



## Non-linguistic teaching behaviors in English language teaching: A systematic mapping review of measures and reported outcomes

**ABSTRACT** - This systematic mapping review synthesizes 44 empirical studies published between 2010 and 2025 to examine how nonlinguistic teaching behaviors—increasingly relied upon in English language teaching (ELT) to guide attention, support meaning-making, and shape classroom interaction—are defined, operationalized, and linked to reported outcomes in ELT settings. Seven behavioral categories emerge from the evidence base: kinesics, oculosics, proxemics, haptics, paralinguistics, chronemics, and appearance or artifacts. These behaviors are measured using observation-based, perception-based, research-driven, and technology-assisted methods, resulting in a multimodal corpus that nonetheless exhibits a strong weighting toward kinesic features. Reported associations cluster across three outcome domains: classroom processes, student engagement, and perceived teacher effectiveness. However, outcome labels are frequently broad, and measurement granularity varies considerably, limiting analytical precision and cross-study comparability. The review identifies significant gaps in contextual coverage, construct alignment, and methodological consistency, indicating a field that is empirically active yet uneven in its development. To advance both theoretical rigor and instructional relevance, future research should establish clearer construct definitions, implement more robust multimodal measurement strategies, and adopt context-sensitive designs capable of elucidating the mechanisms through which nonlinguistic behaviors relate to learning-relevant processes.

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## 1. Introduction

In English language classrooms, much of what teachers communicate is conveyed without words. Language classrooms operate through multimodal communication rather than spoken language alone. Teachers coordinate verbal explanations with gestures, gaze, posture, movement, and vocal qualities to make meaning perceptible, particularly when learners possess limited linguistic resources (Hattie, 2009; Richards & Rodgers, 2014). These non-linguistic code systems regulate interaction, structure attention, and convey affective signals, underscoring why instruction depends on more than speech. Empirical classroom studies demonstrate that teacher gaze and movement guide joint attention and turn-taking, helping to bind lesson episodes into a coherent instructional flow in ELT contexts (Haataja et al., 2021). Collectively, these insights position the teacher's body and voice as essential instructional infrastructure rather than supplementary tools (Burgoon et al., 2022; Hattie, 2009).

Despite their instructional importance, research on nonlinguistic teaching behaviors in ELT remains difficult to synthesize. Many studies isolate single behaviors such as gesture or eye contact instead of examining how multiple channels interact in real classrooms, which obscures the integrated nature of multimodal teaching (Burgoon et al., 2022). Measurement practices also vary widely, ranging from perception based ratings to low inference observation and technology assisted tools, which reduces comparability and conceals how behaviors function jointly (Haataja et al., 2021; Burgoon et al., 2022). ELT scholarship has historically emphasized verbal pedagogy, leaving nonlinguistic conduct under theorized despite its relevance for instructional clarity, participation, and socioemotional climate (Richards & Rodgers, 2014). Outcomes are labeled inconsistently across studies, with terms such as classroom process, engagement, or teacher effectiveness often used without conceptual precision, limiting alignment between constructs and measurements (Witt et al., 2004; Liu, 2021).

Rather than emerging from a single coherent theoretical tradition, research on nonlinguistic teaching behaviors in English language teaching draws selectively on multiple perspectives, including nonverbal communication, multimodal pedagogy, embodied cognition, teacher immediacy, and classroom interaction frameworks. Across these traditions, a shared premise is that teachers' bodily, spatial, and vocal actions shape attention, interactional access, and the socioemotional climate of instruction, particularly when students' linguistic resources are limited. However, these perspectives are often applied implicitly, unevenly, or in isolation, with limited alignment between theoretical claims, behavioral constructs, and measurement practices. This theoretical dispersion contributes to fragmentation in the ELT evidence base and limits the comparability of findings, underscoring the need for a systematic mapping review that can clarify how nonlinguistic behaviors are conceptualized, operationalized, and linked to reported outcomes.

Guided by this rationale, the present systematic mapping review addresses three research questions: (1) Which nonlinguistic teaching behaviors have been examined in ELT, and how are they defined, operationalized, and measured? (2) Which student- or classroom-level outcomes are reported in association with these behaviors? and (3) In which educational levels, countries, and instructional contexts have these behaviors been studied?

Beyond identifying patterns in the literature, this review aims to systematically synthesize how non-linguistic teaching behaviors are conceptualized, operationalized, and measured in English language teaching research. It brings together a range of behavioral constructs alongside diverse measurement approaches and reported outcomes, highlighting both areas of convergence and points of fragmentation. By aligning theoretical perspectives, behavioral definitions, and methodological practices, the review seeks to establish a clearer foundation for conceptual coherence, cumulative knowledge-building, and more rigorous empirical investigation in future research on non-linguistic teacher behaviors in EFL contexts.

## 2. Literature Review

### 2.1. *Theoretical fragmentation and construct ambiguity in ELT research*

Research on nonlinguistic teaching behaviors in ELT draws on multiple theoretical perspectives, yet these frameworks are rarely integrated within a unified analytic model. Instead, studies tend to invoke individual theories to justify selected behavioral variables without clarifying their relationship to overlapping constructs across traditions (Burgoon et al., 2022; Richards & Rodgers, 2014). As a result, similar behaviors; such as gesture, gaze, proximity, or movement; are variably framed as cognitive scaffolds, affective signals, interactional resources, or management tools.

From a sociocultural perspective, nonlinguistic teaching behaviors can be understood as mediational means that support learners' participation and meaning-making within the zone of proximal development (Vygotsky, 1978). Gestures, gaze, and spatial positioning function as semiotic resources that guide attention, structure interaction, and scaffold comprehension, particularly in contexts with limited linguistic resources. However, although this perspective highlights the integrated and contextual nature of communication, empirical studies often operationalize these behaviors as discrete variables, thereby underrepresenting their role as coordinated mediational tools in situated classroom activity.

Furthermore, teacher immediacy research conceptualizes nonlinguistic behaviors as relational cues that shape affective engagement and motivation (Andersen, 1979; Liu, 2021), whereas classroom interaction and management perspectives emphasize the same behaviors as mechanisms for regulating participation structures and instructional flow (Kounin, 1970; Pianta et al., 2008). Classroom discourse further highlights that teaching unfolds through moment-to-moment interaction, in which meaning is co-constructed through both verbal and nonverbal resources (Walsh, 2011). From this view, nonlinguistic behaviors are integral to organizing turn-taking, aligning attention, and sustaining interactional coherence. However, the tendency to isolate individual behavioral channels in empirical studies may overlook how these resources operate sequentially and relationally within unfolding classroom discourse, raising questions about the ecological validity of single-channel analyses.

Moreover, Multimodal and embodied perspectives extend this understanding by conceptualizing teaching as the orchestration of multiple semiotic modes operating simultaneously (Jewitt et al., 2016; Kress, 2010). These perspectives emphasize that meaning is distributed across visual, spatial, and auditory channels rather than conveyed solely through

language. Despite this theoretical emphasis on coordination, empirical implementations often reduce multimodality to measurable but isolated components, suggesting a potential misalignment between theoretical assumptions and methodological practices.

An ecological perspective further frames classroom communication as a dynamic system in which multiple semiotic resources interact over time and across contexts (Van-Lier, 2004). Within this view, nonlinguistic behaviors are context-sensitive and emergent rather than fixed variables. Yet many empirical studies rely on relatively static measurement approaches that may not fully capture the temporal and adaptive nature of multimodal interaction.

These overlapping yet disconnected applications of theory blur the boundaries between observable behavior, inferred mechanism, and reported outcome. As a result, empirical findings across studies become difficult to interpret cumulatively, limiting the development of a coherent explanatory framework for nonlinguistic teaching behaviors in ELT. Consequently, construct definitions across studies are often inconsistent, and theoretical rationales are applied post hoc rather than guiding systematic measurement design. This weak alignment reduces construct validity and makes it difficult to determine whether observed effects are attributable to specific behaviors or to broader, loosely defined constructs.

Teacher immediacy research, for example, often conceptualizes nonlinguistic behaviors as relational cues linked to affective engagement and motivation (Andersen, 1979; Liu, 2021), whereas classroom interaction and management perspectives emphasize the same behaviors as mechanisms for regulating participation structures and instructional flow (Kounin, 1970; Pianta et al., 2008). Embodied and multimodal perspectives further highlight the role of coordinated bodily action in meaning-making (Jewitt et al., 2016). However, across these perspectives, there remains variation in how such behaviors are conceptualized and translated into measurable constructs, raising questions about alignment between theoretical assumptions and empirical operationalization.

Overall, this line of inquiry points to a fundamental disconnect between theoretical richness and empirical practice in research on nonlinguistic teaching behaviors in ELT. Although sociocultural, interactional, multimodal, and ecological perspectives all underscore the integrated and dynamic nature of nonlinguistic communication, these insights are rarely translated into coherent and consistent analytic frameworks. Instead, behaviors such as gesture, gaze, and spatial movement are variously defined and measured across studies, obscuring conceptual boundaries and limiting the comparability of findings. This review therefore highlights the need for closer alignment between theoretical assumptions, construct definitions, and methodological choices. Advancing the field will require research designs that treat nonlinguistic teaching behaviors as coordinated, contextually embedded resources and that systematically connect theoretical perspectives to operationalization and measurement, thereby enabling more robust cumulative knowledge-building in ELT research.

## *2.2. Methodological patterns, empirical tendencies, and identified gaps*

The empirical literature on nonlinguistic teaching behaviors in English language teaching (ELT) reflects considerable variation in methodological orientation, construct specification, and

analytical scope. While this diversity aligns with the interdisciplinary nature of the field, it also introduces challenges for conceptual coherence and cross-study comparability.

A recurring methodological tendency is the predominance of single-channel analyses, in which individual behaviors such as gesture, gaze, or vocal features are examined in isolation. Although this approach allows for more controlled observation and clearer categorization, it does not fully reflect the coordinated nature of multimodal communication emphasized in theoretical frameworks (Jewitt et al., 2016; Kress, 2010). This pattern suggests a potential disconnect between the conceptualization of communication as multimodal and its empirical operationalization as discrete behavioral units.

Measurement approaches further contribute to variability across studies. The literature includes a range of methods, such as observation-based coding, perception-based rating instruments, and technology-assisted techniques including eye tracking and acoustic analysis (Haataja et al., 2021). These approaches are grounded in different assumptions regarding what constitutes observable behavior versus inferred meaning. As a result, operational definitions of nonlinguistic behaviors are not consistently aligned, which may limit the comparability of measurement across contexts (Norris, 2019).

In addition, the distribution of behaviors examined in the literature appears uneven. Visually salient modalities, particularly kinesics, are more frequently represented, whereas less visible dimensions such as chronemics and haptics receive comparatively limited attention. This pattern may reflect differences in methodological accessibility rather than theoretical prioritization, raising questions about the comprehensiveness of the current empirical focus (Burgoon et al., 2022).

Outcome constructs also demonstrate variability in conceptualization. Engagement is often treated as a broad construct despite its multidimensional nature, encompassing behavioral, emotional, and cognitive components (Fredricks et al., 2004; Hiver et al., 2021). Similarly, teacher effectiveness is frequently operationalized as an aggregate category that includes multiple instructional dimensions, such as clarity, rapport, and classroom management (Witt et al., 2004). While such aggregation may facilitate general interpretation, it may also limit analytical precision by reducing the specificity of relationships between behaviors and outcomes.

The literature also reflects increasing attention to multimodality as a conceptual framework for understanding classroom interaction. However, there remains variation in how multimodal interaction is defined and operationalized across studies. In some cases, multimodality is treated as a pedagogical orientation, while in others it is approached as an analytical or computational construct. This variation suggests that multimodality functions as a broadly defined construct rather than a consistently specified analytic category within ELT research (Jewitt et al., 2016).

To sum up, these methodological patterns indicate that the alignment between theoretical frameworks, behavioral constructs, and measurement approaches remains uneven. The literature therefore points to the need for greater conceptual clarity and consistency in how nonlinguistic teaching behaviors are defined, operationalized, and studied across contexts.

### 3. Method

This review employed a systematic mapping methodology to identify, classify, and describe empirical studies on observable nonlinguistic teaching behaviors in language-focused instructional settings. A systematic mapping design was selected because existing research displays substantial variation in construct definitions, measurement grains, and outcome operationalizations, making it unsuitable for immediate meta-analytic synthesis. As Grant and Booth (2009) explain, systematic mapping is appropriate when the aim is to describe an evidence landscape, clarify conceptual boundaries, and organize methodological diversity before quantitative estimation. Following this rationale, the present review prioritizes breadth, taxonomy, and methodological transparency rather than effect size aggregation.

Procedures aligned with PRISMA 2020 reporting standards, with all decisions documented to maintain replicability and interpretive integrity. Although no preregistered protocol was produced, complete search strings, decision logs, and screening outcomes were archived to support transparency. The review also emphasized low-inference behavioral constructs to ensure alignment with classroom observation practices and teacher education relevance. As Page et al. (2021) emphasize, explicit reporting of decisions, inclusion boundaries, and screening processes enhances the interpretability of reviews and strengthens methodological credibility, a principle followed throughout the present study.

#### 3.1. Search strategy

Database searches were conducted in Scopus, Web of Science, ERIC, and EBSCOhost, with supplementary retrieval through Google Scholar. Three keyword clusters were combined using Boolean operators AND and OR. These clusters targeted:

1. Teacher behavior and classroom interaction,
2. Nonlinguistic indicators such as gesture, gaze, proximity, and paralinguistics, and
3. Language-focused or language-mediated instructional contexts including ELT, ESL, EFL, and CLIL.

Search strings were adapted to each database's syntax. All database-specific queries were compiled into an appendix to support transparent replication. This approach balanced coverage with feasibility, allowing systematic identification of relevant studies while enabling backward and forward citation tracking. The search strategy aligns with established methodological guidance encouraging both breadth and targeted retrieval when exploring heterogeneous evidence bases (Grant & Booth, 2009).

#### 3.2. Eligibility criteria

Studies were eligible if they were empirical in design and examined observable, low-verbal nonlinguistic teaching behaviors enacted in formal instructional settings where English functioned either as (a) the explicit target of instruction, such as in EFL, ESL, or general ELT contexts, or (b) the primary medium of content instruction, as in CLIL or EMI settings. Studies conducted in general education or multilingual classrooms where English was neither the

instructional target nor the instructional medium were excluded. Only peer-reviewed journal articles written in English and reporting student- or classroom-level outcomes were included.

The 2010–2025 time window was selected to capture the period in which multimodal, video-based, and technology-assisted classroom observation methods became widely used, ensuring the review reflects current analytic practices. Table 1 summarizes the criteria. These boundaries were set to support comparability of enactment-level data and to ensure that mapped findings are decision-relevant for instruction and observation.

**Table 1**

Inclusion and exclusion criteria.

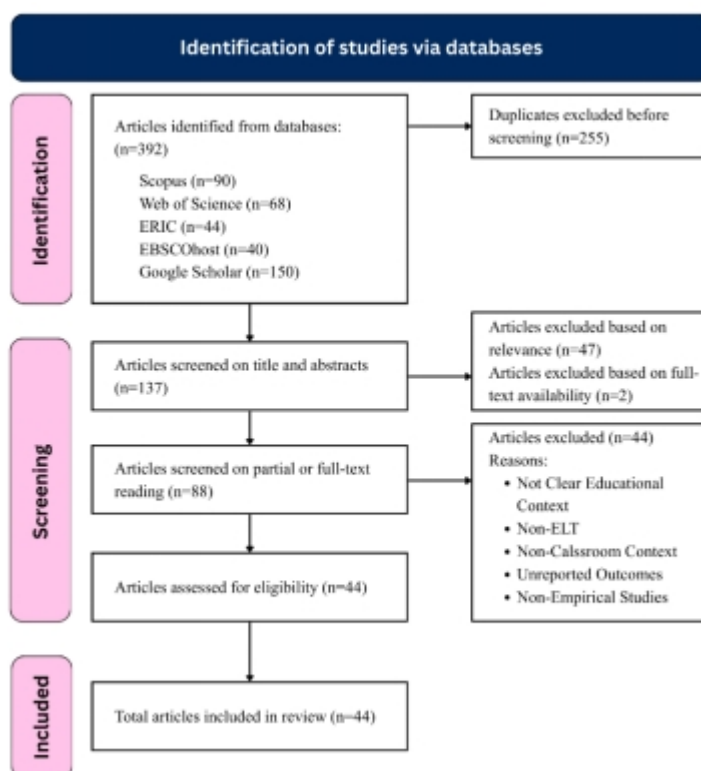
<b>Included</b>	<b>Excluded</b>
<ul style="list-style-type: none"> <li>● Empirical studies using qualitative, quantitative, or mixed methods</li> <li>● Examine observable non-linguistic or low-verbal teaching behaviors</li> <li>● Conducted in instructional settings where English was the target of instruction (EFL/ESL/ELT) or the medium of content instruction (CLIL/EMI)</li> <li>● Report student or classroom outcomes (e.g., engagement, participation, time-on-task), classroom process, and teacher effectiveness</li> <li>● Specify country or educational context</li> <li>● Published in peer-reviewed journals between 2010–2025</li> <li>● Written in English</li> </ul>	<ul style="list-style-type: none"> <li>● Studies focused solely on teacher beliefs, attitudes, or language proficiency</li> <li>● Studies without observable classroom behavioral data</li> <li>● Conceptual papers, theoretical articles, opinion pieces, or editorials</li> <li>● Studies conducted outside formal educational settings</li> </ul>

### 3.3. Screening and selection procedures

Screening and selection followed the PRISMA framework from identification to final inclusion. The database search yielded 392 records: Scopus (n = 90), Web of Science (n = 68), ERIC (n = 44), EBSCOhost (n = 40), and Google Scholar (n = 150). After removing 255 duplicates, 137 unique articles remained for title and abstract screening. At this stage, 47 were excluded for irrelevance and 2 were removed due to lack of full-text availability, leaving 88 articles for partial or full-text review. A further 44 were excluded for reasons such as unclear educational context, non-ELT focus, non-classroom setting, unreported outcomes, or non-empirical design. The final corpus comprised 44 studies that met all inclusion criteria.

As depicted in Figure 1, the identification, screening, and eligibility steps provide a transparent and replicable basis for the review. The workflow ensures that only studies meeting the criteria for observable, low-verbal non-linguistic teaching behaviors in language-focused instructional settings were retained, which strengthens the internal coherence of the corpus by excluding conceptual, belief-only, or non-classroom reports that would weaken comparability

of constructs, measures, and outcomes. In keeping with PRISMA 2020, the documented decisions and explicit exclusion reasons clarify how the final set of 44 studies was reached, supporting analytic integrity and enabling readers to judge the evidential boundaries within which the subsequent coding and synthesis proceed.



**Figure 1.** PRISMA diagram outlining the stages of database searching, record screening, and final study inclusion

### 3.4. Coding and analysis procedures

A structured coding strategy was developed to classify nonlinguistic behaviors, measurement practices, and outcome types. The taxonomy drew on established nonverbal communication frameworks that distinguish among visual, spatial, and vocal modalities. Nonlinguistic behaviors were categorized into seven major codes:

- Kinesics, including gestures and facial expressions;
- Oculistics, including gaze direction and fixation;
- Proxemics, including spatial distance and movement patterns;
- Haptics, including touch types;
- Paralinguistics, including tone, pitch, rhythm, and vocal variability;
- Chronemics, including timing and pacing;
- Appearance and artefacts, including dress, physical presentation, and material arrangement.

These categories draw from Burgoon et al. (2022), Hall (1966), and Trager (1958), who outline distinct functions and analytical boundaries for each modality. Measurement approaches were coded into four major types: observation-based, technology-assisted, perception-based, and

instrument-driven tools, including established scales such as NISO and TeNOI (Wilson & Locker, 2007/2008; Toivanen et al., 2025).

Behavior–outcome associations were coded for presence, direction (where available), and evidence type. Outcomes were grouped into student-focused (engagement, participation, time on task, comprehension) and classroom-process categories (orderliness, transitions, socioemotional climate, lesson flow). Teacher-effectiveness proxies were noted when linked directly to nonlinguistic behaviors.

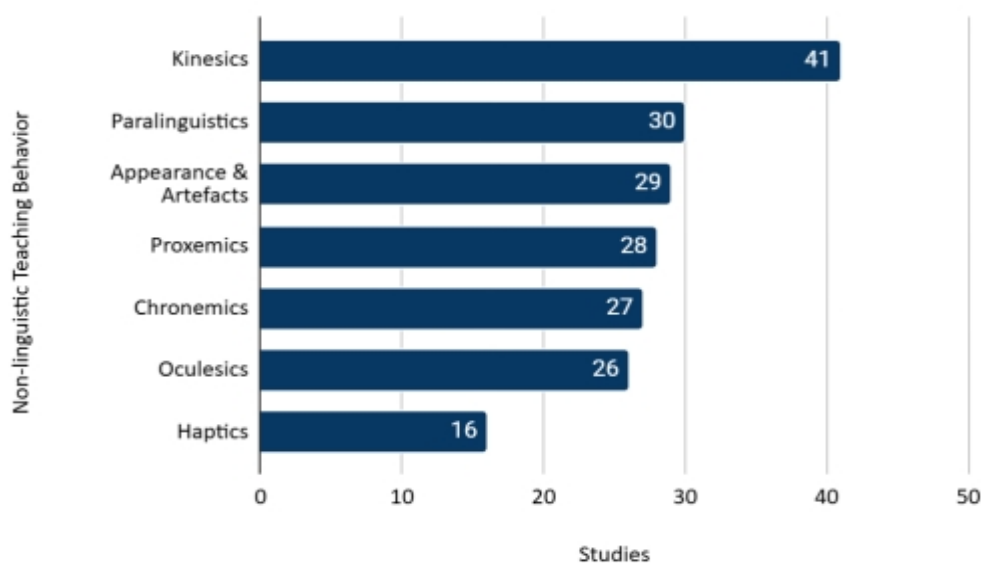
A pilot coding round and consensus meetings refined operational definitions. Consensus-based reliability was adopted due to the interpretive nature of categorizing heterogeneous publication-level constructs. This approach aligns with methodological recommendations for mapping reviews, which focus on conceptual clarity and systematization rather than statistical interrater coefficients (Grant & Booth, 2009).

#### 4. Findings and discussion

The analysis of 44 empirical studies revealed clear patterns in how nonlinguistic teaching behaviors are examined, measured, and associated with instructional outcomes in English language teaching. These findings also highlight methodological and contextual tendencies that shape the current evidence base.

##### 4.1. Patterns of nonlinguistic behaviors in the ELT evidence base

Seven categories of nonlinguistic behaviors were identified, with kinesics emerging as the most frequently examined across the corpus. A total of 41 studies focused on kinesic behaviors such as gesture, posture, and body movement. This dominance is depicted in Figure 2, which presents the frequency distribution of all behavioral categories. Paralinguistics, appearance and artefacts, proxemics, chronemics, and oculusics each appeared in between 26 and 30 studies, while haptics appeared in 16 studies.



**Figure 2.** Frequency of behavior categories across included ELT studies. Counts reflect study-level presence, not effect sizes

The predominance of kinesics can be attributed not only to its instructional relevance, but also to its high visibility and codability in video-based research environments. Behaviors such as gesture and movement are consistently recognized by observers and are relatively straightforward to classify. As a result, kinesics occupies a substantial portion of the documented evidence, reflecting the methodological accessibility of visible embodied actions. However, this does not necessarily indicate that kinesics is the most pedagogically influential modality. Rather, it signals how methodological choices shape the behavioral terrain of ELT research. Less visible or culturally sensitive modalities, such as haptics or chronemics, appear less frequently because they are more difficult to capture systematically.

#### 4.2. Measurement practices and their implications

Measurement approaches varied across the studies, with observation-based procedures, perception-based ratings, research-driven instruments, and technology-assisted methods all represented. Their distribution is shown in Figure 3. Observation-based methods were common across most behavior categories, particularly kinesics and proxemics. Perception-based approaches were frequently employed to evaluate immediacy, rapport, or engagement. Technology-assisted methods, including eye-tracking and acoustic analysis, were less common but provided greater precision for capturing ocular and paralinguistic features.

Behavior	Observation-based	Perception-based	Research Techniques	Technology-assisted	Total
Appearance & Artefacts	23	25	27	18	39
Chronemics	22	23	25	18	
Haptics	13	13	15	12	
Kinesics	32	32	39	28	
Oculesics	19	24	24	17	
Paralinguistics	22	26	28	19	
Proxemics	21	25	26	17	12

**Figure 3.** Operationalization and measurement by behavior category. Cells show Behavior × Measurement co-occurrence. Because studies often use multiple methods, totals may exceed N = 44 and intensities do not indicate effect direction or magnitude

These methodological differences have important interpretive implications. Behaviors that are more easily visible on video, such as gesture or spatial movement, naturally appear more frequently in studies using observation-based methods. Conversely, vocal timing, touch, and chronemic features often require more specialized tools or controlled conditions to be measured reliably. Thus, the frequency patterns across behavioral categories partially reflect measurement visibility rather than instructional salience. The evidence base is therefore shaped not only by what teachers do, but also by what researchers can feasibly record.

Furthermore, perception-based methods carry risks of common-method variance, as the same respondents may be rating both behaviors and outcomes. This reliance on perceptual data

may inflate associations, especially in studies examining engagement or perceived effectiveness. Such methodological heterogeneity underscores the need for more consistent operational criteria in future research.

4.3. Behavior-outcome associations in the ELT literature

Three outcome domains appeared most consistently across the studies: classroom processes, student engagement, and perceived teacher effectiveness. Their distributions are captured in Figure 4. Classroom processes, which include participation, transitions, withitness, and lesson flow, appeared in 43 studies. Engagement and teacher effectiveness each appeared in 38 studies.

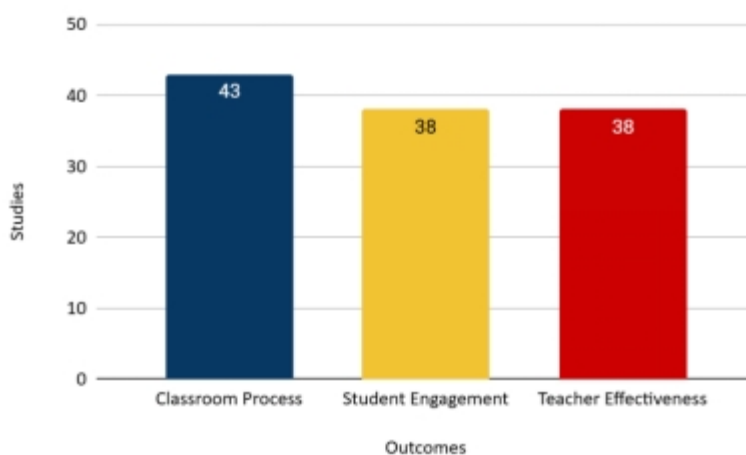


Figure 4. Reported outcomes across studies

The co-occurrence of specific behaviors with these outcomes, presented in Figure 5, reveals that kinesics was linked most frequently to classroom processes, engagement, and teacher effectiveness. Paralinguistics and proxemics also exhibited notable co-occurrence patterns, while chronemics and haptics were less frequently connected to outcomes.

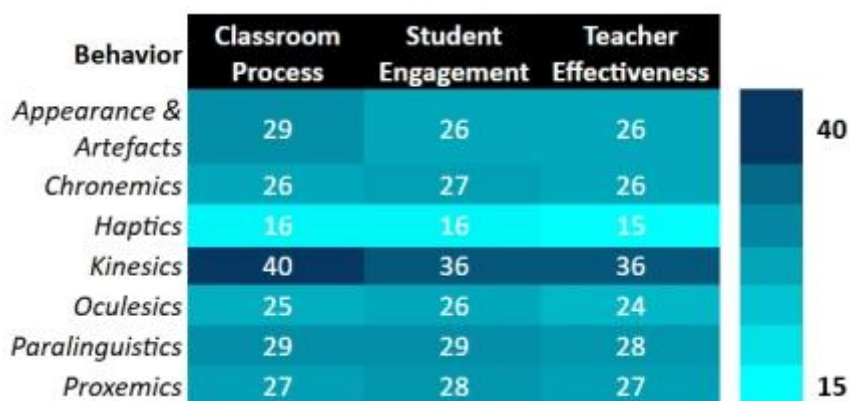


Figure 5. Behavior–outcome co-occurrence heatmap. Cells show Behavior × Outcome co-occurrence. Because studies often report multiple outcomes, totals may exceed N = 44 and intensities do not indicate effect direction or magnitude

Engagement was frequently reported as a global outcome across studies, despite established distinctions among behavioral, emotional, and cognitive engagement (Fredricks et al., 2004). Different nonlinguistic behaviors may influence these components differentially; for example, kinesic behaviors may relate more directly to behavioral engagement, while oculesic or paralinguistic cues may be more strongly associated with emotional engagement. The aggregation of engagement outcomes limits theoretical integration and underscores the need for future research to align specific behavioral modalities with clearly defined engagement dimensions.

These associations reflect a broad empirical consensus that nonlinguistic behaviors support the orchestration of classroom activity, contribute to student participation, and shape learners' perceptions of instructional quality. However, the use of broad outcome labels limits mechanistic insight. Engagement is often reported as a single category even though it includes behavioral, emotional, and cognitive components, each of which may respond differently to nonlinguistic cues. Similarly, teacher effectiveness is frequently used as an umbrella term that blends clarity, rapport, and management. The lack of construct refinement constrains the ability to isolate which behaviors influence which aspects of learning and interaction.

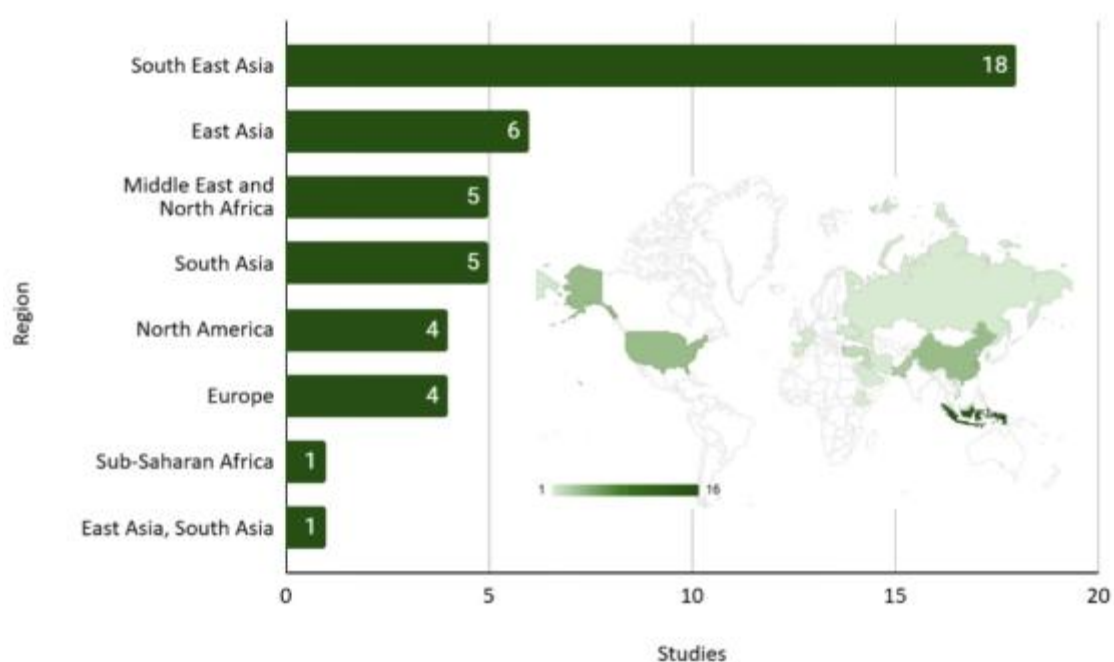
#### *4.4. Studies reporting null or mixed associations*

Although most studies reported positive associations between nonlinguistic teaching behaviors and instructional outcomes, a small number identified null or mixed findings. These studies typically examined broad or aggregated constructs, such as general gesture frequency or composite immediacy scores, using perception-based instruments, which may have masked modality-specific effects. Contextual factors also appear relevant, as these studies were situated in tertiary ELT settings with large class sizes and constrained physical interaction.

Methodological reliance on self-report measures further complicates interpretation, increasing susceptibility to common-method variance (Podsakoff et al., 2003; Witt et al., 2004). Rather than contradicting the broader literature, these null findings highlight boundary conditions under which nonlinguistic behaviors may exert weaker or indirect effects.

#### *4.5. Geographic, educational, and contextual patterns*

The geographic distribution of studies, shown in Figure 6, revealed that research is heavily concentrated in Southeast Asia, particularly Indonesia. Smaller clusters appeared in East Asia, South Asia, the Middle East and North Africa, North America, Europe, and Sub-Saharan Africa. This concentration suggests that cultural classroom norms may influence not only the use of nonlinguistic behaviors but also the feasibility of recording them.



**Figure 6.** Geographic distribution of included studies. Distributions are uneven by region

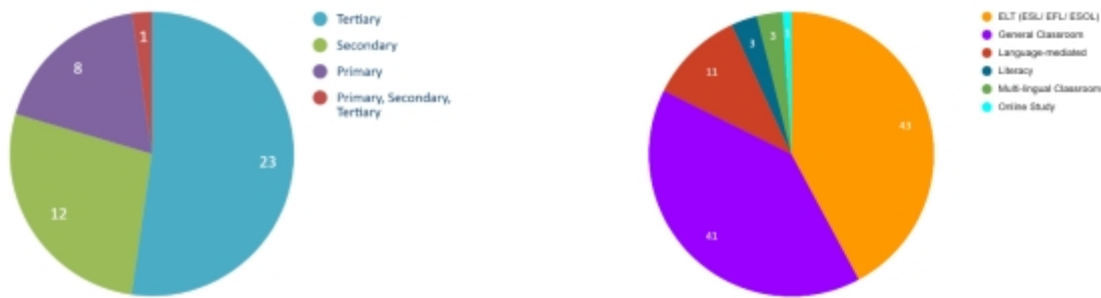
The pronounced geographic concentration of studies in Southeast Asia, particularly Indonesia, has important implications for the interpretation and generalizability of the mapped findings. Classroom interaction norms related to teacher authority, eye contact, interpersonal distance, and bodily movement vary substantially across cultural contexts, shaping both educators' enactment of nonlinguistic behaviors and learners' interpretations of those behaviors. In many Indonesian tertiary ELT settings, instructional interaction is embedded within relatively high power-distance norms, where teacher movement, gaze control, and spatial positioning may function differently than in lower power-distance or more individualistic educational cultures.

Consequently, nonlinguistic behaviors associated with positive classroom processes or engagement in Indonesian ELT contexts may not operate in equivalent ways in contexts where norms surrounding immediacy, proximity, or student participation differ. For example, sustained eye contact or close spatial proximity may be interpreted as supportive in some settings but intrusive or inappropriate in others. The geographic clustering therefore limits the extent to which the observed behavior–outcome associations can be assumed to generalize beyond the cultural and institutional contexts represented in the corpus.

This concentration also influences methodological choices, as cultural norms shape the feasibility of video recording, classroom observation, and behavioral coding. As a result, both the documented behaviors and their reported associations reflect culturally situated instructional practices rather than universal features of ELT pedagogy. These patterns underscore the need for future research that explicitly examines how cultural context moderates the enactment and interpretation of nonlinguistic teaching behaviors across diverse ELT settings.

Educational level distributions further highlight contextual concentration. As depicted in Figure 7, most studies were situated in tertiary education, with fewer studies at secondary and primary levels. This uneven representation restricts generalizability, as younger learners may be

more sensitive to spatial and gestural cues than older learners. Instructional settings were similarly concentrated in ELT and general classroom contexts, with comparatively limited attention to multilingual, literacy-based, or online environments.

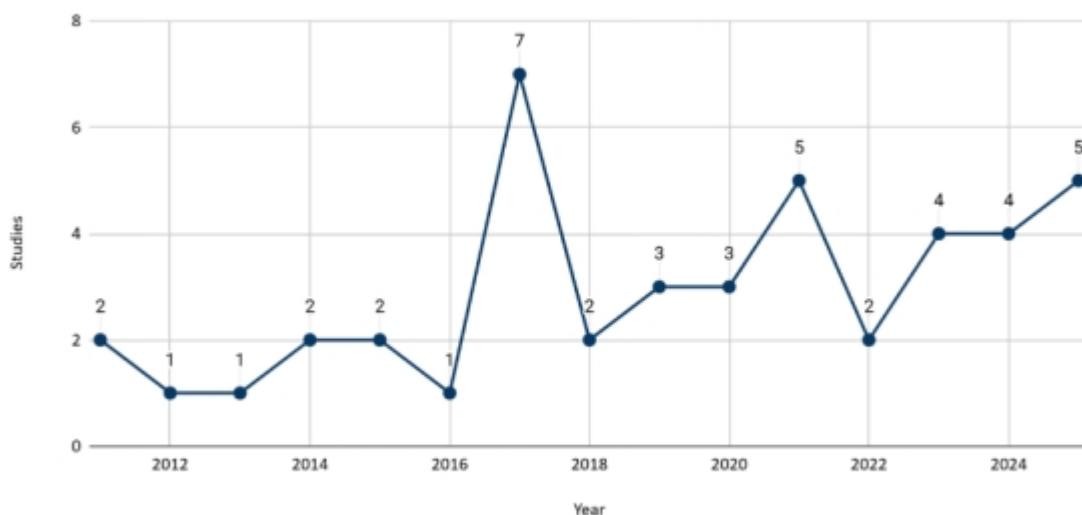


**Figure 7.** Educational levels (left) and instructional settings (right). Coverage is uneven, with concentration in tertiary and ELT/general classroom contexts

Together, these patterns indicate that the existing evidence base may not fully represent how nonlinguistic behaviors function in diverse cultural and educational systems. Broader contextual sampling would support stronger claims about generalizability.

#### 4.6. Temporal profile of the evidence base

The temporal distribution of publications within the mapped corpus, illustrated in Figure 8, shows an uneven and episodic pattern across the 2010–2025 review window. Although small clusters of studies appear in certain years, most notably around 2017, these fluctuations should be interpreted descriptively rather than inferentially. The figure does not assess whether observed variation reflects statistically non-random change, nor does it benchmark publication volume against overall growth in ELT or applied linguistics research during the same period.



**Figure 8.** Annual distribution of included studies (2010–2025). The figure presents descriptive publication counts and does not assess whether observed fluctuations differ statistically from baseline ELT research growth

Accordingly, the episodic pattern likely reflects a combination of localized research initiatives, methodological accessibility, and thematic clustering rather than a stable or cumulative research trajectory. From a mapping perspective, this temporal distribution underscores the absence of sustained longitudinal programs of research on nonlinguistic teaching behaviors in ELT, reinforcing the characterization of the field as empirically active but programmatically fragmented.

The combined analysis of behavioral frequencies, measurement practices, outcome associations, contextual patterns, and temporal trends demonstrates that nonlinguistic teaching behaviors play a substantive role in shaping instructional processes and learner engagement in ELT. At the same time, methodological constraints and contextual concentrations influence which behaviors are documented, how they are measured, and how their effects are interpreted. These findings emphasize the need for more integrated multimodal analyses, clearer construct boundaries, and broader contextual coverage to move beyond descriptive associations toward explanatory, mechanism-driven accounts of multimodal pedagogy.

## 5. Conclusion

This systematic mapping review synthesized 44 empirical studies published between 2010 and 2025 to examine how nonlinguistic teaching behaviors are defined, measured, and associated with classroom outcomes in English language teaching (ELT). The review identified seven major behavioral categories, revealing that kinesics dominates the evidence base, followed by paralinguistics, appearance and artifacts, proxemics, chronemics, oculosics, and haptics. This distribution reflects both theoretical emphasis and the methodological visibility of bodily movement within classroom observation frameworks.

Measurement approaches varied considerably, encompassing observation-based, perception-based, instrument-driven, and technology-assisted methods. These methodological divergences influence which behaviors are most frequently documented and shape the coherence of the current evidence landscape.

Across studies, nonlinguistic behaviors were most consistently associated with classroom processes, student engagement, and perceived teacher effectiveness. However, these outcome domains were frequently operationalized at a broad level of abstraction, limiting the precision of mechanism-based explanations. Contextual analyses indicated strong geographic and educational concentration, particularly within tertiary ELT settings in Southeast Asia, suggesting that the existing evidence base captures only a subset of global instructional contexts. Temporal patterns further suggested that research in this area has developed episodically rather than cumulatively.

In summary, the findings demonstrate that nonlinguistic teaching behaviors play a central role in shaping classroom interaction, participation, and perceived instructional quality in ELT. Nevertheless, methodological and contextual constraints limit the interpretability and generalizability of current evidence. Advancing the field will require clearer construct definitions, more consistent measurement practices, finer-grained outcome categories, and expanded research coverage across diverse cultural and educational contexts. Future work

should incorporate multimodal analytic approaches, disaggregated outcome frameworks, and explanatory research designs capable of identifying the mechanisms through which nonlinguistic behaviors influence learning processes. Addressing these gaps will support the development of more precise and context-sensitive models of multimodal pedagogy that better reflect the complexities of ELT classrooms.

### Declaration on the use of AI

The authors state that artificial intelligence (AI) tools were utilized solely to support language editing, clarity, and proofreading during manuscript preparation. The development of the manuscript's ideas, analysis, and interpretations was conducted entirely by the authors. All content has been critically reviewed and approved by the authors, who assume full responsibility for the accuracy and integrity of the work.

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