

A Serialist Model of In-Service Teacher Education Leading to Qualitative Excellence

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ABSTRACT

The quality of education is fundamentally tethered to the quality of its teachers. In-service teacher education occupies a pivotal role in ensuring educators remain professionally vibrant, pedagogically current, and humanistically developed. This paper presents a Serialist Model of In-Service Teacher Education grounded in the Taxonomy of Teacher Education, which reconceptualises Bloom's three domains into three contextualised axes, the Knowledge Base Axis, the Competency-Based Axis, and the Human Development Axis. The model advances a phased, sequential framework integrating Refresher Courses, Orientation Courses, Faculty Induction Programmes (FIPs), Short-Term Programmes (STPs), and other modalities. Drawing on NEP-2020, NCTE guidelines, Shulman, Habermas, and Deng & Luke, the paper argues that qualitative excellence is achievable only through a holistic, serial progression across all three axes.

Keywords: In-service teacher education, Serialist model, Knowledge base, Competency, Human development, Refresher Course, Orientation Course, Qualitative excellence

1. Introduction

Teacher education is the cornerstone upon which national educational quality rests. UNESCO affirms teachers as the single most influential force for equity, access, and quality in education — a truth that resonates across India's diverse, multilingual, and multi-layered educational landscape. While pre-service preparation provides the foundational architecture of professional identity, in-service teacher education sustains, deepens, and transforms teaching quality across an entire career.

The Taxonomy of Teacher Education offers a transformative framework, replacing Bloom's cognitive, affective, and psychomotor domains with the Knowledge Base Axis, Human Development Axis, and Competency-Based Axis respectively as proposed by (Bhattacharyya, 2024). This repositions teacher education from a generalist academic exercise into a profession-specific, holistic developmental system. The Serialist Model proposed here arranges all modes of professional development — Refresher Courses, Orientation Courses, FIPs, STPs, Workshops, Seminars, and Online CPD — not as isolated interventions, but as a phased, progressive serial sequence across these three axes. Each phase deepens the work of the

previous, building toward qualitative excellence: the state in which a teacher knows deeply, teaches competently, and lives and leads humanistically.

2. Background of the Study

India's in-service teacher education history is marked by policy recognition but fragmented implementation. The Education Commission (1964–66) recommended two to three months of in-service training every five years — largely unrealised. The National Commission on Teachers (1983–85) diagnosed absent needs assessment; NPE-1986 formally linked pre-service and in-service education. Post-1986, a national network of ~500 DIETs, 87 CTEs, 38 IASEs, and 30 SCERTs was established. Despite this architecture, most programmes remain awareness-focused, lecture-based, and episodic.

NCFTE-2009 called for programmes prioritising reflection and collaborative identity. NEP-2020 mandated 50 hours of annual CPD per teacher and digital delivery through DIKSHA, SWAYAM, and SWAYAM Prabha. The Malaviya Mission Teacher Training Programme (MMTTP) and its Centres (MMTTCs) now form the institutional backbone, delivering FIPs (24 days), RCs (12 days), STPs (6 days), and NEP Orientation Programmes (8 days). The Taxonomy of Teacher Education provides the conceptually cohesive framework needed to transform this infrastructure from episodic training into a structured developmental journey.

3. Research Questions

- How can the three-axis Taxonomy of Teacher Education — comprising the Knowledge Base Axis, Competency-Based Axis, and Human Development Axis — be operationalised within a Serialist Model of In-Service Teacher Education to achieve qualitative excellence?
- What are the structural characteristics of existing in-service modalities such as Refresher Courses, Orientation Courses, FIPs, and STPs, and how can they be holistically redesigned within a three-axis serialist framework to address the research gaps that currently impede professional development?

4. Methodology of the Study

This study adopts a Conceptual-Analytical Research Design within the interpretivist paradigm. The primary analytical framework is the Taxonomy of Teacher Education, supplemented by Shulman's PCK framework, Habermas's tripartite epistemology (analytical, hermeneutic, and critical knowledge), and Deng & Luke's disciplinary-practical-experiential typology. Data sources include NEP-2020 policy documents, NCFTE-2009, UGC/MMTTP guidelines, Education Commission reports, and international literature. Content analysis and conceptual mapping extract structural features of in-service modalities, which are then mapped onto the three-axis taxonomy through logical synthesis to generate a prescriptive yet institutionally compatible model.

5. Review of Related Studies

5.1 Taxonomy and Teacher Education

Bloom's Taxonomy (1956) established the cognitive-affective-psychomotor schema. Its direct application to teacher education has been critiqued as learner-centric rather than educator-developmental. The

Taxonomy of Teacher Education proposes a structural reconceptualisation: the cognitive domain maps to the Knowledge Base, the affective to Human Development, and the psychomotor to Competency — grounded in the practical exigencies of the profession, not learner classification.

5.2 Shulman, Habermas, and Deng & Luke

Shulman's PCK framework identifies specialised knowledge types (CK, PK, PCK, KL, Curriculum, Contextual Knowledge) directly incorporated into the eleven-component Knowledge Base Axis. Habermas's tripartite epistemology — analytical (empirical-scientific), hermeneutic (interpretive), and critical (ethical-social) — provides the philosophical basis for knowledge diversity within the axis. Deng and Luke's disciplinary-practical-experiential typology aligns with the serialist logic: disciplinary knowledge in Phase 2, practical in Phase 1, experiential deepened in Phase 3.

5.3 NEP-2020 and MMTTP Structures

NEP-2020's 50-hour CPD mandate, MMTTP institutional architecture, and digital ecosystem (DIKSHA, SWAYAM) provide the policy and institutional conditions for the Serialist Model. The MMTTP's phased programmes — FIP, RC, STP — already correspond structurally to the three phases of the model; what is missing is the explicit three-axis taxonomy binding them into a coherent developmental sequence.

6. Research Gaps

- No unified theoretical framework binds in-service modalities into a developmental sequence; programmes function as discrete, disconnected interventions.
- The Human Development Axis is systematically neglected; most programmes address only content updates and pedagogical techniques.
- Competency development is cited in policy but never sequenced systematically across the eleven competency domains.
- Theoretical frameworks (Shulman, Habermas, Deng & Luke) are rarely reflected in actual programme design.
- Follow-up evaluation is absent (Ramamurthi Committee, 1990); professional development impact is unmeasured.
- The digital divide leaves rural and semi-urban teachers excluded from technology-mediated CPD.
- Structured holistic frameworks exist only for higher education (MMTTP); school-level teachers lack an equivalent model.

7. Discussion and Analysis — The Serialist Model

7.1 Conceptual Architecture

The Serialist Model organises professional development as a three-phased serial sequence, each phase corresponding to one axis of the taxonomy. Unlike concurrent approaches that address all three axes simultaneously but superficially, the serialist method ensures depth through sequencing: Phase 1 (Competency-Based) establishes the practice platform; Phase 2 (Knowledge Base) makes knowledge meaningful within that platform; Phase 3 (Human Development) transforms competent, knowledgeable teachers into holistic, excellent educators. The critical insight is that urgency varies by career stage —

novice teachers need competency; experienced teachers need knowledge enrichment; senior educators need sustained human development.

7.2 The Three Axes in Wholistic Perspective of (Bhattacharyya, 2024).

KNOWLEDGE BASE AXIS (11 Knowledge Domains)	COMPETENCY-BASED AXIS (11 Competency Domains)	HUMAN DEVELOPMENT AXIS (11 HDA Dimensions)
<ul style="list-style-type: none"> • Foundational • PCK • Experiential • Critical • Transactional • Innovative • Aesthetic • Ethical • Integral • Practical • Analytical 	<p>Cognitive Competencies:</p> <ul style="list-style-type: none"> • Pedagogical • Epistemological • Curricular <p>Social Competencies:</p> <ul style="list-style-type: none"> • Management • Collaborative • Social • Behavioural <p>Evaluative Competencies:</p> <ul style="list-style-type: none"> • Technological • Evaluation <p>Higher Order Competencies:</p> <ul style="list-style-type: none"> • Innovative • Reflective 	<ul style="list-style-type: none"> • Self-Concept • Emotional Intelligence • Empathy & Compassion • Values & Beliefs • Interpersonal Skills • Resilience • Cultural Sensitivity • Ethical Commitment • Aesthetic Awareness • Motivational Orientation • Professional Identity

7.3 The Serialist Phase Architecture

PHASE	PRIMARY AXIS	KEY MODALITY	AXIS DISTRIBUTION
Phase 1	Competency-Based	FIP — 24 days	Competency 60% KBA 25% HDA 15%
Phase 2	Knowledge Base	Refresher Course — 12 days	KBA 70% Competency 20% HDA 10%
Phase 3	Human Development	Orientation Course — 21 days	HDA 60% KBA 25% Competency 15%

CPD Annual	All Three Axes	STPs + Workshops + Seminars	Equal spread across 50 CPD hours
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7.4 Refresher Course — Knowledge Acquisition Engine (Phase 2)

The Refresher Course (12 working days, 72 contact hours) is conventionally a knowledge-update programme. Within the Serialist Model it becomes the Knowledge Acquisition Engine of Phase 2, systematically addressing multiple knowledge domains. In a wholistic three-axis perspective, a Refresher Course embeds: Knowledge Base components (~70%) — core subject updates, PCK deepening, research orientation, analytical literacy; Competency-Based components (~20%) — reflective, evaluation, and curricular competency sessions; and Human Development components (~10%) — at least one session on emotional awareness, resilience, and values clarification. The Refresher Course becomes not merely a content update but a holistic micro-immersion anchored in knowledge with axis-specific integration.

7.5 Orientation Course — Human Development Phase Anchor (Phase 3)

The Orientation Course (~21 days, CCRT and equivalent bodies) introduces participants to India's artistic, cultural, and natural heritage, producing better citizens through aesthetic and cultural awareness. Within the Serialist Model it is the primary institutional vehicle for the Human Development Axis. Its objectives — creating awareness of Indian culture, developing methodologies for cultural integration, fostering attitudinal change, providing creative expression skills, and promoting integrated approaches — map directly onto the Human Development Axis components: aesthetic awareness, cultural empathy, collaborative engagement, and attitudinal transformation. It also addresses the Aesthetic Knowledge domain (Knowledge Base Axis) and Social Competency (Competency-Based Axis). As a Phase 3 anchor, it addresses the most neglected dimension of in-service teacher education.

7.6 Faculty Induction Programme — Phase 1 Entry

The FIP (24 days, two residential phases) is the Phase 1 entry point — establishing foundational competency awareness, professional role understanding, and initial human development orientation. It introduces all three axes simultaneously at a foundational level: competency through pedagogical and classroom management exposure, knowledge through discipline-specific orientation, and human development through self-concept and professional commitment building.

7.7 Short-Term Programmes, Workshops, Seminars, and NEP Orientation

STPs (6 days) serve as targeted competency-deepening interventions — technological, behavioural, or collaborative — within Phase 1. Workshops, hands-on and action-oriented, align with the Competency-Based Axis (pedagogical, management, and curricular competencies). Seminars, emphasising knowledge exchange and critical discourse, serve the Knowledge Base Axis (foundational, critical, analytical knowledge). The 8-day NEP Orientation and Sensitisation Programme — reaching 15 lakh faculty — functions as a system-wide Phase 2 knowledge update, addressing Foundational, Ethical, and Innovative Knowledge domains and bringing all faculty into alignment with national policy.

8. Findings

- The existing in-service system is structurally weighted toward the Knowledge Base Axis and operationally neglects both the Competency-Based Axis (as a structured developmental sequence) and the Human Development Axis (as a recognised professional priority).
- The Orientation Course is the only existing modality with a built-in Human Development orientation; its full potential within a serialist framework has never been theoretically recognised or structurally utilised.
- The three-phase structure of the Taxonomy of Teacher Education provides a conceptually sound and institutionally compatible framework for redesigning in-service education as a holistic, progressive developmental journey.
- NEP-2020's 50-hour CPD mandate creates the institutional imperative for a serialist model — annual distribution of CPD hours across all three axes is both feasible and educationally necessary.
- The eleven Knowledge Base domains produce teachers who are not merely subject-knowledgeable but epistemologically diverse — capable of analytical, hermeneutic, critical, transactional, and aesthetic engagement.
- The eleven Competency domains, developed through FIPs, STPs, and workshops, build the practical architecture of teaching excellence.



- The Human Development Axis, anchored in the Orientation Course, produces teachers who are emotionally intelligent, culturally sensitive, resilient, and purposefully committed — qualities no content or competency training alone can generate.

9. Discussion

The Serialist Model addresses the fundamental limitation of existing in-service architecture: the absence of developmental intentionality. A teacher may attend a Refresher Course, an occasional workshop, and an annual online module — yet these are not connected by a coherent theoretical thread or progressive developmental logic. Each programme is complete in itself but disconnected from the others, resulting in professional development that accumulates episodically rather than builds systematically.

The serialist approach treats professional development as a structured, career-long journey. The critical insight of the Taxonomy is that the three axes are not equal in urgency at different career stages: a newly inducted faculty member most urgently requires competency development (Phase 1); an experienced teacher seeking qualitative depth requires knowledge enrichment (Phase 2); a senior educator aspiring to exemplary impact requires sustained human development (Phase 3). The model maps this developmental logic onto the existing institutional architecture of Indian in-service teacher education — FIPs, RCs, Orientation Courses, STPs — already in place through MMTTP.

The Orientation Course's wholistic perspective — cultural immersion, creative expression, cross-disciplinary interaction, humanistic orientation — makes it uniquely suited to Phase 3. Qualitative excellence requires the transformation of the teacher as a person: emotional maturity, ethical grounding, resilience, and sense of purpose. The Human Development Axis provides this framework. The Serialist Model ensures this transformation is structurally built into the system, not left to chance. The policy environment of NEP-2020 — 50-hour CPD mandate, MMTTP infrastructure, DIKSHA/SWAYAM ecosystem, and National Mentoring Mission — provides exactly the conditions needed for the Serialist Model to be operationalised at scale.

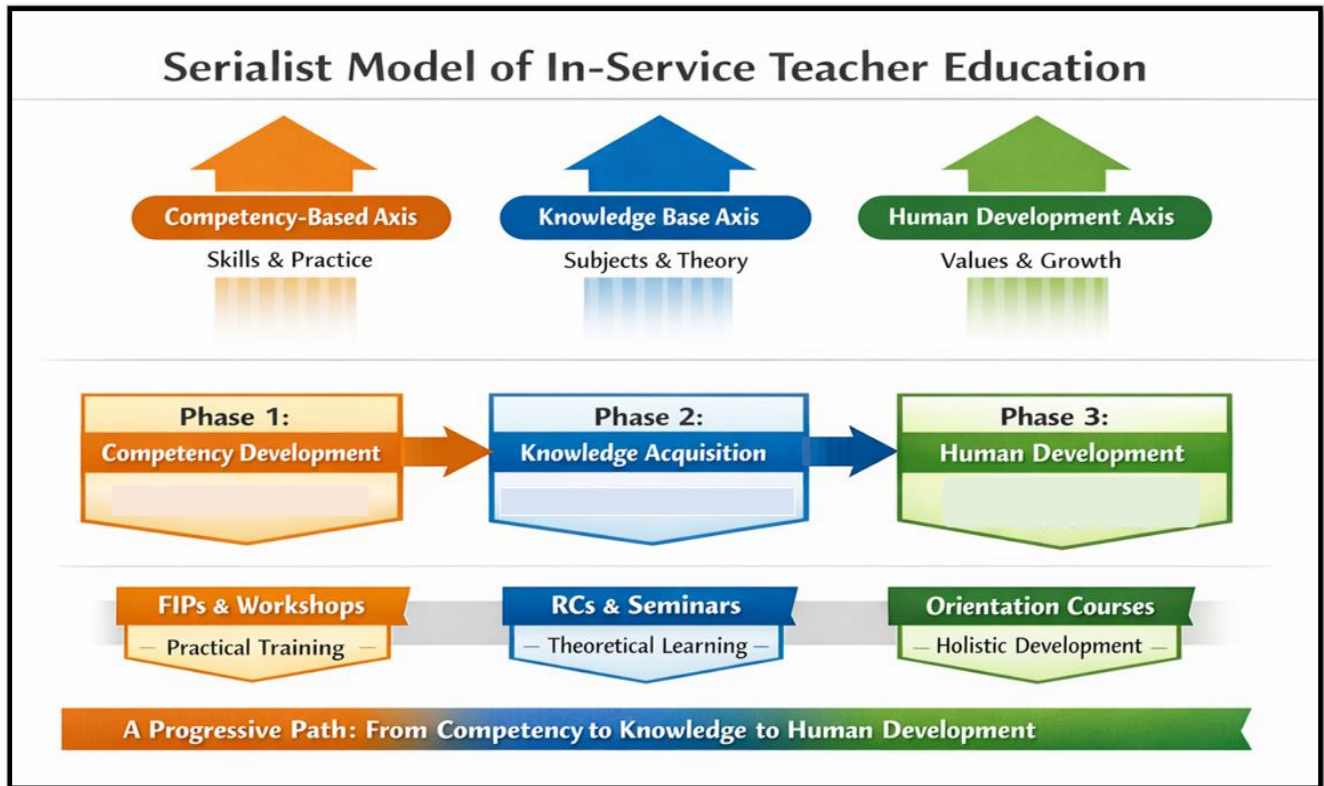
10. Conclusion

This research paper has proposed a Serialist Model of In-Service Teacher Education as a conceptual and structural framework for achieving qualitative excellence. Grounded in the Taxonomy of Teacher Education, the model organises Refresher Courses, Orientation Courses, FIPs, STPs, Workshops, Seminars, and Online CPD into a three-phased, axis-specific developmental sequence.

The three axes — Knowledge Base (intellectual breadth and epistemological depth), Competency-Based (professional skill and practical excellence), and Human Development (emotional intelligence, values, and holistic personhood) — constitute a complete taxonomy of qualitative excellence. No in-service system can achieve excellence if it systematically neglects any of these axes. The Serialist Model ensures all three receive intentional, sustained, and progressive attention across a teacher's entire career.

The model's greatest contribution lies in reconceptualising the Orientation Course and Refresher Course within a wholistic three-axis framework. The Orientation Course, long valued for cultural richness but undertheorised developmentally, emerges as the primary institutional instrument of Phase 3. The Refresher Course is redesigned as a multi-axis developmental programme rather than a simple content update. For India to realise the educational transformation envisioned in NEP-2020 — where every teacher is a lifelong learner, a culturally sensitive practitioner, a pedagogically innovative professional, and a humanistically developed person — the Serialist Model offers a coherent, theoretically grounded,

institutionally compatible, and practically actionable roadmap. Qualitative excellence is not a destination but a journey: structured, serial, and sustained across the full arc of every teacher's professional life.



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