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Reconceptualizing Teacher Professional Competence at the Nexus of Autonomy and Accountability: A Systematic Review and Conceptual Framework for School Education

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Abstract: Teacher professional competence, teacher autonomy, and teacher accountability are among the most extensively studied constructs in school-education research, yet they are rarely theorized together. This paper presents a systematic literature review and conceptual synthesis to examine how these three constructs relate in the context of school teachers and to propose reconceptualizing teacher professional competence as a construct co-produced at the intersection of autonomy and accountability rather than determined by either alone.

Following a PRISMA-informed search and synthesis strategy, the review first examines each construct individually - competence as a continuum from disposition to performance (Blömeke et al., 2015), autonomy as perceived and structural control over classroom, school, and professional decisions (Pearson & Hall, 1993; Wermke & Salokangas, 2021), and accountability as the mechanisms by which teachers are held answerable for process and outcomes (Ordofa & Asgedom, 2022; Sahlberg, 2010) - before turning to three pairwise relationships: competence and autonomy, competence and accountability, and autonomy and accountability.

The synthesis reveals a recurring pattern across the literature: autonomy and accountability are neither opposed nor simply complementary but exist in a conditional, context-dependent relationship in which each can either enable or constrain the development of professional competence, depending on the trust, evaluative purpose, and decision-making structures within which they operate.

Building on this synthesis, the paper proposes an integrative conceptual framework in which teacher professional competence is positioned as the emergent outcome of a negotiated balance between autonomy and accountability, rather than as an independent teacher attribute.

Four figures and four tables - a PRISMA flow diagram, a competence-continuum model, an autonomy-accountability quadrant matrix, and a nexus framework diagram, alongside an inclusion/exclusion criteria table, a definitional summary table, a comparative synthesis table, and an evidence table of key studies - are used to structure and illustrate the review. The paper concludes with implications for school-level policy, teacher evaluation design, and teacher professional development, and outlines an agenda for future empirical research.

Keywords: teacher professional competence; teacher autonomy; teacher accountability; school education; systematic review; conceptual framework; teacher professionalism.

I. INTRODUCTION

School education systems worldwide are asked to trust teachers as professionals while holding them accountable as public employees.

This dual expectation is most visible in the ongoing policy tension between teacher autonomy, understood as teachers' perceived and structural control over their classroom, school, and professional decisions (Pearson & Hall, 1993), and teacher accountability, understood as the mechanisms, from inspection to standardised testing to performance-based evaluation, through which teachers are held answerable for their processes and outcomes (Ordofa & Asgedom, 2022; Sahlberg, 2010).

Both constructs are, in turn, frequently invoked as levers for improving a third construct, teacher professional competence, yet the three are rarely brought into a single theoretical frame.

Autonomy research treats competence largely as an antecedent or a beneficiary of decision-making latitude (Anuk & Katıtaş, 2025); accountability research treats competence largely as a target to be measured and improved through evaluation (Liebowitz, 2021); and competence research itself, most influentially formalised by Blömeke et al. (2015) as a continuum running from dispositions to situation-specific skills to observable performance, treats autonomy and accountability as largely external contextual conditions rather than as constitutive of competence itself.

This fragmentation matters because policy debates repeatedly stage autonomy and accountability as opposites, autonomy as trust in professional judgment, accountability as control over professional judgment, without asking what this apparent opposition does to the development of the competence both are meant to serve.

Wermke and Salokangas (2021) call the resulting dynamic the autonomy paradox: teachers granted more decision-making latitude often report feeling more, not less, constrained, because expanded autonomy also expands the scope of what they can be held accountable for. Large-scale international survey evidence corroborates the underlying imbalance: teachers report considerable classroom-level autonomy but comparatively little say in school-wide policy decisions (OECD, 2020), suggesting that the autonomy teachers actually experience is unevenly distributed across the levels at which accountability operates. This paper argues that resolving this paradox requires reconceptualizing teacher professional competence itself, not as an independent teacher attribute that autonomy and accountability merely act upon, but as an emergent property of how autonomy and accountability are jointly configured in a given school context.

To build this argument, the paper conducts a systematic literature review structured in two stages. The first stage reviews teacher professional competence, teacher autonomy, and teacher accountability individually within the school-teacher context, establishing definitional and theoretical clarity for each construct. The second stage reviews the three possible pairwise relationships among them, competence versus autonomy, competence versus accountability, and autonomy versus accountability, synthesizing what the literature says about how each pair interacts. The paper then integrates these six bodies of literature into a single conceptual framework, positioned at the nexus of the three constructs. It closes with a discussion, conclusion, and recommendations for school-level policy, evaluation design, and future research.

II. METHODOLOGY

This review follows a systematic, PRISMA-informed search and synthesis strategy (Page et al., 2021, as widely adopted in education systematic reviews; see also Ordofa & Asgedom, 2022, for a comparable application to school accountability). Search terms combined the three focal constructs with school-teacher qualifiers, for example “teacher autonomy” AND “school”, “teacher accountability” AND “school”, “teacher competence” AND “school”, together with the paired terms “autonomy AND accountability”, “competence AND autonomy”, and “competence AND accountability”, searched across Scopus, Web of Science, ERIC, and Google Scholar. Foundational construct-defining and measurement studies were included regardless of publication date given their canonical status (e.g., Pearson & Hall, 1993; Ryan & Deci, 2000; Bandura, 1997), while empirical and policy studies on autonomy and accountability were prioritised from 2009 onward to capture the post-accountability-reform literature, following comparable date rationales used in recent systematic reviews of school accountability (Ordofa & Asgedom, 2022) and teacher autonomy under performance-based regimes (Parcerisa et al., 2022). Figure 1 depicts the resulting search and screening process.

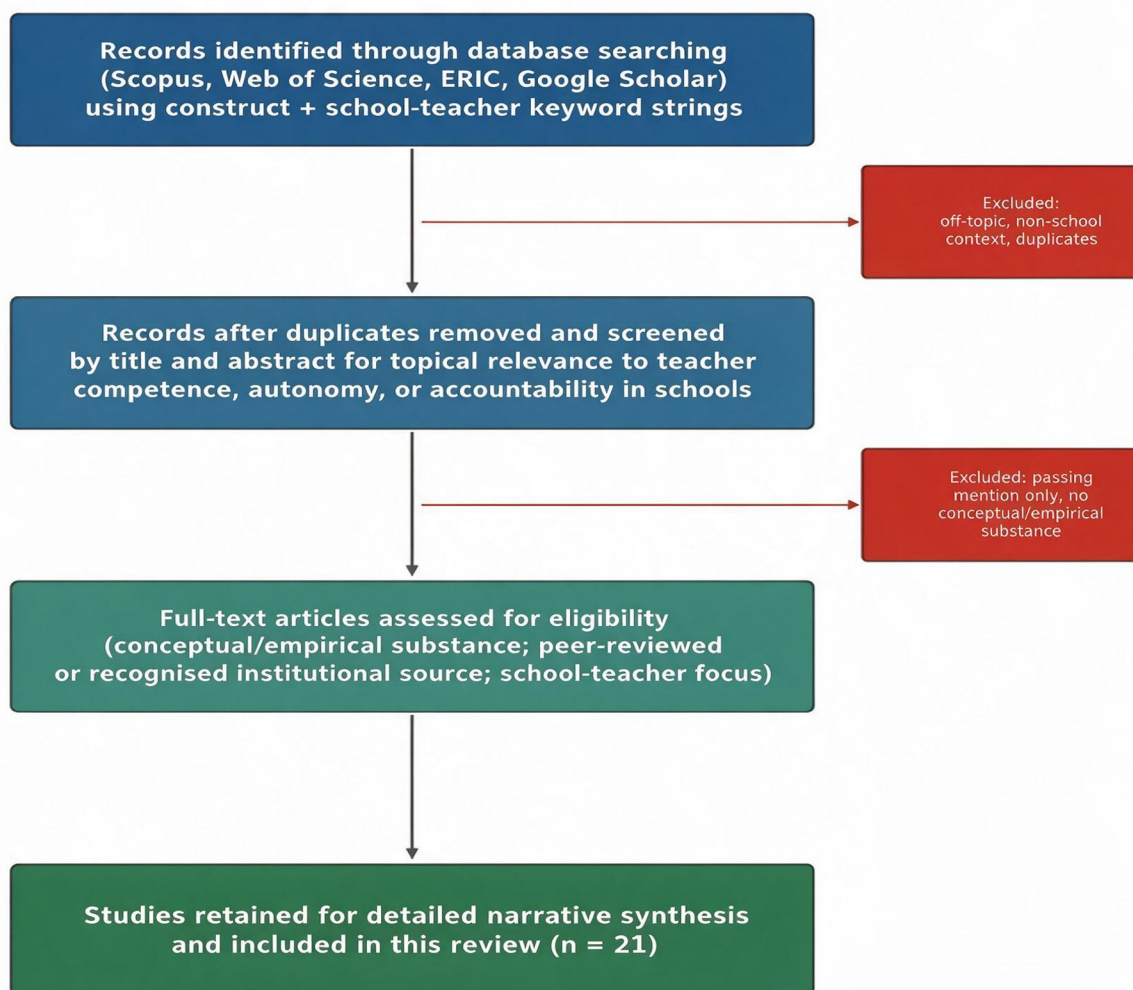


Figure 1. PRISMA-informed flow diagram of the search, screening, and inclusion process used in this review.

Table 1 summarises the inclusion and exclusion criteria applied at each screening stage. Screening proceeded in three stages consistent with standard systematic-review practice: title and abstract screening for topical relevance to teacher competence, autonomy, or accountability in school settings; full-text screening for conceptual or empirical substance rather than passing mention; and a final synthesis stage in which recurring, most-cited, and most conceptually load-bearing studies were retained for detailed narrative synthesis. Authors replicating or extending this review should report their own PRISMA flow counts (records identified, screened, excluded, and included) based on the specific databases and date range used at the time of the search, since these figures are database- and date-dependent and are therefore not fixed a priori by this methodology section; the count reported in Figure 1 (n = 21) reflects the studies retained for detailed narrative synthesis and citation in this particular review.

Table 1
Inclusion and Exclusion Criteria Applied During Screening

Criterion	Inclusion	Exclusion
Focus	Teacher competence, autonomy, or accountability in school (K–12) contexts	Higher-education-only or non-teaching professional contexts without transferable conceptual relevance
Source type	Peer-reviewed journal articles, academic books, systematic reviews, recognized institutional/policy reports.	Blogs, non-peer-reviewed opinion pieces, conference abstracts without accessible full text
Publication date	Foundational/construct-defining works (any date); empirical/policy works generally from 2009 onward.	Superseded empirical studies where a more recent, more rigorous replication or review exists
Language	English-language publications	Non-English publications without an available English translation
Content depth	Conceptual or empirical substance directly addressing at least one focal construct.	Passing mention only, without conceptual or empirical development

Because the paper's objective is conceptual integration across three literatures rather than effect-size estimation, the synthesis method is narrative and thematic rather than meta-analytic. Extracted studies were coded against three questions for each construct (how is it defined, how is it structured or dimensionalized, and what does it interact with) and, for the pairwise sections, against the nature of the interaction reported (positive/enabling, negative/constraining, or conditional/context-dependent). This coding directly structures Sections 3 and 4 below and underpins the comparative synthesis presented in Table 3 and the conceptual framework presented in Figure 4.

III. REVIEWING THE INDIVIDUAL VARIABLES IN THE SCHOOL-TEACHER CONTEXT

Table 2 provides a definitional and dimensional overview of the three focal constructs before each is discussed in detail below.

Table 2
Definitional and Dimensional Summary of the Three Constructs

Construct	Working Definition	Key Dimensions	Foundational Source
Teacher Professional Competence	A continuum running from professional dispositions through situation-specific skills to observable classroom performance	Dispositions (knowledge, beliefs, motivation); situation-specific skills (perception, interpretation, decision-making); performance	Blömeke, Gustafsson, & Shavelson (2015)
Teacher Autonomy	Teachers' perceived and structural control over their work environment and professional decisions	General/classroom autonomy; curricular autonomy; school-level and profession-level autonomy	Pearson & Hall (1993); Paulsrud & Wermke (2020)
Teacher Accountability	Mechanisms and relationships through which teachers are held answerable for professional process and outcomes	Test-based/outcome accountability; professional/collegial accountability; inspection-based accountability	Sahlberg (2010); Ordofa & Asgedom (2022)

A. Teacher Professional Competence

The most influential contemporary account of teacher professional competence is Blömeke et al.'s (2015) continuum model, which reframes competence as a process running from dispositions (professional knowledge, beliefs, motivation) through situation-specific skills, namely perception, interpretation, and decision-making in the classroom, to observable performance, illustrated in Figure 2. This model deliberately dissolves the older dichotomy between competence as a static, testable trait and competence as situated performance, treating both as points on the same continuum rather than as rival definitions. For school teachers specifically, this means that professional competence cannot be adequately captured by knowledge tests alone, nor by classroom observation alone, but requires attention to the cognitive processes, particularly noticing and decision-making under classroom conditions, that mediate between what a teacher knows and what a teacher does. This account resonates with older, related traditions of teacher-quality research: Darling-Hammond's (2000) state-policy review similarly found that teacher qualifications and preparation pathways, essentially disposition-level inputs, were measurably associated with state-level student achievement, while Darling-Hammond et al.'s (2017) synthesis of effective professional development emphasizes that sustained, practice-embedded learning opportunities, not one-off training, are what convert disposition-level knowledge into durable classroom skill.

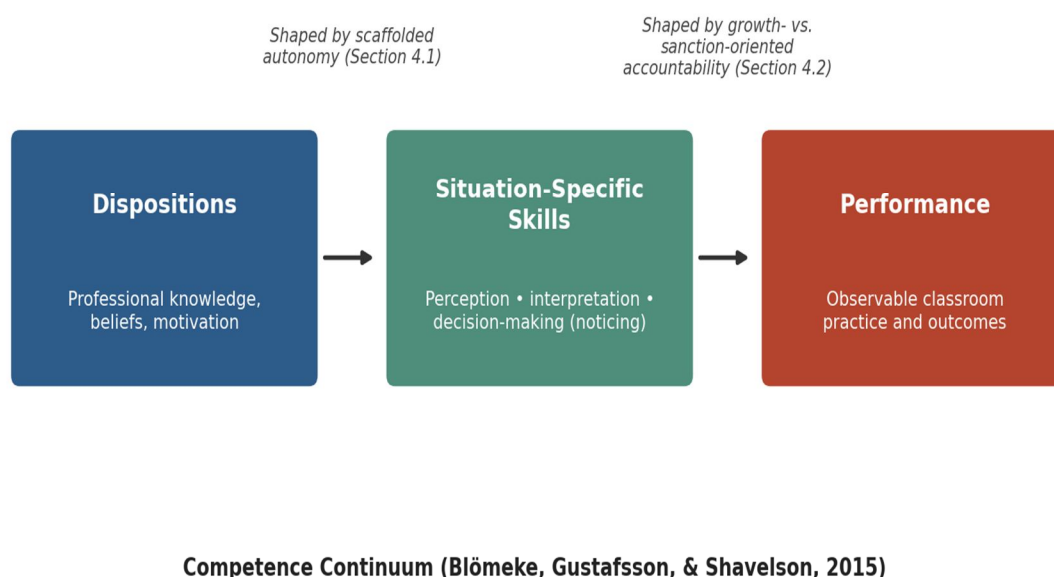


Figure 2. The teacher professional competence continuum, from dispositions to situation-specific skills to performance (adapted from Blömeke, Gustafsson, & Shavelson, 2015).

This dispositions-to-performance structure has direct implications for how competence should be studied alongside autonomy and accountability. If competence is partly constituted by situation-specific decision-making, then the conditions under which teachers are permitted, or required, to exercise decision-making, in other words, their autonomy, are not merely external to competence but are part of the environment in which the skill component of competence is enacted and observed. Equally, if performance is the validity criterion for competence (Blömeke et al., 2015), then accountability mechanisms, which are essentially systematic observations and judgments of performance, are not simply monitoring competence from the outside but are themselves implicated in how performance, and therefore competence, comes to be defined and recognized within a school system. Bandura's (1997) foundational account of self-efficacy adds a further mediating layer here: teachers' belief in their own capability to execute the actions required for a given performance shapes whether disposition-level knowledge is actually converted into situation-specific skill and performance, meaning that competence development is also partly a motivational, not only a cognitive, process.

B. Teacher Autonomy

Teacher autonomy is most commonly defined, following Pearson and Hall's (1993) foundational Teaching Autonomy Scale, as teachers' perceptions of control over their work environment, differentiated into general autonomy, concerning classroom standards of conduct and personal discretion, and curricular autonomy, concerning the selection of content, materials, and instructional sequencing. Subsequent theorizing has elaborated this into a multidimensional construct spanning classroom, school, and profession-level decision-making (Paulsrud & Wermke, 2020; Salokangas et al., 2020), recognizing that a teacher may hold considerable discretion over daily lesson delivery while having little influence over school-wide curricular or assessment policy. This unevenness is corroborated at scale by the OECD's TALIS 2018 survey of 48 education systems, which finds that teachers consistently report strong classroom-level autonomy but comparatively limited voice in school-wide management and policy decisions (OECD, 2020), echoing earlier school-based management theorising that distinguished decentralisation of resource and operational authority to the school level from decentralisation of authority to the individual classroom teacher (Caldwell & Spinks, 1988).

A crucial complication for the school-teacher context is that autonomy does not behave as a simple, linearly beneficial good. Wermke and Salokangas's (2021) comparative European study identifies what they term the autonomy paradox: as teachers are granted more decision-making latitude, they simultaneously become responsible for more decisions and their consequences, which can produce anxiety, self-restriction, and even the active rejection of autonomy rather than its embrace. This finding cautions against treating autonomy as an unqualified marker of professional trust; its effects depend heavily on whether it is accompanied by adequate support, collegial structures, and a non-punitive accountability climate (Wermke & Salokangas, 2021).

C. Teacher Accountability

Teacher accountability refers to the mechanisms, structures, and relationships through which teachers are held answerable for their professional conduct and its outcomes, most commonly student learning outcomes measured through standardized testing or classroom-embedded assessment (Ordofa & Asgedom, 2022). Sahlberg (2010) distinguishes test-based accountability, which uses standardised outcome measures as the primary evidence of teacher and school effectiveness, from more relational or professional forms of accountability grounded in collegial review, inspection, and trust-based systems, arguing that the international spread of high-stakes, test-based accountability, part of what he terms the Global Education Reform Movement, has occurred without strong evidence that it reliably improves educational quality.

A systematic review by Ordofa and Asgedom (2022) similarly finds that school accountability is positively associated with learning outcomes only when it is context-sensitive and integrated with, rather than substituted for, professional judgment, and notes a discernible shift in the literature from school-level to teacher-level accountability over the past decade, a shift with direct implications for how individual teachers experience answerability. In parallel, Ingersoll (2003, 2007) frames accountability and control as two sides of the same organisational relationship: schools that hold teachers accountable for outcomes while denying them meaningful control over the conditions that produce those outcomes place teachers in what he calls a position of "short on power, long on responsibility" (Ingersoll, 2007), a structural mismatch that foreshadows the tensions explored in Section 4.3.

Having established working definitions of the three constructs individually, Section 4 turns to how each pair of constructs interacts, drawing on the pairwise-coded literature described in Section 2.

IV. PAIRWISE RELATIONSHIPS: A COMPARATIVE REVIEW

A. Teacher Professional Competence versus Teacher Autonomy

The clearest theoretical bridge between competence and autonomy is Self-Determination Theory (SDT), which identifies autonomy, competence, and relatedness as three basic psychological needs whose satisfaction underpins intrinsic motivation, sustained engagement, and well-being in any domain of activity, including teaching (Ryan & Deci, 2000). Within SDT, autonomy and competence are not independent variables that happen to co-occur; they are mutually reinforcing components of the same motivational system, such that teachers who experience genuine self-direction in their work are also more likely to experience, and further develop, a sense of professional competence, and vice versa (Anuk & Katıtaş, 2025). Anuk and Katıtaş's (2025) qualitative study of professional autonomy in teacher development found that teachers who perceived themselves as autonomous agents were more likely to report a strengthened sense of competence and professional identity, consistent with SDT's prediction that autonomy-supportive conditions foster competence rather than merely permitting its expression. This aligns with Bandura's (1997) self-efficacy theory: autonomous mastery experiences, successfully exercising discretion and seeing the results, are among the strongest sources of self-efficacy belief, which in turn feeds forward into further competence development.

However, the relationship is conditional rather than automatic. Wermke and Salokangas's (2021) autonomy paradox suggests that autonomy granted without adequate scaffolding, feedback, or collegial support can generate the opposite effect: teachers who feel under-prepared for the decisions autonomy requires may experience heightened anxiety and self-restriction rather than growing competence. This suggests that the competence-enhancing potential of autonomy depends on whether it is accompanied by structures, such as mentoring, collaborative planning, and constructive feedback, that convert decision-making latitude into a genuine developmental opportunity rather than an unsupported burden, a point reinforced by Darling-Hammond et al.'s (2017) finding that sustained, collaborative professional development, rather than isolated autonomy, most reliably builds instructional skill.

B. Teacher Professional Competence versus Teacher Accountability

The relationship between competence and accountability is best captured by Liebowitz's (2021) modeling of teacher evaluation policy, which explicitly frames evaluation, the primary mechanism through which accountability is operationalized, as serving two potentially competing aims: accountability (sorting, sanctioning, or rewarding teachers based on measured performance) and growth (using evaluation evidence to build teacher skill, that is, competence). Liebowitz's (2021) central finding is that policies that pursue both aims simultaneously through a single evaluation instrument often underperform policies that treat accountability and growth as substitutes, applying accountability consequences only below a defined performance threshold while reserving instructional support and developmental feedback for most teachers above it. This directly challenges the common policy assumption that stronger accountability produces stronger competence simply by increasing pressure to perform.

Complementary evidence comes from the broader accountability literature: Sahlberg (2010) argues that the evidence for test-based accountability reliably improving teaching quality remains contested, while Ordofa and Asgedom's (2022) systematic review finds that accountability's relationship with learning outcomes, the ultimate downstream indicator of teacher competence, is positive only when accountability data are actually used formatively, for example through data-based instructional decision-making and classroom assessment, rather than punitively. Darling-Hammond et al.'s (2017) broader argument for comprehensive teacher evaluation systems similarly holds that evaluation builds competence only when paired with expert, subject-specific feedback rather than functioning as a compliance exercise. Taken together, this pairwise literature suggests that accountability can support competence development, but only under specific design conditions, namely a genuine growth orientation, formative use of evidence, and a credible separation between developmental feedback and high-stakes sanction, and that accountability systems lacking these conditions risk narrowing teaching practice toward measurable, testable behaviours rather than the fuller, situated competence described by Blömeke et al. (2015).

C. Teacher Autonomy versus Teacher Accountability

The autonomy-accountability relationship is the most extensively theorized of the three pairs and is also the one most consistently described as a tension rather than a simple trade-off. Parcerisa et al.'s (2022) systematic review of teaching-profession regulatory models finds that performance-based accountability (PBA) interacts with pre-existing autonomy arrangements in ways that vary substantially by national regulatory context: in some systems PBA is layered onto, and partially erodes, established professional autonomy, while in others, such as Norway, official policy has deliberately privileged extended professional autonomy and responsibility even as PBA instruments spread internationally. This cross-national variation indicates that the autonomy-accountability relationship is not fixed by the presence of accountability mechanisms alone, but is shaped by the broader regulatory and trust culture within which those mechanisms are embedded.

At the classroom level, Wills and Sandholtz's (2009) case study coins the term constrained professionalism to describe teachers who retain formal autonomy over instructional decisions but whose actual decision space is substantially narrowed by the anticipatory pressure of test-based accountability, producing a subtler erosion of professional discretion than outright removal of autonomy would. Ingersoll (2003, 2007) frames this dynamic organisationally, arguing that schools frequently hold teachers accountable for outcomes while denying them commensurate control over staffing, scheduling, discipline, and curricular decisions that shape those outcomes, a structural imbalance he argues undermines both teacher effectiveness and teacher retention. Finally, Wermke and Salokangas's (2021) autonomy paradox offers the most direct theoretical account of why the two constructs can become mutually reinforcing constraints rather than simple opposites: because expanded autonomy also expands the scope of matters for which a teacher can be held accountable, autonomy and accountability can rise together, with the combination producing not liberation but intensified professional risk and self-restriction, unless it is accompanied by high institutional trust (Parcerisa et al., 2022; Wermke & Salokangas, 2021).

Figure 3 organizes this pairwise literature into a quadrant matrix crossing the autonomy dimension with the growth-versus-sanction orientation of accountability, showing how the same underlying constructs can combine to produce qualitatively different professional experiences, from constrained professionalism at low autonomy and sanction-oriented accountability, to what this paper terms a professional trust or competence-developmental zone at high autonomy paired with growth-oriented, formatively used accountability.

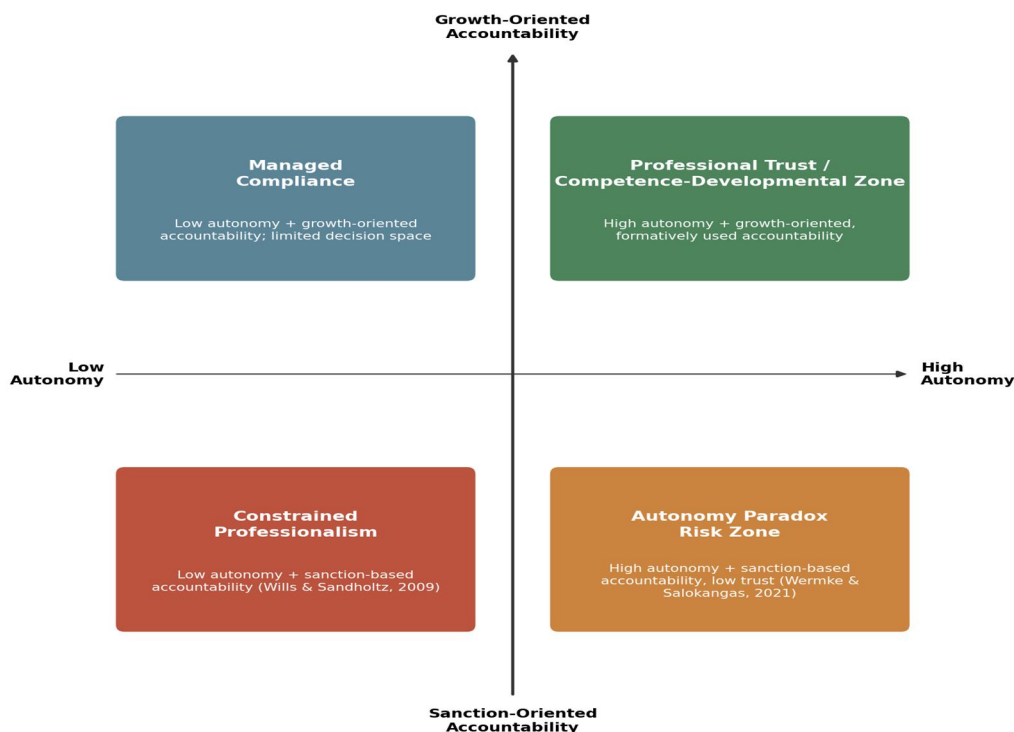


Figure 3. Quadrant matrix crossing teacher autonomy with the growth- versus sanction-orientation of accountability, showing four resulting professional configurations

Table 3
Comparative Synthesis of the Three Pairwise Relationships

Relationship	Nature of Interaction	Key Conditioning Factor	Anchor Studies
Competence ↔ Autonomy	Conditional / mutually reinforcing when supported	Presence of scaffolding, mentoring, and feedback alongside decision-making latitude	Ryan & Deci (2000); Bandura (1997); Anuk & Katıtaş (2025); Wermke & Salokangas (2021)
Competence ↔ Accountability	Conditional / depends on evaluation design.	Whether evaluation is designed as growth-oriented, sanction-oriented, or both simultaneously	Liebowitz (2021); Sahlberg (2010); Ordofa & Asgedom (2022); Darling-Hammond et al. (2017)
Autonomy ↔ Accountability	Tension, but not fixed opposition; context-dependent	National regulatory culture and institutional trust	Parcerisa et al. (2022); Wills & Sandholtz (2009); Ingersoll (2003, 2007); Wermke & Salokangas (2021)

Table 4
Evidence Table: Key Studies Reviewed, by Focal Construct(s)

Study	Focal Construct(s)	Study Type	Key Finding
Blömeke et al. (2015)	Competence	Theoretical/conceptual model	Competence is a continuum from dispositions to performance, not a fixed dichotomy.
Pearson & Hall (1993).	Autonomy	Scale development/validation	Established general and curricular autonomy as the two core empirical dimensions of teacher autonomy
OECD (2020)	Autonomy	International survey (TALIS 2018, 48 systems)	Teachers report strong classroom autonomy but limited voice in school-wide policy decisions.
Ordofa & Asgedom (2022).	Accountability	Systematic literature review	Accountability is positively related to learning outcomes only when it is context-sensitive and used formatively.
Sahlberg (2010)	Accountability	Critical policy analysis	Evidence that test-based accountability reliably improves teaching quality remains contested.
Ryan & Deci (2000).	Competence × Autonomy	Theoretical (Self-Determination Theory)	Autonomy, competence, and relatedness are interdependent basic psychological needs.
Bandura (1997)	Competence × Autonomy	Theoretical (Self-Efficacy Theory)	Mastery experiences under autonomous action are a primary source of self-efficacy and competence growth.
Liebowitz (2021)	Competence × Accountability	Policy simulation / economic modeling	Separating accountability and growth aims in evaluation outperforms blended designs.
Darling-Hammond et al. (2017).	Competence × Accountability	Research synthesis	Sustained, practice-embedded professional development builds skill more reliably than compliance-based evaluation
Wills & Sandholtz (2009).	Autonomy × Accountability	Qualitative case study	Coined “constrained professionalism”: formal autonomy narrowed by anticipatory accountability pressure
Parcerisa et al. (2022).	Autonomy × Accountability	Systematic review (regulatory models)	Effects of performance-based accountability on autonomy vary substantially by national regulatory culture.
Wermke & Salokangas (2021).	Autonomy × Accountability	Comparative mixed-methods (4 countries)	Identified the “autonomy paradox”: expanded autonomy can increase anxiety absent institutional trust

V. SYNTHESIS AND PROPOSED CONCEPTUAL FRAMEWORK

Three patterns recur across the six bodies of literature reviewed above and summarised in Tables 3 and 4. First, none of the three pairwise relationships is fixed; each is conditional on design and context, whether that is the presence of developmental scaffolding (competence-autonomy), the growth-versus-sanction orientation of evaluation (competence-accountability), or the surrounding regulatory and trust culture (autonomy-accountability).

Second, autonomy and accountability are not opposites to be traded off against one another but are structurally entangled: expanding one predictably expands the scope and stakes of the other, as the autonomy paradox demonstrates (Wermke & Salokangas, 2021). Third, and most importantly for this paper's central argument, teacher professional competence does not sit outside this entanglement as a neutral outcome to be measured; because competence is itself partly constituted by situation-specific decision-making and performance (Blömeke et al., 2015), the conditions of autonomy and accountability under which that decision-making and performance occur are part of what shapes competence, not merely external factors acting upon it.

This synthesis motivates a reconceptualization of teacher professional competence: rather than treating competence as an individual teacher attribute that autonomy and accountability separately influence, this paper proposes that competence should be understood as an emergent, negotiated property of the specific configuration of autonomy and accountability within which a teacher works. Figure 4 depicts this reconceptualization. Teacher professional competence sits at the centre of the framework, not as a fixed input but as the outcome of two conditioning relationships, competence-autonomy interaction governed by whether autonomy is scaffolded (informed by SDT's competence-need satisfaction; Ryan & Deci, 2000) and competence-accountability interaction governed by whether evaluation is growth- or sanction-oriented (Liebowitz, 2021), while autonomy and accountability themselves interact through the autonomy paradox and constrained-professionalism dynamics identified above (Wermke & Salokangas, 2021; Wills & Sandholtz, 2009).

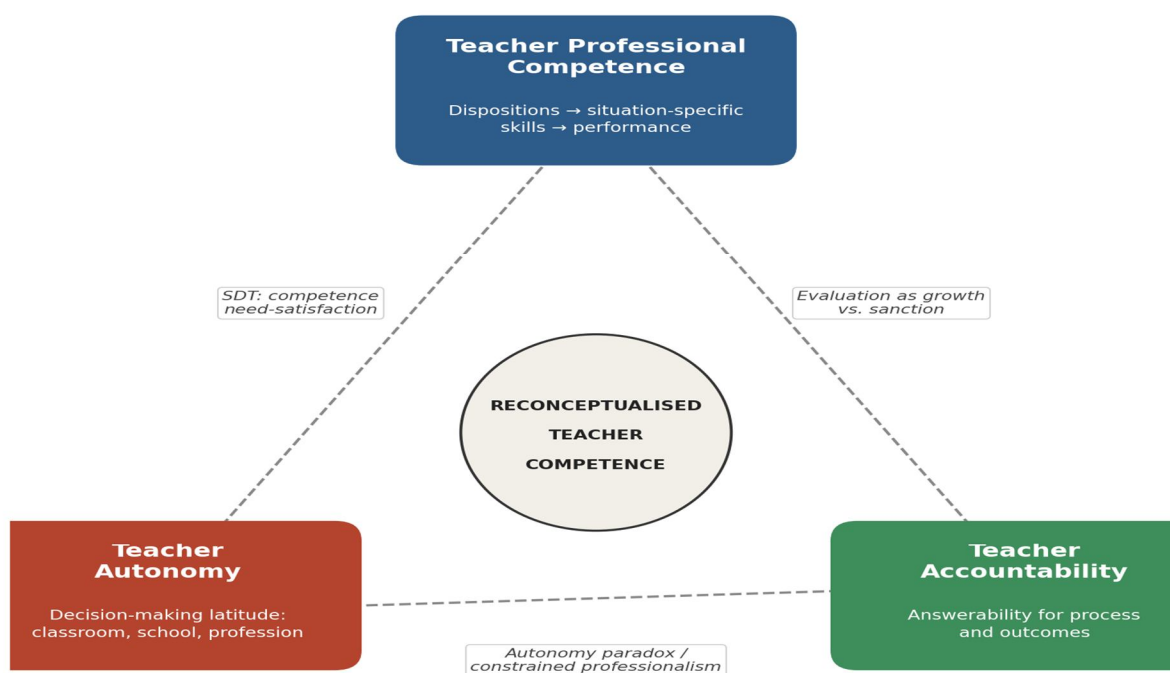


Figure 4. Proposed nexus framework reconceptualizing teacher professional competence as the emergent outcome of the interaction between teacher autonomy and teacher accountability

A practical implication of this framework is that school leaders and policymakers cannot optimize teacher competence by maximizing autonomy or accountability in isolation, nor by treating them as a simple dial to be balanced at some fixed midpoint. Instead, the framework implies that competence development requires attention to the quality of the interaction, specifically, whether autonomy is scaffolded rather than merely granted, and whether accountability is growth-oriented rather than purely sanction-oriented, since both conditioning factors determine whether the autonomy-accountability relationship functions as a developmental engine (the professional trust zone in Figure 3) or as a source of constrained professionalism.

VI. IMPLICATIONS FOR SCHOOL EDUCATION

Three implications follow for school-level policy and practice. First, teacher evaluation systems should be explicitly designed, and communicated to teachers, as serving either a growth function or an accountability function for any given data source, rather than blending both purposes within a single high-stakes instrument, consistent with Liebowitz's (2021) finding that separating these aims, applying sanctions only below a defined threshold while reserving developmental feedback for the majority of teachers, outperforms policies that treat the two aims as fully complementary. Second, school leaders extending autonomy to teachers, for example over curriculum sequencing, assessment design, or pedagogical method, should pair that autonomy with scaffolding structures such as mentoring, collaborative planning time, and low-stakes feedback, since autonomy without support risks triggering the autonomy paradox rather than competence growth (Wermke & Salokangas, 2021). Third, accountability systems should build in mechanisms for formative, data-based instructional decision-making rather than relying solely on summative, high-stakes measures, in line with evidence that accountability supports learning outcomes primarily when its data are used developmentally rather than punitively (Ordofa & Asgedom, 2022).

At a systems level, the cross-national variation documented by Parcerisa et al. (2022) suggests that the same accountability instrument can have different effects on autonomy and, by extension, on competence, depending on the surrounding regulatory culture and institutional trust. This implies that policy transfer of accountability instruments across national or state contexts cannot assume equivalent effects on teacher competence unless the receiving context's trust and autonomy structures are also considered, a caution reinforced by the international variation in classroom-versus-school-level autonomy documented in TALIS (OECD, 2020).

VII. CONCLUSION

This paper set out to answer a question left largely implicit in prior research: what happens to teacher professional competence when it is examined not as an independent variable but as a construct produced at the intersection of teacher autonomy and teacher accountability? The systematic review of both the individual constructs and their three pairwise relationships shows that competence, autonomy, and accountability are conceptually and empirically entangled rather than separable. Competence is partly constituted by the situation-specific decision-making that autonomy governs and the performance that accountability measures (Blömeke et al., 2015); autonomy and accountability, in turn, expand and contract together rather than trading off cleanly against one another (Wermke & Salokangas, 2021).

The Reconceptualized Nexus Framework proposed in this paper repositions teacher professional competence as an emergent outcome of how autonomy and accountability are jointly configured, rather than as a fixed teacher attribute that these two forces act upon separately. This reframing carries a clear practical corollary: efforts to raise teacher competence through accountability alone, or through autonomy alone, are likely to be incomplete, and in some conditions counterproductive, because they treat as independent what the literature reviewed here shows to be interdependent. Future research, discussed further below, is needed to test this framework empirically within specific school systems.

VIII. RECOMMENDATIONS

- 1) Redesign teacher evaluation around a dual-track model. School systems should separate the growth and accountability functions of teacher evaluation into distinct instruments or distinct data uses, applying high-stakes consequences only for a clearly defined low-performance threshold while reserving formative, developmental feedback for the broader teaching workforce (Liebowitz, 2021).
- 2) Pair autonomy grants with structured scaffolding. Wherever school leaders extend curricular, pedagogical, or assessment autonomy to teachers, they should pair it with mentoring, collaborative planning structures, and low-stakes feedback loops to prevent the autonomy paradox from converting decision-making latitude into anxiety or self-restriction (Wermke & Salokangas, 2021).
- 3) Build formative-use capacity into accountability systems. Accountability data, whether from standardized assessment, classroom observation, or inspection, should be explicitly structured for data-based instructional decision-making at the teacher and school level, not solely for external reporting, since formative use is associated with more positive effects on learning outcomes (Ordofa & Asgedom, 2022).
- 4) Attend to institutional trust as a policy variable. Because the same accountability instrument produces different effects on autonomy and competence depending on the surrounding trust culture, education authorities should treat institutional and professional trust as an explicit design variable in accountability policy, not an incidental by-product (Parcerisa et al., 2022).

- 5) Train school leaders to recognize constrained professionalism. School leadership preparation should explicitly address how anticipatory accountability pressure can narrow teachers' use of formally retained autonomy, so leaders can identify and counteract constrained professionalism before it affects instructional quality (Wills & Sandholtz, 2009).
- 6) Align staffing and decision-making control with accountability demands. Where teachers are held accountable for outcomes, school systems should ensure they hold commensurate control over the staffing, scheduling, and curricular decisions that shape those outcomes, addressing the structural mismatch identified by Ingersoll (2003, 2007).
- 7) Invest in sustained, practice-embedded professional development. Because self-efficacy and skill are built through mastery experience rather than one-off training (Bandura, 1997; Darling-Hammond et al., 2017), competence-building investment should prioritize ongoing, collaborative, classroom-embedded learning over episodic workshops.

IX. SUGGESTIONS FOR FUTURE RESEARCH

Future research should pursue at least four directions. First, the Reconceptualized Nexus Framework proposed here is conceptual. It should be tested empirically, for example through structural equation modeling of survey data capturing teachers' perceived autonomy, perceived accountability orientation (growth versus sanction), and multiple competence indicators, to test whether the framework's proposed conditioning relationships hold statistically. Second, longitudinal and mixed-methods designs are needed to establish causal direction: does scaffolded autonomy produce competence growth, or does existing competence enable teachers to use autonomy more effectively when it is granted? Third, comparative cross-national research building on Parcerisa et al.'s (2022) regulatory-model approach could examine which specific trust and governance conditions convert accountability from a constraining force into a competence-supporting one. Fourth, research is needed within specific school-level contexts, including varying socioeconomic settings and varying national accountability regimes, since the reviewed literature suggests that the same autonomy-accountability configuration is unlikely to produce identical competence outcomes across contexts. Fifth, the quadrant matrix proposed in Figure 3 offers a testable typology that future survey research could use to classify schools or systems and examine whether teachers in the professional trust/competence-developmental quadrant do, in fact, show measurably higher competence growth over time than those in the other three quadrants.

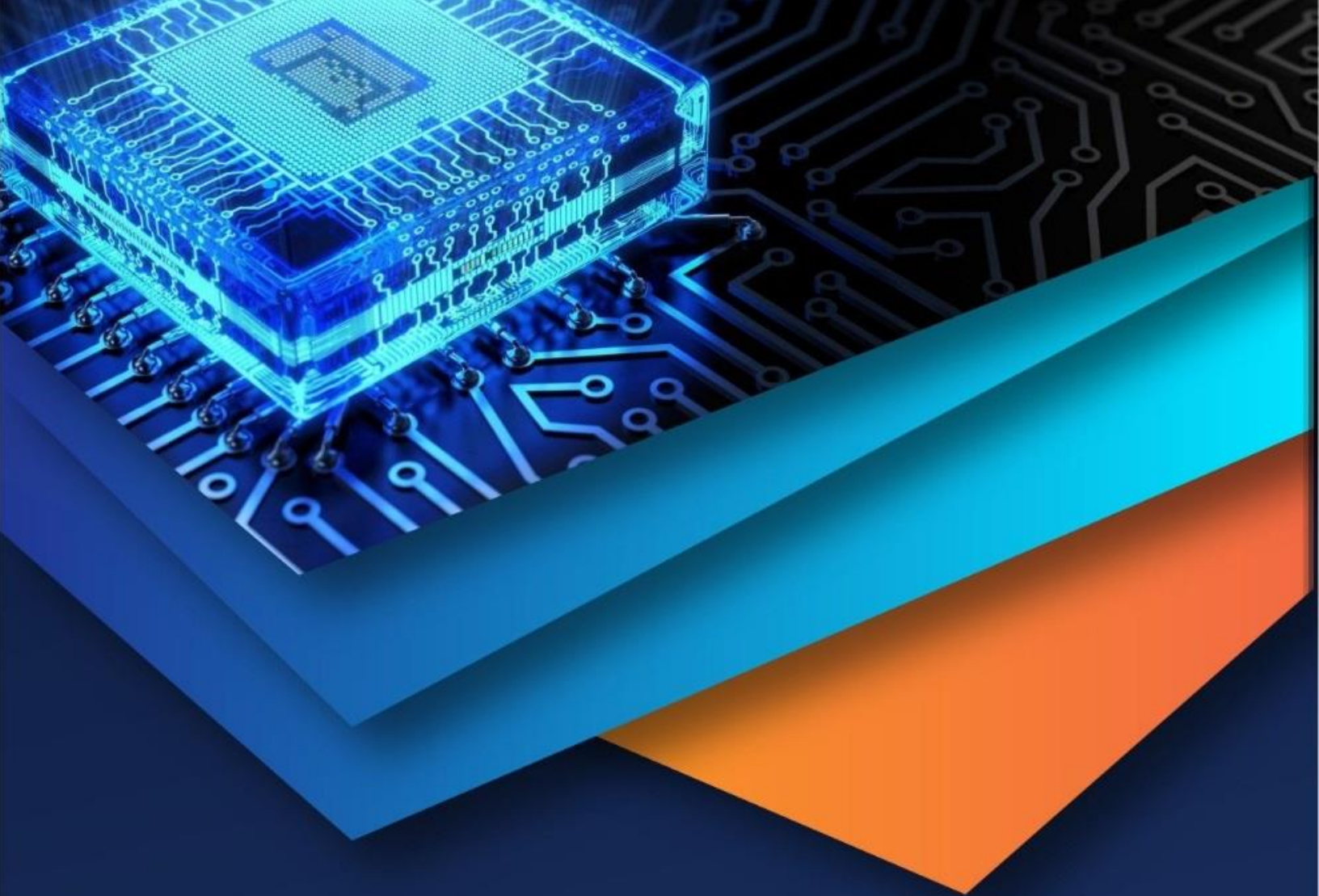
X. LIMITATIONS

This review has several limitations. It is a narrative, thematic systematic review rather than a meta-analysis, and therefore synthesizes patterns rather than pooled effect sizes; the proposed framework should accordingly be read as a theoretically grounded heuristic requiring empirical testing rather than an established causal model. The search strategy prioritized English-language, peer-reviewed sources, which may under-represent context-specific literature published in other languages or in grey literature such as ministry reports. The evidence table in Table 4 and the comparative synthesis in Table 3 represent the studies judged most conceptually load-bearing during screening rather than an exhaustive census of every study identified, consistent with standard narrative-synthesis practice but a source of selection judgment. Finally, because the underlying literature on autonomy and accountability draws substantially from North American and European school systems, the framework's applicability to other national and regional contexts, including different regulatory traditions and levels of institutional trust, requires direct empirical investigation before broader claims of generalisability can be made.

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