

Total Quality Management as a Strategic Operational Framework for Quality Assurance and Sustenance in Indian Higher Education Institutions: A Conceptual Review

Shoubhanik Saha¹, Somprabh Dubey², Devinder Narain³

¹Assistant Registrar (A&R), Assistant Professor, School of Business Studies & Entrepreneurship, Shobhit University, Gangoh, Uttar Pradesh, India.

²Associate Professor & Head, School of Business Studies and Entrepreneurship & Director IQAC, Shobhit University, Gangoh, Uttar Pradesh, India.

³Professor of Management and Sr. Director Corporate Relations, Shobhit Institute of Engineering and Technology, (Deemed to be University), Meerut, Uttar Pradesh, India.

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ABSTRACT

For three decades, one recurring event has shaped how quality assurance works in Indian higher education: the periodic external assessment visit, run either by the National Assessment and Accreditation Council (NAAC) or by the National Board of Accreditation (NBA). That structure has done real work — it has made quality a formal institutional obligation, one that colleges and universities cannot simply ignore. What it has not reliably done is turn quality into a continuous operational habit. This paper argues that Total Quality Management (TQM), reframed as a strategic operational framework rather than a periodic compliance exercise, is what allows an institution to bridge that divide. Curriculum design, faculty performance, research output, student support and institutional governance become, on this reading, everyday sites of quality practice rather than evidence assembled hastily before an assessment cycle. The paper draws on TQM's industrial roots in Deming, Juran and Crosby, and on the education-specific scholarship built by Sallis, by Owlia and Aspinwall, and by Sahney, Banwet and Karunes, to synthesise six interlocking components: a transformation-process view of the institution, SERVQUAL-QFD gap analysis, accreditation-aligned criteria mapping, a leadership and process-management stream, the Owlia-Aspinwall quality dimensions, and excellence-model-based approaches. These six pieces are woven together as a single framework and read against India's shifting regulatory landscape, including the proposed Viksit Bharat Shiksha Adhishthan (VBSA) Bill, 2025, on the premise that a TQM system built around institutional operation, rather than around any single named evaluator, stays relevant no matter who ends up doing the evaluating. The paper wraps up by working through what this means for institutional leadership and policy, being upfront about the limits of a purely conceptual treatment, and flagging the empirical groundwork a subsequent primary study still needs to cover.

Keywords: Total Quality Management; quality assurance; NAAC; Indian higher education; accreditation; institutional governance; quality sustenance

INTRODUCTION

Quality assurance in Indian higher education has long behaved like an episodic discipline rather than a continuous one. Institutions gear up in the months before a NAAC or NBA visit — Self Study Reports get compiled, Annual Quality Assurance Reports get updated, and the documentary trail external evaluators expect gets assembled, often under considerable time pressure. Then, once accreditation is secured, that energy tends to dissipate. This is not really a story about bad intentions. It is a structural consequence of how quality assurance was designed in the first place: as a periodic external audit bolted onto the institution, rather than as something woven into its everyday academic and administrative functioning.

TQM starts from a different premise entirely. Originating in manufacturing through the work of W. Edwards Deming, Joseph M. Juran and Philip B. Crosby, it holds that quality gets produced continuously — through disciplined process management and sustained leadership commitment — rather than inspected for once the product already exists. Over the last thirty years this philosophy has moved well beyond manufacturing into services and knowledge-based sectors, and higher education is now among the domains where it has been most seriously theorised and tested. Edward Sallis made an early case for its educational relevance; S. Sahney, D.K. Banwet and S. Karunes then built a sustained empirical programme applying and testing the idea specifically within Indian institutions.

Here is the specific claim this paper wants to make. Properly adapted, TQM does its best work in the Indian higher education context not as a parallel improvement initiative running alongside accreditation, but as the strategic operational framework that produces accreditation evidence as a by-product of routine practice — rather than as a separate exercise mobilised around it. Why does this distinction matter? Because India's accreditation coverage is still strikingly incomplete. Recent estimates put the share of accredited colleges and universities at only 12 to 13 percent of the sector, and the shortfall persists even among institutions that do engage with the process, where accreditation is secured once and then not sustained across subsequent cycles.

This all unfolds against a regulatory backdrop that is itself moving. The Viksit Bharat Shiksha Adhishtan (VBSA) Bill, 2025 — introduced in the Lok Sabha in December 2025 and currently with a Joint Parliamentary Committee — proposes replacing the University Grants Commission (UGC), the All India Council for Technical Education (AICTE) and the National Council for Teacher Education (NCTE) with a single apex regulatory body, operating through three subordinate councils. One of these, the Accreditation Council, would absorb the functions NAAC and NBA currently perform separately. Whatever becomes of the Bill, the position taken here is straightforward: a genuinely operational quality framework should be designed around what an institution does, not around which external authority happens to be reviewing it at a given moment. That is exactly the design principle a well-constructed TQM framework offers.

The Evolution of TQM: Industrial Foundations and Educational Adaptation

Educators did not invent the conceptual vocabulary now used for TQM in higher education. People solving industrial quality problems did, and their contributions deserve a closer look before we get to how that vocabulary was later carried over into classrooms and administration blocks.

W. Edwards Deming's Fourteen Points for Management pushed for constancy of purpose, the elimination of numerical quotas, breaking down barriers between departments, and a shift from supervision toward leadership — all grounded in a systemic approach that treats quality problems as arising from process variation. His Plan-Do-Check-Act (PDCA) cycle, developed with Walter Shewhart, is still among the most widely used continuous-improvement methods across sectors, and in an educational setting it underlies something quite familiar: the logic behind periodic curriculum review, faculty appraisal and institutional self-study.

Joseph M. Juran's contribution centres on the Quality Trilogy — planning, control and improvement — paired with the Pareto Principle, his observation that a handful of root causes usually drive most of the quality problems inside any given system. One of Juran's insinuations matters a great deal here: quality should be managed as a core organisational function, not handed off wholesale to a specialised department. This bears directly on how Indian HEIs structure their Internal Quality Assurance Cells. An IQAC treated as the sole custodian of quality, cut off from mainstream academic and administrative decision-making, ends up recreating exactly the delegation trap Juran warned against decades ago.

Philip B. Crosby is associated above all with Zero Defects and his Four Absolutes of Quality Management — that quality means conformance to requirements; that prevention, not inspection, is the right system for achieving it; that zero defects is the only sensible performance standard; and that the true measure of quality is the cost of non-conformance. His Fourteen Steps of Quality Improvement, running from management commitment through measurement, corrective action and goal-setting, gave later adopters one of the earliest step-by-step implementation roadmaps, later adapted for use in educational institutions.

Deming, Juran and Crosby differ in emphasis, but their work converges on three commitments: leadership from the top, decisions grounded in data, and improvement treated as continuous rather than a one-off event. It is this convergence — translated into the language of curricular design, faculty development, student support and institutional governance — that underlies the education-specific frameworks taken up next.

TQM in Higher Education: An Operational Perspective

Edward Sallis was among the first to argue directly for TQM's place in education, describing it as continuous-improvement philosophy paired with a practical toolkit for meeting stakeholder needs. He also drew a useful line between quality assurance, which stops defects from happening in the first place, and quality control, which catches them only once they already have. S. Sahney, D.K. Banwet and S. Karunes carried this further, reframing the entire higher education system as a transformation process: students, faculty, administrative staff and physical infrastructure go in as inputs; teaching, learning and administration do the converting; examination results, employability outcomes and broader societal contribution come out the other end. Their later empirical work put SERVQUAL and Quality Function Deployment (QFD) to direct use in Indian institutions, asking students where their expectations and their actual experience diverged, and turning the resulting gaps into concrete design changes.

Elsewhere, M.S. Owlia and E.M. Aspinwall reviewed TQM case studies from UK and US institutions and pulled out ten recurring markers of a genuine total-quality culture — leadership, strategic planning, organisation for quality, employee involvement, teamwork, training for quality, design management, process management, and an evidence-based approach to analysis. A companion framework of theirs proposed six specific dimensions of educational quality: tangibles, competence, attitude, content, delivery and reliability. These six dimensions have since become something close to a default reference point for building quality-perception survey instruments in higher education research, in India as much as elsewhere.

Taken as a whole, this body of work matters for one reason above all: it turns TQM from a borrowed industrial metaphor into something testable and evidence-based, purpose-built for higher education, with instruments, dimensions and structural models that can be adapted for Indian institutions rather than lifted straight off a factory floor.

The Indian Regulatory Architecture for Quality Assurance

India built its institutional architecture for quality assurance one piece at a time, starting with the National Policy on Education (1986) and its associated Programme of Action (1992), both of which called for an autonomous accrediting body. NAAC came into being in 1994 under the UGC to fulfil that mandate, and today it assesses institutions across seven criteria — curriculum, teaching and evaluation, research and extension, infrastructure, student support, governance, and institutional values. NBA does the equivalent job for technical and professional programmes. IQACs, mandated inside individual institutions, are supposed to be the internal engine that keeps quality assurance activity going between one external assessment cycle and the next.

Three decades into this architecture, the overall accreditation rate remains low — and that persistence points to something structural, not merely administrative. According to the All India Survey on Higher Education (AISHE), India's higher education system comprises 1,084 universities and 42,343 colleges; as of 2025, NAAC had accredited just over 9,000 of these, leaving more than 30,000 institutions without valid accreditation. A consolidated 2023 Wikipedia summary put NAAC's cumulative reach at 820 universities and 15,501 colleges as of June that year — a number that, set against AISHE's total institutional count, shows how much ground the accreditation apparatus still has to cover, even accounting for the expanded activity under the newer binary accreditation framework rolled out from 2025 onward.

This architecture happens to be getting rewritten right now. The VBSA Bill, 2025 proposes repealing the Acts governing the UGC, AICTE and NCTE and folding them into a single apex body operating through a Regulatory Council, an Accreditation Council and a Standards Council — with the Accreditation Council taking over NAAC's and NBA's current functions. A Joint Parliamentary Committee report is expected during the Monsoon

Session of 2026, and beyond that, the Bill's final shape and any transition timeline are still open questions. For the framework this paper develops, the point that matters is simple: a quality system built mainly to satisfy one named external evaluator is exposed to exactly this sort of regulatory reshuffle. One built around operational practice — routinely generating, tracking and improving curriculum quality, faculty performance, research output, student support and governance — keeps producing the evidence a differently named evaluator would still ask for.

Review of Literature: Thematic Synthesis

Foundational Models and International Contributions

The theoretical foundations here were laid substantially by Owlia and Aspinwall's 1996 and 1997 work, already discussed above, and by Sallis's widely cited 2002 text framing TQM as continuous-improvement philosophy plus a practical toolkit for meeting stakeholder needs. Writing around the same period, N.G. Borahan and R. Ziarati made a related but distinct point: institutions are better served combining elements of TQM with the Malcolm Baldrige criteria and ISO 9000 rather than committing to any single framework in isolation. That is an early acknowledgment — one this paper shares — that TQM in education works best as one component within a broader quality-management ecosystem, not as a stand-alone solution.

The Sahney-Banwet-Karunes Programme and Indian Empirical Work

The most sustained empirical programme on TQM in Indian higher education belongs to S. Sahney, D.K. Banwet and S. Karunes. Across the early-to-mid 2000s their work progressively built out a customer-oriented model of quality: applying QFD to redesign a technical management programme in 2003; modelling the institution as a transformation process and applying SERVQUAL-QFD from a student perspective in 2004; examining the underlying constructs of customer requirements that same year; and by 2008 extending the model to incorporate faculty perceptions alongside student perceptions, combining SERVQUAL, gap analysis, QFD, interpretive structural modelling and path analysis into a composite quality index. Sahney's 2016 synthesis then pulled more than a decade of this accumulated work into a single practical, empirically grounded model meant to help Indian HEIs align internal processes with stakeholder expectations on an ongoing basis.

Other Indian contributions approach the same question from different angles. C.M. Thakkar's 2011 survey found TQM awareness had spread widely among Indian HEIs, even where systematic implementation stayed patchy and dependent on individual leadership enthusiasm rather than embedded process. A. Sahu, R. Shrivastava and R. Shrivastava's 2013 review pointed to leadership commitment, faculty development, adequate infrastructure and continuous process review as the factors most reliably separating institutions that sustain quality improvement from those that do not. V. Sunder M. and J. Antony, in 2018, looked at how Lean Six Sigma techniques — adapted from reducing process variation in manufacturing — could apply to administrative processes like admissions, examinations and grievance redressal, arguing these techniques complement rather than compete with a broader TQM framework by targeting specific operational inefficiencies.

NAAC-TQM Alignment and Accreditation-Focused Studies

A more recent, and rather more direct, strand of literature has tried to map TQM straight onto NAAC's evaluation architecture. One 2025 study examined the correlation between TQM vectors and NAAC's seven quality-assessment criteria across universities, autonomous colleges and affiliated colleges, finding a strong positive association between how far TQM had been implemented and the accreditation grade subsequently achieved — direct empirical support for treating TQM adoption as a genuine pathway to better accreditation performance, not a parallel or competing exercise. P.Y. Davda and D. Vithalani's 2025 review of NAAC and IQAC literature reached a related but somewhat more qualified conclusion: real improvements in curriculum design, faculty development and institutional accountability wherever IQACs actually functioned well, but persistent funding shortages, uneven implementation across regions, and resistance to change limiting how far those gains extend.

S. Ghatole's decade-long study of NAAC outcomes across successive accreditation cycles in Gujarat reaches a related conclusion from a different direction: accreditation performance has become one of the more decisive factors in institutional competitiveness within India's higher education market. Read alongside the persistently low national accreditation rate, that finding underscores both the stakes riding on accreditation and how unevenly institutions are currently positioned to pursue it.

Barriers to Sustained Implementation

A recurring theme across this literature — from M. Sirvanci's 2004 catalogue of implementation barriers through to more recent Indian studies — is that the main obstacles to TQM in education are cultural and structural, not technical. Resistance to change within faculty ranks; genuine disagreement over who the "customer" of education actually is; an awkward fit between industrial quality metrics and academic work; and, specific to India, a tendency for quality-improvement effort to concentrate around Self Study Report submission and then slacken once accreditation is secured. S. Nasir and colleagues' 2019 systematic review, consolidating more than two decades of accumulated research, found the same handful of practices consistently predicting TQM success: top-management commitment, strategic planning and employee involvement. That convergence is itself indirect evidence that sustenance, not adoption, is where the harder work actually lies.

Put together, this literature backs two connected claims driving this paper. First, TQM has moved well past being an imported industrial metaphor and now functions as a testable, education-specific framework with a substantial Indian empirical base behind it.

Second — and this is the point that matters more for everything that follows — the literature leans heavily toward correlating TQM adoption with accreditation outcomes, and pays comparatively little attention to the operational and governance mechanisms institutions actually rely on to sustain TQM practice between accreditation cycles. Closing that gap is exactly what the conceptual framework below, and the primary research it feeds into, sets out to do.

Towards an Integrated Strategic Operational Framework

Rather than treat the streams of literature reviewed above as separate or competing models, this paper pulls them into a single operational framework made up of six interlocking components. It is presented here as a conceptual contribution — its empirical validation, across a sample of institutions, is the job of the primary research this paper is meant to precede.

The Transformation-Process Component

Here the institution is treated as an input-process-output system. Students, faculty, administrative staff, infrastructure and curriculum go in as inputs; teaching, learning, research and administration do the transforming; examination results, employability, research productivity and stakeholder satisfaction come out the other end, with continuous feedback loops feeding back into process redesign. This component gives the framework its conceptual backbone: quality becomes an operational concern rather than a purely evaluative one, and the institution gets managed as a system that produces quality continuously rather than one that is assessed for it at fixed intervals.

The SERVQUAL-QFD Component

Borrowed from services marketing, this gap-analysis methodology measures the difference between what stakeholders — students mainly, but also faculty and recruiters — expect from an institution and what they feel they actually get. Quality Function Deployment then turns identified gaps into specific, prioritised design changes across curriculum, pedagogy and support services. That gives the framework a mechanism for converting perception data into concrete institutional action, rather than letting it sit as descriptive feedback nobody acts on.

The Accreditation-Aligned Criteria Component

This component maps TQM vectors directly onto NAAC's seven assessment criteria, building on the empirical finding discussed in Section 5.3 — a strong positive correlation between TQM implementation and the accreditation rating that follows. Structured this way, routine TQM practice generates the evidence base a Self Study Report, an Annual Quality Assurance Report and a Data Validation and Verification process require, as a natural by-product, rather than needing that evidence assembled separately once an assessment cycle looms. Because this component describes institutional operations rather than the identity of whoever happens to be reviewing them, it would need little alteration should the VBSA's proposed Accreditation Council eventually absorb NAAC's and NBA's current functions.

The Leadership and Process-Management Component

Another stream of literature, discussed in Section 5.2, points to top-management leadership commitment together with disciplined process management as the primary driver of downstream quality outcomes — research output, industry collaboration, and eventually accreditation performance — with structural modelling studies on Indian technical institutions naming these two factors as the strongest predictors in the causal chain. This is the component that gives the framework its strategic character rather than a merely procedural one: it locates sustained quality practice in leadership behaviour and governance structure, not compliance activity alone.

The Owlia-Aspinwall Dimensions Component

The six dimensions Owlia and Aspinwall identified — tangibles, competence, attitude, content, delivery and reliability — give the framework a validated instrument base for measuring quality perception among faculty, administrative staff and students, and they have been widely used as the foundation for survey instruments in later empirical work, both internationally and within India.

The Excellence and Accreditation-Based Component

Elsewhere in the world, TQM in higher education has taken the shape of structured excellence models too — the European Foundation for Quality Management (EFQM) framework is a well-known case — judging institutions against set criteria covering leadership, strategy, people, partnerships and results. This component situates India's own accreditation apparatus — NAAC, NBA, and eventually the VBSA's Accreditation Council — inside that same broader family of excellence-model-based quality assessment, rather than treating it as some one-off, purely Indian invention.

The framework's real contribution is not any single one of these six components — each already has independent support in the literature reviewed above — but their integration. An institution running the transformation-process view for structural clarity, the SERVQUAL-QFD methodology for stakeholder-gap detection, the accreditation-aligned criteria mapping for evidentiary efficiency, the leadership and process-management stream for strategic direction, the Owlia-Aspinwall dimensions for measurement, and an excellence-model orientation for external benchmarking, is positioned to generate accreditation-ready evidence as a continuous by-product of ordinary functioning — not as a periodic exercise mobilised separately.

How the Six Components Depend on One Another

None of these six components stands alone as a module an institution can pick up in isolation; each leans on the others in ways a simple checklist reading would miss entirely. Take the transformation-process view: it supplies the structural map of inputs, processes and outputs that is what makes the SERVQUAL-QFD component's gap analysis interpretable at all. Without knowing which process converts which input into which output, a perception gap picked up through SERVQUAL has nowhere to be traced back to, and stays a vague complaint rather than a fixable problem. The same logic runs through the accreditation-aligned criteria component, which is only ever as reliable as the leadership and process-management component holding it up between assessment cycles — a one-time mapping of TQM vectors onto NAAC's seven criteria is a snapshot, nothing more, and

whether that alignment survives past the pressure of an assessment visit comes down to leadership commitment and disciplined process management, exactly as the studies in Section 5.2 suggest.

The Owlia-Aspinwall dimensions, meanwhile, function as a measurement layer running across all five of the other components rather than sitting apart as a sixth. Tangibles and competence bear directly on the transformation-process component's input quality; attitude and delivery are exactly what a SERVQUAL instrument is built to capture; content and reliability map closely onto specific NAAC criteria concerning curriculum and governance. Seen this way, the framework is best understood as one system with a structural layer (transformation process), a diagnostic layer (SERVQUAL-QFD), an evidentiary layer (accreditation-aligned criteria), a governance layer (leadership and process-management), a measurement layer (Owlia-Aspinwall dimensions) and an external-benchmarking layer (excellence models) — not six parallel initiatives an institution might pursue independently of one another.

DISCUSSION

Implications for Institutional Leadership and Policy

For Indian HEI leadership, this framework implies rethinking where IQACs sit within institutional governance. An IQAC that functions mainly as a documentation unit, switched on in the run-up to an assessment visit, reproduces the exact delegation problem Juran flagged decades ago in industrial settings — quality becomes one cell's job rather than a property of how the whole institution runs. The framework instead positions the IQAC as the coordinating mechanism through which all six components are continuously operated: tracking transformation-process indicators, running periodic SERVQUAL-style gap assessments, keeping accreditation-criteria mappings live rather than static, and reporting leadership and process-management indicators to institutional governance on an ongoing basis — not reconstructing all of this evidence only when someone asks for it.

For policy-makers and regulators, the framework's emphasis on operational design over evaluator-specific design bears directly on the transition under consideration through the VBSA Bill. Institutions that build their quality systems narrowly around satisfying NAAC's current criteria would face real transitional cost if NAAC and NBA functions get consolidated under a new Accreditation Council — they would have to reorient around a new set of evaluation criteria from scratch. A framework built instead around operational practice — curriculum quality, faculty performance, research productivity, student support and governance, tracked and improved continuously — produces evidence that a differently structured, differently named evaluator can draw on with comparatively little institutional disruption.

For the primary empirical research this paper is meant to support, the framework also offers something useful for hypothesis construction: a way of treating TQM adoption and TQM sustenance as separate constructs, a distinction the literature reviewed in Section 5.4 leaves surprisingly underdeveloped given how much attention adoption and accreditation-correlation studies already receive. Measuring the operational and governance mechanisms through which institutions actually sustain, rather than merely adopt, TQM practice between accreditation cycles is accordingly flagged here as a priority for the next empirical phase of this research programme.

At the level of everyday faculty and student experience, the framework implies a change in how feedback gets collected and acted on. Student feedback today is gathered mainly to satisfy NAAC's student-satisfaction survey requirement — typically once a year, timed to accreditation cycles rather than pedagogical need. The SERVQUAL-QFD component instead implies more frequent, course-level gap assessment feeding directly into curriculum and pedagogy decisions, with the annual NAAC-mandated survey becoming one output of that continuous process rather than the whole point of it. The same logic holds for faculty: an appraisal system built mainly to generate AQAR documentation differs, in both frequency and purpose, from one built to drive continuous faculty development, and the leadership and process-management component is meant to make that distinction explicit for institutional decision-makers rather than letting the two purposes blur into one.

Limitations of the Conceptual Approach

This paper is a conceptual, literature-based contribution, and it stops short of testing the six-component framework against primary institutional data of its own — the strength it draws between TQM implementation and accreditation outcomes rests on the empirical studies reviewed here, not on fresh analysis. How well the framework holds up may also shift depending on institution type — university, autonomous college, affiliated college — and on resource context, in ways no purely conceptual treatment can fully see coming. Its account of the VBSA Bill is likewise tied to the moment this paper was written: the Bill still sits with a Joint Parliamentary Committee, and its eventual form, along with the transitional arrangements for any NAAC-NBA consolidation, remains an open question. Any of that could shift some of the specific claims made in Section 4, though it would leave the paper's underlying operational-design argument intact.

Conclusion and Directions for Future Research

This paper has argued that Total Quality Management, synthesised across its industrial foundations and its later education-specific adaptation, gives Indian higher education institutions a strategic operational framework capable of addressing a real structural weakness in the current accreditation-centred model of quality assurance — the tendency for quality-improvement effort to bunch up around assessment cycles rather than operate continuously. The six-component framework developed here — transformation process, SERVQUAL-QFD, accreditation-aligned criteria mapping, leadership and process-management, the Owlia-Aspinwall dimensions, and excellence-model orientation — is offered as an integrative conceptual contribution, not a finished or empirically validated model.

The natural next step, and the one this paper is oriented toward, is a primary empirical study testing these components against data collected from faculty, administrative staff and students across a defined institutional cluster — looking in particular at how leadership commitment and process management relate to quality-sustenance outcomes, and at the operational and governance mechanisms through which institutions maintain TQM practice between accreditation cycles. Such a study would also be well placed to examine how institutional TQM practice might need to adapt, if at all, should the VBSA's proposed Accreditation Council eventually consolidate NAAC's and NBA's current functions — a question this conceptual paper has raised but necessarily leaves for subsequent empirical work to answer.

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