (58), and Iran's SHOA system (75) demonstrates that, despite their methodological and operational differences, they share three foundational principles: recognizing the multiple roles of faculty members, enhancing performance transparency, and supporting coherent managerial decision-making.

Philosophically, three major orientations can be identified across these models. The first includes mission-driven systems such as AAMC, which utilize quantitative tools like academic RVUs to make less visible academic contributions—particularly teaching—more explicit and aligned with institutional priorities. The second category comprises competency-based systems such as Merit Review, which rely on qualitative evidence, performance portfolios, peer feedback, and professional development. These models provide a nuanced understanding of academic roles but may be influenced by evaluator subjectivity. The third category includes quantitative–analytical models such as MCDA and BSC–AHP–TOPSIS, which apply multi-criteria decision-making techniques to ensure transparent weighting and fair comparison of performance. Although analytically robust, these models necessitate structured data and a strong information-technology infrastructure.

From an operational perspective, a wide spectrum of reporting and judgment mechanisms is evident. The AAMC heavily emphasizes quantitative documentation of activities, whereas Merit Review prioritizes qualitative analysis and developmental feedback. Analytical approaches such as MCDA and BSC–AHP–TOPSIS rely on precise, structured datasets, while data-driven systems such as S-UDLCD and SHOA integrate quantitative indicators, educational data, and staged reporting systems to enhance organizational learning (62,75).

A comparative analysis of justice, transparency, and organizational acceptance indicates that quantitative models, such as MCDA, reduce individual bias but may not fully capture the complexity of academic roles. Qualitative sys-

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tems, such as Merit Review, offer deeper insights into role differences but are susceptible to subjective judgment. Digital models, including S-UDLCD and SHOA, enhance transparency through standardized and accurate data; however, they introduce challenges related to data ethics and algorithmic bias.

Collectively, these findings demonstrate that no single model can fully address the needs of medical universities in Iran. Therefore, the development of a hybrid, contextualized, mission-aligned, and data-driven model is essential.

How the Proposed Academic Governance Model Addresses These Limitations

The proposed model systematically addresses the major limitations identified in the reviewed frameworks through its four interconnected components. The Mission–Role Framework (Component 1) resolves mission misalignment—a weakness in models such as MCDA and Merit Review—by explicitly defining academic pathways (teaching, research, clinical service, administration, and cultural engagement) that are aligned with institutional priorities and actual faculty roles. This approach ensures proportional recognition across all domains and mitigates the oversimplification inherent in purely quantitative models.

The Performance Indicators component (Component 2) addresses the ongoing tension between quantitative objectivity and qualitative richness by integrating both metric-based measures (weights, mission-based scores, academic RVUs) and narrative evidence (peer feedback, professional development portfolios, narrative analysis). This dual approach mitigates evaluator bias—a vulnerability inherent in purely qualitative systems like Merit Review—while avoiding the reductionism associated with purely metric-driven models such as AAMC and MCDA. Furthermore, structured weighting processes enhance fairness and reduce arbitrary judgment.

The Assessment Mechanisms (Component 3) address evaluator subjectivity and the substantial administrative workload—significant limitations in Merit Review, SHOA, and the Minnesota system—through a multi-source evidence system that triangulates electronic performance data, structured decision matrices, analytics-based insights, and textual feedback analysis. By diversifying data sources and automating routine calculations, this component reduces reliance on any single evaluator's judgment while distributing verification tasks to alleviate administrative overload. Concerns regarding algorithmic bias and data ethics associated with digital models such as S-UDLCD are further mitigated through human oversight and the multi-source triangulation embedded within this component.

The Feedback & Development Cycle (Component 4) addresses the critical issue of ineffective feedback loops, as identified in AAMC, MCDA, and SHOA, by connecting evaluation outcomes to annual academic contracts, educational and research planning, resource allocation, and promotion opportunities. This closed-loop system transforms evaluation from a retrospective judgment into a forward-looking capacity-building tool, thereby fostering continuous organizational learning and professional growth.

In summary, by intentionally addressing these specific weaknesses while incorporating the strengths of global models, the proposed framework provides a comprehensive, equitable, and scalable solution tailored to the Iranian medical education context.

Limitations

This study has several limitations that should be acknowledged. Methodological limitations of the review: First, the review relied on published sources and institutional reports, which may have resulted in the oversight of some operational models that were not formally documented. Second, substantial heterogeneity in model structures, purposes, and assessment tools limited the application of uniform evaluative criteria and complicated direct comparisons. Third, most available evidence originates from high-income Western countries, which may restrict generalizability to the Iranian context due to cultural, structural, and resource differences. Fourth, the absence of empirical outcome data regarding the real-world impact of each model underscores the necessity for future field studies. Fifth, while grey literature was included to capture local policies, these contextual documents were limited to those published by the Iranian Ministry of Health and individual Iranian universities; although this was suitable for developing a nationally tailored model, it inevitably constrains the international applicability of our contextual implementation analysis.

Limitations of the proposed conceptual model: First, the model is currently theoretical and has not yet undergone empirical validation through pilot implementation or longitudinal studies. Its feasibility, acceptability, and actual impact on faculty performance and institutional outcomes remain to be tested. Second, the model's effectiveness depends on robust digital infrastructure and high-quality data sources, which may not be uniformly available across Iranian medical universities. Third, the integration of multiple assessment mechanisms increases administrative complexity, requiring substantial investment in training, procedural guidelines, and administrative support. Fourth, the weighting of performance indicators involves value judgments that, if not negotiated through inclusive processes, could introduce bias or provoke faculty resistance. Fifth, despite multi-source verification, certain components rely on self-reported data, rendering the system susceptible to inaccuracies or strategic reporting. Sixth, the model does not fully account for contextual implementation barriers—including resource constraints (financial, human, technological), political and cultural dynamics, institutional resistance to change, faculty concerns regarding increased accountability, and potential conflicts with existing regulatory frameworks. Successful implementation will require not only technical solutions but also comprehensive change management strategies, stakeholder engagement, and sustained leadership commitment.

Seventh, while minimizing evaluator bias was a core principle of the framework, this conceptual study inten-

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tionally does not address the design of operational mechanisms such as rater training, calibration, statistical moderation of scores, or other quality assurance processes. These elements will be systematically developed and empirically validated in subsequent phases of this research. Clarifying this boundary is essential to prevent overinterpretation of the framework's readiness for immediate implementation.

Conclusion

This critical review concludes that effective faculty evaluation in Iranian Universities of Medical Sciences necessitates a paradigm shift from fragmented, metric-driven approaches to an integrated, mission-aligned, and context-sensitive framework. By synthesizing eight international and national models through the Carnwell and Daly analytical framework, we propose a localized "Academic Governance Model for Faculty Evaluation" that integrates mission-role alignment, multi-criteria performance indicators, multimodal assessment mechanisms, and a continuous feedback and development cycle. This model provides a conceptual foundation for educational policymakers and university administrators to design fair, transparent, and development-oriented evaluation systems that balance recognition across teaching, research, clinical service, administration, and cultural engagement, while strengthening organizational justice and aligning individual performance with institutional missions. However, as a theoretically derived framework, the model requires empirical validation; future studies should prioritize pilot implementation in selected Iranian Universities of Medical Sciences, longitudinal impact assessments on faculty performance and satisfaction, comparative analyses across different institutional types, and qualitative explorations of stakeholder perceptions regarding the model's fairness and developmental value.

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Conflict of Interests

The authors declare that they have no competing interests.

Authors' Contributions

S.Y. conceptualization, study design, methodology development, and manuscript revision; R.H.Z. conceptualization, study design, methodology development, and manuscript preparation; M.K. framework refinement, literature organization, analytical approach development, and manuscript preparation; S.Y., R.H.Z., and M.K. critical appraisal and synthesis of models (collaboratively); R.H.Z. and M.K. manuscript preparation (initial draft); S.Y. critical revision, conceptual enrichment, and assurance of methodological rigor; all authors subsequent revisions, critical review of intellectual content, and final approval.

Ethical Considerations

As this research was based on a review of existing studies and did not involve human participation, it did not require ethical approval. However, research ethics principles were observed, including accurate citation, avoidance of distortion or plagiarism, and impartial presentation of results. Limitations related to data quality or availability were also stated transparently.

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Data Availability

The data supporting the findings of this study are available upon request from the corresponding author.

AI Use Statement

Artificial intelligence (GPT-5, ChatGPT) was used for translation support and English language proofreading. All outputs were reviewed and verified by the authors to ensure accuracy and integrity of the content before inclusion in the manuscript

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