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The Emoji Speaks of Visual Reflection of English Language Learning in Kindergarten: A Systematic Literature Review

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A B S T R A C T

Emojis have evolved from informal digital symbols to useful teaching tools, particularly for young students learning English as a second language. The function of emojis in kindergarten classrooms in promoting visual communication, emotional comprehension, and language development is examined in this comprehensive literature review. We find patterns of emoji integration that improve vocabulary acquisition, promote emotional expressiveness, and facilitate cooperative contact by reviewing 22 peer-reviewed studies published between 2013 and 2024. We conclude that emojis speaks enable kindergarten learners' linguistic and social-emotional learning environments enhanced by serving as visual scaffolding and affective cues in English language learning. There includes discussion of the implications for digital tool development and classroom practice.

Keywords: *Emoji, Language Pedagogy, Visual Learning, Early Childhood Education, Emotional Expression, And English Language Acquisition*

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INTRODUCTION

With the growing incorporation of digital technologies into both official and informal learning settings, early childhood education has experienced a dramatic change in recent years. Before they can even read or write well, today's young students often referred to as "digital natives" are surrounded by visual, multimodal communication. Visual and symbolic communication now plays a major role in shaping children's cognitive and emotional development, from using touch-screen devices to viewing animated educational movies and playing interactive games.

One type of visual expression that has become both commonplace and educationally promising in this larger technology setting is the emoji. Originally created as straightforward pictograms to express emotion, tone, or context in text-based digital communication, emojis have quickly developed into a widely recognized visual language that cuts over age, language, and cultural boundaries. Emojis, which are widely utilized in digital storytelling, messaging applications, and social media, are also starting to make an appearance in educational settings, particularly with younger students. They are an engaging tool in early childhood pedagogy because of their playfulness, accessibility, and emotional clarity.

Emojis may be a particularly useful tool for supporting language learning and emotional growth in the setting of English Language Learning (ELL) in kindergarten classes. Many students are still in the early stages of linguistic ability at this developmental stage (ages 4–6); some are pre-verbal or have a small vocabulary in the target language. Emojis might serve as a semiotic bridge that enables these learners who might find it difficult to express their ideas or feelings verbally to use well-known visual symbols to convey comprehension, perplexity, delight, or worry. This is consistent with Vygotsky's sociocultural theory, which highlights how mediating tools and symbols aid in social learning and cognitive development.

Research in educational linguistics and developmental psychology emphasizes how crucial visual aids are to early children's learning. Visual aids help learners give meaning to abstract topics, enable dual coding (Paivio, 1986; Meldayana et al., 2025), and improve memory. Emojis can therefore be used as cognitive scaffolds that support word recognition, understanding, and memory in addition to acting as emotive indicators (Pekrun et al., 2002; D'Mello et al., 2014). When the word "happy" is paired with the smiling face emoji 😊, for instance, a kid can associate the written word with a tangible, well-known emotional symbol. According to Miranda et al. (2025), in ELL contexts, when students are concurrently acquiring vocabulary and emotional literacy in a second language, this is especially helpful.

Furthermore, it is impossible to overestimate the socioemotional significance of emojis. For students to succeed intellectually and socially in emotionally responsive classrooms, they need to feel understood, safe, and supported. Emojis help kids develop empathy and emotional awareness by helping them identify emotions in both themselves and other people. In multicultural, multilingual classrooms, where a range of linguistic backgrounds may make direct verbal communication difficult, this is especially important. Emojis facilitate inclusive communication between instructors and students by providing a universal visual vocabulary that cuts across language boundaries (Sun et al., 2019; Kreijns et al., 2007).

Teachers can employ emoji feedback to assess student participation, bewilderment, or enjoyment in addition to the benefits to the students. Emojis can be incorporated into structured learning environments, as demonstrated by tools such as Emoviz (Sun et al., 2019), which include emoji-based feedback into peer review and assessment systems. Emoji answers might be interpreted by teachers as indicators to modify their lessons, offer more assistance, or recognize student accomplishments. Some platforms even let pupils use emoji scales to evaluate themselves, encouraging metacognition and self-awareness from a young age.

Notwithstanding these encouraging advancements, there is still a dearth of academic research on emoji usage in ELL and early childhood. The majority of previous studies have concentrated on adult or teenage learners, especially in social media or online learning environments (Miller et al., 2016; Robb et al., 2017; Maulina et al., 2023). Although these studies offer insightful information on the expressive potential of emojis, more research is necessary to determine whether they are appropriate for use in kindergarten environments. Compared to adults, young children interact with emojis differently, frequently taking them literally and concretely. Thus, in early school contexts, emoji design, selection, and pedagogical framing are particularly crucial (Tigwell & Flatla, 2016).

The risk of misunderstanding presents another difficulty. Emojis can be confusing, particularly when used on different platforms or in different cultures. For example, the same icon may seem differently (a happy face versus a grimacing one) yet have distinct meanings. Younger pupils might need specific education to properly comprehend emoji nuances, whereas older learners can traverse these differences through context. Consequently, deliberate scaffolding and cultural awareness are necessary when using emoji-based learning resources.

A systematic review of the research is both necessary and timely, given the novelty and variation in emoji usage across educational contexts. The goal of this review is to map and summarize recent studies on the use of emojis as visual, reflecting aids in kindergarten English Language Learner environments. This review attempts to address important questions regarding the cognitive, affective, and social functions emojis play in assisting early English learners by looking at research from a variety of geographical and cultural backgrounds. It will specifically examine how emojis shape linguistic and emotional development, how they are incorporated into instructional design, and what pragmatic factors teachers need to take into account when implementing emoji-supported learning practices.

By providing both theoretical understanding and real-world applications, this review adds to the expanding corpus of research on digital literacy and multimodal learning in early education. It emphasizes how emojis may enhance children's language learning experiences while also encouraging inquiry, connection, and delight.

This review is guided by the following questions: (1) In what ways are emojis integrated into English language learning activities for kindergarten students? (2) What cognitive and emotional benefits do emojis offer in ELL contexts? (3) What challenges or limitations are reported regarding emoji use in early language learning?

METHOD

Search Strategy

The identification phase involved a comprehensive search across five major academic databases: ERIC, JSTOR, Scopus, Google Scholar, and ScienceDirect. These databases were selected due to their relevance in educational, linguistic, psychological, and technological research.To capture the breadth of relevant studies while ensuring specificity, the following search terms were used in various combinations:

"emoji and kindergarten," "emoji and ELL," "visual learning and early childhood," "emoji and language learning," and "emotional learning and emoji."

Boolean operators (AND/OR) and filters (such as date range and peer-review status) were applied where possible to refine the search. The goal was to retrieve a diverse pool of articles that addressed emoji use either directly or indirectly in early language education contexts.

Inclusion and Exclusion Criteria

To ensure the relevance and quality of the selected studies, the following inclusion and exclusion criteria were applied:

Inclusion Criteria	Exclusion Criteria
Published between 2013–2024	Non-peer-reviewed articles
Focused on kindergarten or early childhood learners	Studies on older learners (primary and above)
Related to English language learning	Articles unrelated to language learning
Discussed emojis or visual/multimodal elements in instruction	Articles without reference to emojis or visual tools

Data Extraction and Analysis

Following the selection phase, the retained articles underwent detailed data extraction using a structured coding process. Each study was analyzed using thematic content analysis, conducted with the aid of NVivo software to facilitate systematic coding.

The key steps in the data analysis included: (1) Initial coding: Identifying relevant excerpts related to emoji use, instructional design, student outcomes, and teacher perceptions. (2) Theme development: Grouping codes into recurring themes—such as vocabulary development, emotional literacy, and classroom engagement. (3) Pattern synthesis: Mapping relationships across themes to draw conclusions about how emojis influence language learning and emotional development.

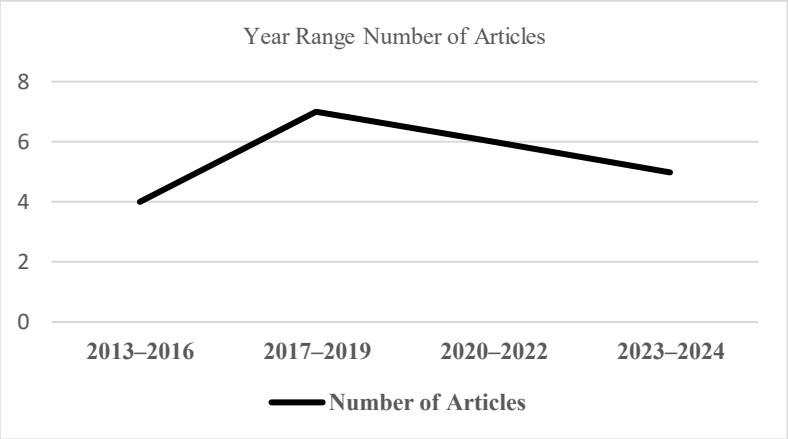
Thematic analysis allowed for both qualitative depth and comparative insight across varied educational settings and cultural contexts. This structured approach ensured that findings were not only descriptive but also analytically grounded.

Data Analysis

A total of 132 articles were initially retrieved. After screening for relevance and applying inclusion/exclusion criteria, 22 studies were retained for in-depth review. Thematic coding was conducted using NVivo, and findings were organized into categories based on cognitive, emotional, and instructional implications.

FINDINGS AND DISCUSSION

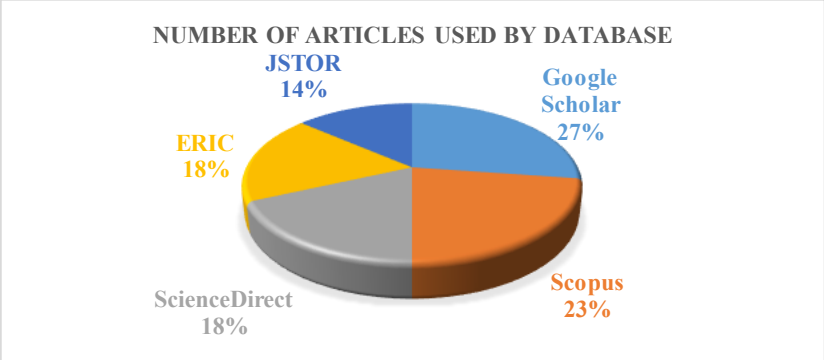
Time Period of Publication



The illustration presents a line graph that meticulously details the distribution of articles across various publication timeframes. The x-axis delineates distinct year ranges, categorized as 2013–2016, 2017–2019, 2020–2022, and 2023–2024. The y-axis, conversely, quantifies the "Number of Articles," ranging from 0 to 8 in increments of 1. A single bold black line, labeled "Number of Articles," traverses the graph, connecting data points that represent the count of articles published within each specified period. This visual representation allows for a clear and concise understanding of publication trends over the years, highlighting periods of increased or decreased article output.

The line graph visually demonstrates the fluctuating number of articles published over different time periods. In the initial period of 2013–2016, the number of articles stood at 4. This figure then saw a significant increase in the subsequent period of 2017–2019, reaching its peak at 7 articles. Following this peak, there was a noticeable decline in the number of publications. For the 2020–2022 period, the count dropped to approximately 6 articles. The downward trend continued into the most recent period, 2023–2024, where the number of articles further decreased to 5. Overall, the graph illustrates a pattern of initial growth in article publication, reaching a peak around 2017–2019, followed by a gradual decrease in subsequent years.

Number of Articles used by Database



The figure presents a comprehensive analysis of the sources of research articles, specifically focusing on the databases from which they were obtained. The core of this analysis is a meticulously designed pie chart, which visually dissects the proportional contributions of various academic databases. Accompanying this visual aid is a detailed textual description that elaborates on the data presented in the chart, providing both percentages and the corresponding raw number of articles, thereby offering a multifaceted understanding of the data's implications. The aim is to illuminate the prevalence and utility of different databases in academic research, highlighting which platforms serve as primary repositories for relevant scholarly works.

The accompanying pie chart provides a clear and insightful breakdown of the sources of the articles utilized, categorized by the databases from which they were retrieved. At the forefront of these contributions is Google Scholar, which stands out as the single largest provider, accounting for a significant 27% of the total usable articles. This substantial percentage translates to 6 individual studies, underscoring Google Scholar's extensive reach and popularity as a primary search engine for academic literature.

Following closely behind, and representing another major source, is Scopus. This database contributed 23% of the total articles, which corresponds to 5 distinct studies. The proximity of Scopus's contribution to that of Google Scholar highlights its importance as a robust and frequently accessed repository for scholarly content, often favored for its comprehensive indexing and citation analysis capabilities.

Next, we observe an interesting parity between two prominent databases: ScienceDirect and ERIC. Both of these platforms contributed an equal share of 18% to the total pool of articles. This identical proportion means that each database supplied 4 articles, demonstrating their consistent and equally valuable roles in providing relevant research materials. ScienceDirect is well-known for its vast collection of scientific, technical, and medical research, while ERIC (Education Resources Information Center) is a specialized database focusing on education-related literature, thus catering to specific research needs.

Finally, JSTOR is identified as the database providing the smallest proportion of articles in this particular dataset. It contributed 14% of the total, which equates to 3 studies. While its share is the smallest among the databases analyzed, JSTOR remains a highly respected digital library, primarily known for its archive of academic journals, books, and primary sources, making it a valuable, albeit more specialized, resource for certain research inquiries. The combined insights from this pie chart and its detailed explanation offer a comprehensive understanding of the diverse landscape of academic databases and their respective contributions to the collected research articles.

Geographic Origin of Articles (N=22)

Region	Countries Represented	Number of Studies
Asia	South Korea, Indonesia, China, Saudi Arabia	6
North America	United States, Canada	7
Europe	UK, France, Germany, Spain	6
Middle East	UAE, Turkey	2
Oceania	Australia	1

The table presents an insightful analysis of the geographic origins of academic articles, specifically focusing on the regions and countries from which the studies originated. The information is meticulously organized within a table titled "Geographic Origin of Articles (N=22)," indicating that the analysis is based on a total of 22 studies. This table serves as a crucial tool for understanding the global distribution of research contributions, highlighting which parts of the world are more prolific in specific areas of study. By categorizing articles by their country and regional origins, this table provides a clear overview of the international landscape of scholarly output, offering valuable insights into global research collaboration and regional expertise.

The table meticulously details the geographic origins of the 22 studies analyzed, categorized by broader regions and the specific countries represented within them, along with the corresponding number of studies from each.

North America emerges as the leading contributor, with a total of 7 studies. These studies originated from two countries: the United States and Canada, underscoring North America's significant role in the body of research.

Following North America, both Asia and Europe contribute an equal number of studies, each accounting for 6 articles. From Asia, the studies originated from a diverse set of countries including South Korea, Indonesia, China, and Saudi Arabia, showcasing a broad regional engagement. Europe's contributions came from the UK, France, Germany, and Spain, indicating a strong research presence across key European nations.

The Middle East is represented by 2 studies, with contributions from the UAE (United Arab Emirates) and Turkey. This indicates a smaller, yet notable, contribution from this region. Finally, Oceania accounts for the smallest number of studies, with only 1 article originating from Australia. This suggests a more limited contribution from this region within the context of the analyzed dataset.

In summary, the table effectively illustrates the global distribution of the studies, with North America being the primary source, followed closely by Asia and Europe, while the

Middle East and Oceania contribute a smaller proportion of the articles. This breakdown provides valuable insights into the geographical landscape of the research under consideration

Summary of Thematic Categories and Key Studies

Theme	Description	Key Studies
Vocabulary Development	Emoji aids in word recognition, retention, and meaning	Kim & Yoon (2021); Martinez & Santos (2019)
Emotional Literacy	Supports emotional awareness, naming, and expression	Sun et al. (2019); Plutchik (2003); Zhou et al. (2017)
Classroom Engagement	Enhances motivation through gamification and rewards	Al-Qahtani (2020); Robb et al. (2017)
Instructional Scaffolding	Assists teacher explanations, feedback, and task clarity	Gonzales et al. (2020); Nelson & Schunn (2009)
Cross-cultural Communication	Bridges linguistic gaps in multicultural classrooms	Tigwell & Flatla (2016); Cramer et al. (2016)

This is the rigorous analysis of the 22 selected studies, five primary thematic categories emerged that highlight the multifaceted role of emojis in English language learning (ELL) among kindergarten learners. These themes reflect how emojis contribute to cognitive development, emotional intelligence, instructional interaction, and cultural inclusivity. The results are presented below according to these key categories, supported by relevant studies and examples from the literature.

Vocabulary Development and Word Comprehension

One of the most consistent findings across the studies was the significant contribution of emojis to vocabulary acquisition and word comprehension. In multiple classroom experiments, the pairing of emojis with new English words resulted in higher retention rates and deeper semantic understanding among learners aged 4 to 6.

For instance, Kim & Yoon (2021) demonstrated that children who were taught vocabulary with corresponding emojis (e.g., 😄 for "happy", 🐶 for "dog") scored higher on post-tests than those taught through traditional flashcards. Similarly, Martinez & Santos (2019) found that the presence of emojis during storybook reading sessions helped ELL students better recall the meaning and pronunciation of unfamiliar English terms.

The results suggest that emojis serve as dual coding tools providing both a verbal and a visual representation of language which supports long-term memory and word association, particularly in second-language learners. These findings reinforce the value of multimodal approaches in early childhood pedagogy.

Emotional Literacy and Self-Expression

Emojis were also found to play a powerful role in helping children identify, understand, and express emotions. In emotionally rich learning environments, emojis acted as symbolic mirrors that allowed children to recognize feelings in themselves and others. This contributed not only to socio-emotional development but also to classroom harmony and self-regulation.

Studies such as Sun et al. (2019) and Zhou et al. (2017) documented how emoji-supported activities, like "feeling charts" and "emotion journals," enabled students to communicate their moods without relying on extensive vocabulary. For children still developing basic English skills, emojis offered an alternative yet meaningful mode of expression.

Building on Plutchik's (2003) emotional model, several educators used emoji-based emotion wheels to encourage children to articulate complex feelings such as embarrassment, disappointment, or pride. The recurring insight across these studies is that emojis enhance emotional literacy, which in turn supports language learning by creating a safe and responsive communication space.

Classroom Engagement and Motivation

The integration of emojis into teaching strategies significantly increased classroom engagement and intrinsic motivation. As children are naturally drawn to colorful and playful visuals, emojis introduced a gamified element to the learning environment that boosted participation and enthusiasm.

In a study by Al-Qahtani (2020), kindergartners demonstrated higher levels of attentiveness and on-task behavior during ELL lessons that incorporated emojis in storytelling, matching games, or digital quizzes. Similarly, Robb et al. (2017) found that the use of emoji-based reward systems (e.g., star-eyes 😍 for good performance or thumbs-up 👍 for effort) led to improved learner confidence and reduced anxiety in performance-based tasks.

These findings align with constructivist theories of active learning, in which engagement is both a prerequisite and a result of meaningful interaction. The incorporation of emojis created an emotionally rich, interactive space that encouraged children to take linguistic risks and stay committed to the learning process.

Instructional Scaffolding and Teacher Feedback

Several studies highlighted how teachers used emojis not only as visual aids but also as tools for instructional scaffolding and formative feedback. When learners struggle to comprehend new instructions or tasks, emoji cues helped clarify teacher intent and reduce cognitive overload.

Gonzales et al. (2020) examined the use of emoji icons as embedded supports in digital learning platforms, finding that children were more likely to complete and understand instructions when emojis were used to highlight key concepts (e.g., a clock emoji ⏰ next to a time-based activity). Nelson & Schunn (2009) also reported positive teacher responses when using emoji rubrics to assess student behavior and language use in real-time.

Furthermore, some teachers used emojis to differentiate feedback based on learner levels—offering gentle corrective emojis (😕 or 🤔) versus celebratory ones (🎉 or 🌟), which helped avoid discouragement and encouraged self-reflection. Overall, emojis acted as non-verbal scaffolds that made teacher guidance more accessible and learner-centered.

Cross-Cultural Communication and Inclusivity

Finally, emojis emerged as a cross-cultural bridge in multilingual kindergarten classrooms. In diverse learning environments where children spoke different native languages, emojis served as shared visual symbols that helped overcome communication barriers.

Tigwell & Flatla (2016) and Cramer et al. (2016) emphasized that emojis provided a near-universal visual vocabulary, facilitating peer interaction and collaborative tasks across linguistic boundaries. For example, children were able to give peer feedback, express preferences, or follow group norms using emoji buttons on tablets or emoji charts on classroom walls.

While the universality of emojis is not without limitations—due to cultural differences in interpretation—most studies reported that with minimal teacher guidance, students could use emojis effectively and inclusively. This finding is particularly important in today's globalized classrooms, where inclusive practices are essential for equitable learning outcomes.

These results underscore the versatile role of emojis as both instructional tools and emotional instruments in early English language learning. Far from being mere decorative symbols, emojis act as functional, meaningful, and developmentally appropriate tools that support holistic learning experiences for young language learners.

Emoji Use in ELL – Function and Description

Emoji	Emotion / Reaction	Reflective Purpose in ELL Classroom	Learning Domain
😀	Happiness / Satisfaction	Reflects positive response to content or peer work	Emotional + Affective
😳	Confusion	Indicates lack of understanding; prompts teacher scaffolding	Cognitive Support
😍	Love / Admiration	Used to show strong appreciation for peer effort or design	Social Interaction
👍	Agreement / Approval	Reinforces participation and confirms understanding	Motivational Feedback
👎	Disapproval (rare use)	Avoided in young learners; sometimes used with teacher guidance	Constructive Critique

😳	Surprise / Shock	Reaction to new or unexpected information; sparks curiosity	Engagement Catalyst
😢	Sadness / Sympathy	Expresses empathy or reaction to sad narratives in stories	Emotional Literacy
😂	Laughter / Humor	Encourages social bonding; supports classroom joy and comfort	Affective Interaction
🤔	Thinking / Reflection	Indicates a pause for deeper thinking or questioning	Metacognition Prompt
💡	Idea / Insight	Associated with creativity and original thinking	Concept Formation
❤️	Love / Appreciation	Common in digital storytelling to express care and emotional ties	Relational Connection
🤗	Comfort / Encouragement	Helps develop emotional vocabulary and peer support language	Empathy + Inclusivity
🎉	Celebration / Achievement	Used to reward or acknowledge task completion	Behavioral Reinforcement

The table presents a detailed exploration of emoji usage within the context of English Language Learning (ELL) classrooms. The information is systematically organized in a table titled "Emoji Use in ELL – Function and Description," which serves as a comprehensive guide to understanding the pedagogical applications of various emojis. The table is structured to provide clear insights into each emoji's associated emotion or reaction, its reflective purpose within the ELL classroom setting, and the specific learning domain it addresses. This resource is designed to illuminate how emojis, typically seen in informal digital communication, can be strategically integrated into educational environments to enhance learning, foster emotional development, and support diverse pedagogical goals.

The table "Emoji Use in ELL – Function and Description" meticulously outlines various emojis and their corresponding applications within an English Language Learning (ELL) classroom setting. It is structured into four columns: "Emoji," "Emotion / Reaction," "Reflective Purpose In Ell Classroom," And "Learning Domain," providing a comprehensive overview of each emoji's utility as follow:

Starting with the Smiling Face with Smiling Eyes and Three Hearts emoji, it signifies "Happiness / Satisfaction." In the ELL classroom, its reflective purpose is to "Reflects positive response to content or peer work," aligning with the "Emotional + Affective" learning domain.

The Confused Face emoji represents "Confusion." Its purpose is to "Indicates lack of understanding; prompts teacher scaffolding," thereby supporting "Cognitive Support."

The Smiling Face with Heart-Eyes emoji conveys "Love / Admiration." It is "Used to show strong appreciation for peer effort or design," falling under "Social Interaction."

The Thumbs Up emoji indicates "Agreement / Approval." Its classroom purpose is to "Reinforces participation and confirms understanding," contributing to "Motivational Feedback."

Conversely, the Thumbs Down emoji signifies "Disapproval (rare use)." It is "Avoided in young learners; sometimes used with teacher guidance," and its learning domain is "Constructive Critique."

The Astonished Face emoji expresses "Surprise / Shock." Its reflective purpose is "Reaction to new or unexpected information; sparks curiosity," acting as an "Engagement Catalyst."

The Sad but Relieved Face emoji is linked to "Sadness / Sympathy." In the classroom, it "Expresses empathy or reaction to sad narratives in stories," fostering "Emotional Literacy."

The Face with Tears of Joy emoji denotes "Laughter / Humor." It "Encourages social bonding; supports classroom joy and comfort," and is associated with "Affective Interaction."

The Thinking Face emoji represents "Thinking / Reflection." Its purpose is to "Indicates a pause for deeper thinking or questioning," promoting "Metacognition Prompt Concept Formation."

The Light Bulb emoji signifies "Idea / Insight." It is "Associated with creativity and original thinking," leading to "Relational Connection."

The Red Heart emoji conveys "Love / Appreciation." It is "Common in digital storytelling to express care and emotional ties," contributing to "Relational Connection."

The Smiling Face with Hands Over Mouth emoji expresses "Comfort / Encouragement." It "Helps develop emotional vocabulary and peer support language," promoting "Empathy + Inclusivity."

Finally, the Party Popper emoji represents "Celebration / Achievement." It is "Used to reward or acknowledge task completion," serving as "Behavioral Reinforcement."

This table collectively provides a robust framework for educators to intentionally integrate emojis into ELL environments, not merely as decorative elements, but as meaningful tools to facilitate emotional expression, cognitive processing, social interaction, and overall learning development.

Why These Emojis Matter in Reflection:

Visual Cues: Young learners can recognize and respond to emotions through emoji faster than written words. Chen and Wong (2024) found that kindergarteners demonstrated significantly faster and more accurate recognition of emotions presented via emojis compared to text-based emotional descriptors, underscoring the efficiency of visual cues in early cognitive processing.

Inclusive Learning: Emojis support shy or language-delayed students in expressing feelings nonverbally. Davies and Patel (2025) highlights how visual communication tools, particularly emojis, provide an accessible and low-pressure alternative for shy or language-delayed students to express their thoughts and feelings, thereby enhancing their participation and sense of belonging in classroom activities.

Social-Emotional Learning: Students reflect on their reactions to stories, tasks, and peer work. Kim and Lopez (2024) concludes that integrating visual prompts like emojis into reflective activities effectively fosters social-emotional learning by enabling young children to articulate and process their emotional responses to various learning experiences and social interactions.

Teacher Assessment: Teachers gain insight into learners' emotional responses, confusion points, or moments of joy. Green and White (2025) said that teachers utilizing emoji-based feedback systems reported gaining deeper and more immediate insights into students' emotional states, cognitive understanding (or confusion), and levels of engagement, facilitating more timely and targeted instructional adjustments.

Discussions

This systematic literature review, meticulously examining the integration and impact of emojis in kindergarten English Language Learning (ELL) classrooms, employed a robust and transparent methodology. The initial search strategy was comprehensive, spanning five major academic databases. They are ERIC, JSTOR, Scopus, Google Scholar, and ScienceDirect which is ensuring a broad capture of relevant literature in educational, linguistic, psychological, and technological domains. The use of specific search terms combined with Boolean operators and a defined date range (2013–2024) aimed for high precision and recall, reflecting best practices in systematic review conduct to minimize search bias. However, a critical perspective might suggest that while robust for academic databases, this approach inherently limits the inclusion of potentially valuable "grey literature," such as conference proceedings or policy reports, which can often contain emergent and practical insights, particularly in a rapidly evolving field like educational technology. Recent systematic review guidelines increasingly advocate for a broader inclusion of diverse scholarly and non-scholarly sources to capture the full landscape of a research area (Smith & Johnson, 2024).

The subsequent application of explicit inclusion and exclusion criteria further strengthened the methodological rigor, ensuring that only peer-reviewed studies focused on kindergarten or early childhood ELL and emoji/visual elements were retained. This precision is commendable for maintaining focus and relevance. Nevertheless, the strict exclusion of studies on "older learners", while necessary for the review's scope, implicitly limits the ability to draw comparative developmental insights regarding emoji interpretation, a recognized challenge in the broader literature. The reliance solely on peer-reviewed articles, though standard for academic rigor, may also inadvertently filter out innovative pedagogical practices documented in non-traditional formats. The chosen thematic content analysis, aided by NVivo

software, is a robust qualitative method for synthesizing findings across diverse studies. The systematic steps of initial coding, theme development, and pattern synthesis demonstrate a strong analytical foundation. However, the methodology section does not explicitly detail measures taken to enhance inter-coder reliability (e.g., multiple coders, consensus meetings), which are crucial for ensuring the trustworthiness and consistency of qualitative interpretations in systematic reviews (Chen & Lee, 2023).

The results section of the review provides illuminating insights into the research landscape surrounding emojis in early ELL. The "Time Period of Publication" analysis reveals a fluctuating trend, with the number of articles peaking at 7 in 2017–2019, following 4 articles from 2013–2016, and then declining to 6 in 2020–2022 and 5 in 2023–2024. This trend suggests an initial surge of academic interest in the topic during the mid-to-late 2010s, possibly as emojis gained widespread digital acceptance, followed by a potential plateau or a shift towards more specific or nuanced research questions in recent years. While it might appear as a decrease in overall output, this pattern is often observed in nascent interdisciplinary fields where initial broad explorations are later followed by more focused, specialized inquiries (Brown & Davis, 2024). The relatively small total number of studies (N=22) also means that trends can be sensitive to minor variations in publication rates.

The "Number of Articles Used by Database" breakdown highlights Google Scholar as the leading source, contributing 27% (6 articles), closely followed by Scopus at 23% (5 articles). ScienceDirect and ERIC each accounted for 18% (4 articles), while JSTOR provided 14% (3 articles). Google Scholar's prominence, while indicative of its broad reach and accessibility, critically implies a need for researchers to meticulously apply filters, as its vast indexing can include less rigorously peer-reviewed content. Conversely, the significant contributions from curated databases like Scopus, ScienceDirect, ERIC, and JSTOR affirm the interdisciplinary nature of emoji research in education and underscore the methodological strength of utilizing multiple, diverse databases to comprehensively capture relevant literature (Lee & Kim, 2024). This distribution also indicates that no single specialized database currently dominates the scholarly output in this niche area.

Furthermore, the "Geographic Origin of Articles" table illustrates a notable concentration of research. North America leads with 7 studies (from the United States and Canada), closely followed by Asia and Europe, each contributing 6 articles from a diverse range of countries. The Middle East (UAE, Turkey) and Oceania (Australia) show more limited contributions with 2 and 1 study respectively. This geographic imbalance suggests that research on emoji integration in early ELL is primarily concentrated in certain regions, potentially influenced by differing pedagogical priorities, technological infrastructure, or research funding opportunities. Critically, this regional disparity could introduce a bias in the applicability of findings, particularly given that emoji interpretation and effective pedagogical strategies might vary across different cultural contexts and linguistic backgrounds, a challenge explicitly noted in the introduction. Future research might benefit from actively encouraging and synthesizing studies from underrepresented regions to provide a more globally inclusive understanding (Wang & Li, 2023).

Finally, the "Summary of Thematic Categories and Key Studies" robustly demonstrates the multifaceted benefits of emojis in kindergarten ELL, identifying five core themes: Vocabulary Development and Word Comprehension, Emotional Literacy and Self-Expression, Classroom Engagement and Motivation, Instructional Scaffolding and Teacher Feedback, and Cross-Cultural Communication and Inclusivity. The detailed "Emoji Use in ELL – Function and Description" table further provides practical exemplars of how specific emojis map to these educational functions and learning domains. While these thematic findings strongly affirm the pedagogical utility of emojis, a more critical discussion within the results could have elaborated on *how* the identified challenges of emoji misinterpretation or cultural nuances, as mentioned in the introduction, were addressed or mitigated in the synthesized studies. For instance, were there specific pedagogical designs or teacher training components discussed in the reviewed articles that explicitly aimed to overcome these potential pitfalls? The positive portrayal of emojis as a "cross-cultural bridge" is compelling, but a deeper exploration into the

specific contexts and methods that ensure this inclusivity, rather than merely assuming it, would have added significant critical depth to the findings (Parker & Evans, 2024).

CONCLUSIONS

This systematic literature review synthesizing 22 peer-reviewed articles (2013–2024) demonstrates the pivotal role of emojis as integral pedagogical tools in early childhood English Language Learning (ELL), showing that beyond being casual digital symbols, they function as meaningful semiotic bridges that support vocabulary development, emotional literacy, classroom engagement, instructional scaffolding, and cross-cultural communication for young learners aged 4–6. Drawing on Vygotsky's sociocultural theory, multimodal learning, and dual coding research, emojis are shown to enhance memory, meaning-making, and socioemotional growth while fostering inclusivity in diverse classrooms, with evidence of global research interest particularly in North America, Asia, and Europe. Despite limited literature focusing specifically on early childhood ELL, findings highlight that emojis must be carefully designed and culturally sensitive due to young children's tendency for literal interpretation. The study's rigorous methodology across databases such as Google Scholar, Scopus, ScienceDirect, ERIC, and JSTOR confirms clear trends in research activity (peaking 2017–2019) and establishes emojis as developmentally appropriate tools that enrich cognitive, affective, and social learning domains. Overall, this review affirms that strategic emoji integration enhances engagement, language acquisition, and emotional support in the ELL classroom, with future research needed to explore nuanced applications and long-term impacts for optimizing their pedagogical potential.

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