



Teacher Attributes and Effective Teaching-Learning: A Theoretical Framework for Conceptualizing Pedagogical Competence

Researcher

Mahendrakumar D. Dabhi

Guide-Dr. Avdhesh Jha

CVM University, Vallabh Vidyanagar, Anand.

Abstract

The quality of teaching-learning processes in any educational system is fundamentally tied to the attributes possessed by teachers. While teaching is often examined through its outcomes, such as student achievement, classroom climate, or curriculum delivery, comparatively less theoretical attention has been paid to systematically conceptualizing the underlying attributes that make a teacher pedagogically competent. This paper proposes a theoretical framework that classifies teacher attributes into three interlocking domains: personal, professional, and pedagogical. Drawing upon established models of teacher knowledge and effectiveness, including Shulman's Pedagogical Content Knowledge, the Technological Pedagogical Content Knowledge (TPACK) framework, Danielson's Framework for Teaching, and Korthagen's onion model of reflective teacher development, the paper synthesizes existing theoretical positions into an integrated model linking teacher attributes to the effective teaching-learning process. The framework argues that pedagogical competence emerges not from any single attribute but from the dynamic interaction among cognitive, affective, and behavioral dimensions of teacher functioning. Implications for teacher education curricula, professional development, and future research are discussed.

Keywords: teacher attributes; pedagogical competence; effective teaching-learning; teacher effectiveness; conceptual framework; teacher education

1. Introduction

Teaching is widely regarded as one of the most complex professional practices, requiring the simultaneous orchestration of subject knowledge, pedagogical skill, classroom management, and interpersonal sensitivity. Despite decades of research attempting to identify what makes a good



teacher, the field continues to lack a unifying theoretical account of how individual teacher attributes combine to produce effective teaching-learning outcomes. Much of the existing literature treats teacher quality either as an aggregation of discrete competencies, such as subject mastery, communication skill, and classroom management, or as an emergent product of experience and reflection, with limited integration between these perspectives.

This conceptual ambiguity has practical consequences. Teacher education programmes often select and train candidates against checklists of competencies without a coherent theory of how those competencies interrelate or which attributes are foundational versus derivative. Policy frameworks for teacher evaluation similarly tend to operationalise effectiveness through observable behaviours, leaving the underlying psychological and dispositional attributes under-theorised.

The present paper addresses this gap by proposing a theoretical framework that organises teacher attributes into three interdependent domains, namely personal, professional, and pedagogical, and examines how these domains interact to shape the teaching-learning process. The paper does not report new empirical data; rather, it synthesises established theoretical positions in teacher effectiveness research to build an integrative conceptual model. The objectives of this paper are threefold: (a) to review major theoretical perspectives on teacher effectiveness and pedagogical competence; (b) to propose a tripartite classification of teacher attributes; and (c) to theorise the mechanisms through which these attributes translate into effective teaching-learning processes.

2. Theoretical Background: Conceptualizing Teacher Effectiveness

Conceptualisations of teacher effectiveness have evolved considerably over the past five decades. Early process-product research, exemplified by Medley's (1979) synthesis, attempted to correlate observable teacher behaviours directly with student achievement gains, treating effectiveness largely as a function of instructional technique. While influential, this behaviourist orientation has been critiqued for neglecting the cognitive and dispositional substrates that generate effective behaviour in the first place.

Darling-Hammond's (2000) policy-oriented review shifted attention toward teacher qualifications, including certification status, subject-matter preparation, and pedagogical training, as proxies for



effectiveness, establishing an empirical link between formal preparation and student outcomes. This qualification-based view, however, does not fully account for variation in effectiveness among similarly credentialed teachers, suggesting that attributes beyond formal qualification, such as beliefs, motivation, and relational skill, also matter.

A more integrative perspective emerged with Hattie's (2009) large-scale synthesis of meta-analyses, which identified teacher-related variables, including teacher-student relationships, feedback quality, and clarity of instruction, as among the strongest influences on student achievement, often outweighing structural variables such as class size. Hattie's work implicitly supports a multidimensional view of teacher effectiveness, in which cognitive, behavioural, and relational attributes jointly determine impact.

Building on this, Kyriacou's (2007) conceptualisation of essential teaching skills and Goe's (2007) synthesis of teacher quality research both point toward a layered model: foundational attributes such as knowledge, values, and beliefs give rise to enacted attributes such as instructional strategies, classroom management, and assessment practices, which in turn produce proximal outcomes such as student engagement and understanding, and distal outcomes such as achievement and attitudes toward learning. This layered logic underlies the theoretical framework proposed in this paper.

3. Domains of Teacher Attributes: A Conceptual Framework

The framework proposed here organises teacher attributes into three domains, namely personal, professional, and pedagogical, that operate in dynamic interdependence rather than in isolation.

3.1 Personal Attributes

Personal attributes refer to the dispositional and affective qualities a teacher brings to the classroom independent of formal training. These include intrinsic motivation, empathy, patience, emotional regulation, self-efficacy beliefs, and a genuine interest in learners' wellbeing. Korthagen's (2004) onion model situates such qualities at the core of teacher functioning, beneath observable competencies and behaviours, arguing that mission, identity, and beliefs shape how teachers interpret and respond to classroom situations even



before specific skills come into play. Personal attributes are theorised as the affective foundation upon which professional and pedagogical competencies are built; a teacher with strong subject knowledge but low empathy or self-efficacy may struggle to translate that knowledge into effective practice.

3.2 Professional Attributes

Professional attributes encompass the knowledge base and ethical orientation a teacher acquires through formal preparation and continued professional engagement. This includes content knowledge, awareness of curriculum standards, understanding of learner development, commitment to professional ethics, and willingness to engage in continuous professional learning. Darling-Hammond's (2000) emphasis on certification and subject-matter preparation aligns with this domain, as does the broader literature on teacher professionalism, which frames effective teaching as contingent on a teacher's ongoing identity as a learning professional rather than a static set of credentials.

3.3 Pedagogical Attributes

Pedagogical attributes refer to the practical, applied competencies through which personal and professional qualities are enacted in the classroom: instructional planning, questioning technique, differentiation, classroom management, formative assessment, and the strategic use of technology. Shulman's (1986, 1987) concept of Pedagogical Content Knowledge is foundational here, describing the distinctive capacity to transform subject matter into forms accessible to learners, a blend of content expertise and instructional craft that is neither purely academic nor purely procedural. Mishra and Koehler's (2006) TPACK framework extends this idea by adding technological knowledge as a third interacting component, reflecting the increasing integration of digital tools into contemporary teaching-learning processes.



Table 1 Three-Domain Framework of Teacher Attributes

Attribute Domain	Representative Attributes	Theoretical Anchor(s)
Personal	Empathy, intrinsic motivation, self-efficacy, patience, emotional regulation	Korthagen's Onion Model (2004)
Professional	Content knowledge, curriculum awareness, professional ethics, continuous learning orientation	Darling-Hammond (2000); Shulman (1986)
Pedagogical	Instructional planning, questioning technique, differentiation, classroom management, technology integration	Shulman (1986, 1987); Mishra & Koehler (2006); Danielson (2007)

The three domains are not hierarchical but mutually reinforcing: personal attributes shape how professional knowledge is acquired and valued; professional knowledge informs which pedagogical strategies a teacher considers appropriate; and pedagogical enactment, in turn, provides feedback that reshapes personal beliefs and professional understanding over time. This recursive relationship is central to the framework's claim that pedagogical competence is an emergent, dynamic property rather than a fixed trait.

4. Theoretical Models Underpinning Pedagogical Competence

Several established models illuminate how the three attribute domains combine into observable pedagogical competence.

Shulman's (1986) Pedagogical Content Knowledge model remains foundational, positing that effective teachers possess a unique amalgam of content knowledge and pedagogical knowledge that allows them to anticipate learner misconceptions, select appropriate representations of content, and sequence instruction meaningfully. Shulman's framework directly supports the theoretical claim that subject mastery alone, a professional attribute, is insufficient without the pedagogical capacity to translate it into learner-accessible forms.

The TPACK framework (Mishra & Koehler, 2006) builds on Pedagogical Content Knowledge by incorporating technological knowledge, proposing that effective use of educational technology



emerges from the intersection of technological, pedagogical, and content knowledge rather than from technological fluency alone. This model is particularly relevant to contemporary teacher attribute frameworks given the increasing digitisation of teaching-learning environments.

Danielson's (2007) Framework for Teaching offers a more comprehensive operationalisation, organising teacher practice into four domains: planning and preparation, the classroom environment, instruction, and professional responsibilities. This framework is useful for the present theoretical model because it demonstrates how personal, professional, and pedagogical attributes manifest across distinct phases of the teaching cycle, from pre-instructional planning to post-instructional reflection.

Korthagen's (2004) onion model, introduced earlier, contributes a layered, person-centred view, situating attributes from outer layers such as environment and behaviour to inner layers such as competencies, beliefs, identity, and mission, and arguing that lasting pedagogical competence requires alignment across all layers rather than superficial behavioural compliance. Rosenshine's (2012) principles of instruction, by contrast, offer a more behaviourally specific account, reviewing instructional strategies such as guided practice, scaffolding, and review, that translate pedagogical attributes into measurable classroom actions.

Collectively, these models suggest that pedagogical competence is best understood as a multi-layered construct: surface-level instructional behaviours are underpinned by professional knowledge structures such as Pedagogical Content Knowledge and TPACK, which are themselves shaped by deeper personal beliefs and identity as theorised in Korthagen's core layers. The theoretical framework proposed in this paper integrates these models by treating personal, professional, and pedagogical attributes as roughly analogous to Korthagen's core, knowledge, and behavioural layers respectively, while drawing on Shulman, Mishra and Koehler, and Danielson to specify the content of the professional and pedagogical domains in greater detail.



5. Interrelationship Between Teacher Attributes and the Effective Teaching-Learning Process

The effective teaching-learning process can be theorised as the point of convergence at which teacher attributes interact with learner characteristics and contextual conditions to produce meaningful learning. Within this framework, personal attributes influence the relational quality of the classroom, shaping student motivation, sense of safety, and willingness to engage, consistent with Hattie's (2009) finding that teacher-student relationships rank among the most powerful influences on achievement. Professional attributes determine the depth and accuracy of content delivered, while pedagogical attributes determine the accessibility, structure, and responsiveness of that delivery to learner needs.

Crucially, the framework theorises that deficits in one domain cannot be fully compensated by strengths in another, though the domains do interact compensatorily to some degree. A teacher with strong pedagogical technique but weak professional content knowledge may deliver well-structured but substantively inaccurate instruction; conversely, a teacher with deep content expertise but underdeveloped pedagogical skill may possess accurate knowledge that remains inaccessible to learners. The effective teaching-learning process, therefore, is theorised as requiring a threshold level of competence across all three domains, with pedagogical attributes serving as the primary translational mechanism through which personal and professional attributes become instructionally consequential.

This theoretical position carries an important implication: interventions aimed at improving teaching-learning outcomes that focus exclusively on one domain, for instance, technical training in instructional methods without attention to teacher beliefs or content mastery, are likely to yield limited or unstable gains. Sustainable improvement in teaching-learning effectiveness, by this account, requires coordinated attention to all three attribute domains simultaneously.

6. Implications for Teacher Education

The proposed framework carries several implications for teacher education and professional development. First, teacher preparation programmes should explicitly attend to personal attributes



through reflective practice, mentoring, and identity-focused coursework, rather than treating dispositions as incidental to technical training. Second, professional knowledge development should be structured to support the kind of content transformation described by Pedagogical Content Knowledge and TPACK, rather than treating subject knowledge and pedagogy as separate strands of preparation. Third, pedagogical skill development should be grounded in authentic practice opportunities, such as supervised teaching practice, simulation, and reflective feedback cycles, that allow trainee teachers to enact and refine the integration of personal and professional attributes in real instructional contexts.

For teacher evaluation and continuous professional development systems, the framework suggests that assessment instruments should move beyond purely behavioural checklists to also capture indicators of professional knowledge depth and personal or dispositional functioning, in recognition of the layered and interactive nature of pedagogical competence.

7. Conclusion

This paper has proposed a theoretical framework that conceptualises teacher attributes across three interdependent domains, namely personal, professional, and pedagogical, and theorises their combined role in shaping the effective teaching-learning process. By synthesising established models of teacher knowledge and effectiveness, including Shulman's Pedagogical Content Knowledge, the TPACK framework, Danielson's Framework for Teaching, and Korthagen's onion model, the paper argues that pedagogical competence is best understood as an emergent, dynamic property arising from the interaction of dispositional, knowledge-based, and practice-based attributes rather than as a fixed trait or a simple checklist of skills. The framework offers a conceptual foundation for future empirical research seeking to operationalise and measure teacher attributes in relation to teaching-learning effectiveness, and provides theoretical grounding for the design of teacher education curricula that attend holistically to who teachers are, what they know, and what they are able to do in the classroom.



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