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Digital Discourses and Multimodal Expressions: New Frontiers in Linguistic Development

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Abstract: This study examines the relationship between digital discourse and multimodal meaning-making, both of which are pivotal for twenty-first-century language learning. This study synthesizes interdisciplinary frameworks to bridge theory and classroom practice, offering grounded strategies for integrating multimodal and equitable literacies in the digital era. It argues that the digital domain recasts meaning-making and opportunities for meaning-making across text types via composites of graphics, sound and materiality as complex semiotic ensembles. Developments are framed via multimodal discourse analysis, social semiotics, cognitive load theory and multiliteracies pedagogy. In the history of discourse in print and the digital domain, a new reality emerges, marked by features of hypertextuality, instability, convergence, algorithmically mediated interaction, and transience, which suggest a definitive shift in what it means to communicate intentionally. From emojis, GIFs, memes, to podcasts, video interactions, and virtual realities, the shifting features of multimodal meaning-making expand the flexibility of language skills beyond alphabetic intersections. Digital discourse and modalities impact literacy development, as well as pragmatic awareness and multilingual expression, thereby enabling learners, to develop an extensive repertoire of language abilities. This study assesses the significance of these findings for pedagogical applications, encompassing the prevalence of multimodal meaning-making in the classroom and the subsequent evaluation of such works, as well as ethical considerations related to digital citizenship, nuance, misinformation, and bias. It concludes with a future-oriented perspective shaped by artificial intelligence, augmented/virtual realities, and multimodal learning analytics, yet existing in a perpetual state of limbo regarding equity and access.

Keywords: Artificial intelligence, Digital discourse, Linguistic development, Multimodality, Pedagogy

1. Introduction

By the second decade of the twenty-first century, much of what is considered discourse can no longer be separated from technology. The act of communicating occurs in sites of textual, visual, audio, and interactive convergence, resulting in a growing body of scholarship referring to discourse as digital. Digital discourse speaks to both the transmission of information through technologically accessed means and the semiotic influences of meaning making within digital environments. As such, Crystal (2011) asserts that internet linguistics is not a marginal field but increasingly a primary area of study, reinforcing how digital environments shape the very structure and function of language. Related to this is the concept of multimodal meaning making, the use of multiple semiotic resources—literate, visual, gestural, and audio—for cohesive acts of meaning creation. Digital discourse and multimodal meaning making reinforce how language in the contemporary world is never purely textual, but part of ensembles of disparate modes that work together.

Emerging studies reveal that meaning making is increasingly multimodal. For example, Lyons (2018) demonstrates that even when writing alphabetically online, typography, spacing, and layout all suggest multimodal possibilities, countering the position that digital writing is fundamentally alphabetic. Similarly, Garcés-Conejos Blitvich and Bou-Franch (2018) contend that developments in digital discourse studies occur in a “third wave,” suggesting an innovative approach with attention to identity and issues arising from the affordances of digitally mediated environments. This represents a crucial turning point: when digital discourse is no longer positioned as derivative or peripheral to traditional forms of engagement but in the center of linguistic and social inquiry.

The most apparent way multimodality changes things is through literacy. As Lankshear and Knobel (2011) explain, new literacies involve more than decoding; they also require familiarity with multimodal ensembles and participation in digitally mediated networks. However, even this work is now outdated as new developments show that multimodal literacy also includes understanding emojis, assessing infographics, navigating hypertext and hyperlinked content, and critically engaging with types of

media presented in spaces rife with disinformation (Rahmanu, 2024). Literacy becomes pluralized and softened as an evolving entity that more accurately reflects the multimodal, interactive reality of life.

In addition, teaching language transforms. Yu (2024) highlights that digital multimodal composition (DMC) becomes an increasingly important part of second-language writing; however, much research does not necessarily align with practice. Teachers must consider how to include multimodal texts in their classrooms, how to equitably assess multimodal comprehension and what pragmatic features are necessary to learn for survival in digitally mediated environments. Such considerations indicate that digital discourse is important not only for scholarship but also for pedagogical practicalities.

The scope of this study reflects these concerns. It begins with theoretical underpinnings—multimodal discourse analysis, social semiotics, cognitive load theory, multiliteracies framework—that create a foundation from which to analyze developments in digital dialogue. It continues by exploring the pathway from print discourse to screen discourse, highlighting its unique features—hypertextuality, convergence and algorithmic mediation. Next comes the attention to multimodal meaning making from textual hyperlinking to visual signs (memes, emojis), multimedia (YouTube), and embodied communication (Zoom). The subsequent sections focus on how digital discourse and multimodal meaning making influence linguistic evolution—from new literacies to linguistic innovations like internet slang and code-mixing to pragmatics, multilingualism and more. Finally, implications for education are raised based on empirical studies on success and struggle with multimodal pedagogy before looking ahead at what artificial intelligence, immersive technologies and multimodal learning analytics might mean for the future—but always underscoring the need for inclusiveness and accessibility in all digital spaces.

Hence, this study aims to do two things: provide a comprehensive overview of the current state of scholarship regarding digital discourse and multimodality and emphasize pedagogical/research implications based on this information for future linguistic inquiry. By placing linguistic development within this new arena of multimodality, I will demonstrate throughout that multimodality is not an optional addendum; it is an essential condition by which people must understand language today. Teachers, learners and policymakers must acknowledge this condition if they are to effectively maneuver through today's multifaceted communicative worlds.

2. Theoretical Foundations of Multimodal Discourse

The analysis of digital discourse calls for a comprehensive theoretical understanding that captures the multimodal nature of communication over time. When meaning is not restricted to linguistic, visual, auditory, gestural, and spatial resources, but rather constructed through their coalescence, a theoretical framework or methodology that includes only one of these resources or aspects is inadequate. In the last thirty years, several theories and perspectives have emerged to provide researchers and educators with a conceptual lens through which to address the multimodal reality of modern communication. Four perspectives are particularly relevant: Multimodal Discourse Analysis, social semiotics, Cognitive Load Theory, and multiliteracies pedagogy. These approaches highlight how multimodality both produces and teaches language development in digital spaces. Multimodal Discourse Analysis has become one of the most relevant theoretical frameworks in analysing communication across digital spaces. Rather than accessing a single mode as privileged, Multimodal Discourse Analysis notes that meaning emerges from the orchestration of the various modes within any given context.

As Chen (2020) reveals in his bibliometric review of the field, the scope of Multimodal Discourse Analysis has expanded significantly over the past decade. This is an important finding because, as the field grows, one realises that discourse in digital spaces is always multimodal; for example, a YouTube tutorial involves spoken narration, a visual demonstration, on-screen textual information, and potentially background music. Multimodal Discourse Analysis enables the exploration of how these resources function in tandem, rather than as mutually exclusive entities. More recently, Liu (2024) mapped the trends in multimodal discourse studies worldwide. He reveals how the field is shifting toward comparative and cross-cultural investigations, and that methodological developments—such as learning analytics and digital ethnography, are increasingly used to capture multimodal realities due to their richly composite features. At the centre of Multimodal Discourse Analysis is social semiotics, framed by Halliday's systemic functional linguistics and further explored by Kress and van Leeuwen. Social semiotics positions semiotic resources as non-neutrally aligned based on their historical and socio-cultural affordances. The potential for meaning arises from how each resource, in the form of images, gestures, layout, etc., has been accessed historically over time. Therefore, communicators can design access in aware ways that acknowledge affordances yet simultaneously work toward their communicative purpose in a given moment.

Thabet (2024), for example, argues that the social semiotic theory of multimodality situates meaning-making in a social and political act, where semiotic ensembles reveal broader ideological and cultural investments. He aligns Kress' framing of design with this notion to note that creation cannot exist without complicating resources to create new meaning. Adami (2022) suggests that agency within social semiotics relies upon design, the ability to compile resources in even more transformative and uniquely

disparate ways than previously enacted, aligns agency with dynamic, semiotic properties. While social semiotics and Multimodal Discourse Analysis position semiotic-multimodal engagement as more culturally and semiotically oriented, Cognitive Load Theory provides a psychological framework that investigates how learners engage with multimodal content. Cognitive Load Theory, like learning analytics, emerged from educational psychology and recognises differences between intrinsic load, extraneous load, and germane load as contributing or detracting factors to task complexity or instructional decisions. For example, multimodality reduces extraneous load in digital spaces when aligned—when narration is simultaneously provided with an appropriate visual—and can reduce the perceived cognitive overload of multimodal communication, allowing for clearer comprehension. For example, Guerrero-Sosa (2025) notes in his systematic review of multimodal learning analytics that future approaches to cognitive load theory in digital education rely on multimodal streams for the detection and measurement of engagement, thereby positioning a research-based emphasis on increased learning reliability. It is essential to note that interdisciplinary realms appeal to an analysis of Cognitive Load Theory. Those who analyse Learning Analytics, Historical Components, and Psychological Studies separate the realities of how learners process multimodality with outside observational elements through Environmental Contexts.

Finally, multiliteracies offer an approach to pedagogical applicability based on these understandings as well. Originally conceptualised by the New London Group (1996) and expanded by Cope and Kalantzis (2009, 2023), with recent studies by Kalantzis and Cope (2023), the multiliteracies framework notes that meaning-making is not based solely on alphabetic text but also on visuals, spatial, gestural and multimodal resources. Multiliteracies pedagogy asserts four knowledge processes for access through experience, conceptualisation, analysis, and application, facilitating creation-oriented student engagement with multimodal texts (in a collaborative and cross-disciplinary manner). Recent studies by Kalantzis and Cope (2023) have found multiliteracies to be an appropriate basis for equity of access in diverse media contexts. In addition, Diamantopoulou and Ørevik's (2021) volume on *Multimodality in English Language Teaching* expands multiliteracies pedagogy into practical application with materials and classrooms worldwide boasting success in student engagement and achievement. Hence, these combined frameworks simplify an analysis of digital discourse. Multimodal Discourse Analysis and social semiotics create the semiotic-complex cultural discourse; Cognitive Load Theory provides insight into processing such complex facts; multiliteracies provide pedagogical connections necessary for classroom realities that develop language based on all three approaches, practically suggesting that there is far too much emphasis placed on linguistic development from a purely verbal standpoint when it comes to digital spaces. Through combined realities, it is clear that elsewhere it is inseparable.

3. The Evolution of Digital Discourses

The evolution of digital discourse proves a definitive departure from prior moments of discourse. For centuries, discourse has operated according to the printed page, with communicative norms that surround linearity, permanence, and the beauty of the alphabet. However, as technology has emerged and developed, discourse has increasingly transitioned into interactive, ephemeral, multimodal spaces guided more and more by algorithmic mediation. Thus, the evolution is not merely a tech replacement, but rather a shift in logic in which language operates within social life.

One of the first developments to mark this transition was the advent of hypertext. Hypertext dramatically departed from the linearity of print. Hypertextuality enables a reader to traverse multiple texts, engaging in exploration rather than sequential assimilation. Hypertext marks a transformation of textuality, turning readers into users who must interactively make meaningful pathways throughout networks of meaning (Landow, 2006). The non-linearity and participatory elements of hypertext foreshadowed so many communicative engagements in contemporary digital discourse—from social media feeds to linked multimedia worlds.

Convergence has also become a hallmark of digital discourse. Convergence merges media modalities—print, image, video, sound—into hybrid communicative spaces. A piece of online journalism, for example, may feature embedded video, hyperlinks, podcasts, and interactive graphics that all mutually construct meaning. Social media raises the stakes even further: a tweet combines text, emoji, GIFs, hashtags and links to convey a similar composite meaning. Hence, convergence proves how digital discourse is rarely monomodal and often constructed through the overlap of various semiotic resources (Jenkins, 2006).

Furthermore, the relationship between digital discourse and technology is forever changed. Unlike earlier media, where authorship held supreme authority, automated systems now guide discourse with predominance. According to Bucher (2018), algorithms do not merely curate but intervene within communication, setting which voices will be boosted or silenced, what discourses will pervade and how interaction will occur. Predictive text, autocorrect, and generative language models become powerful meaning makers, regardless of the intended author's agency. According to Garcés-Conejos Blitvich and Bou-Franch (2018), this intervention plays a central role in third-wave digital discourse studies, which pay closer attention to platform-mediated affordances and constraints, as well as identity construction and stance in interaction and online contexts.

In addition to new mediative resonances brought forth by convergence and algorithmic motivation, digital discourse operates according to new temporalities. Where print excels in durability, many forms of digital discourse have transience as their goal.

Snapchat, Instagram Stories, and even TikTok rely on fleeting moments to convey communication, although ephemeral discourses still allow for incalculable sharing—even in remix culture—forever archived. Lyons (2018) notes that even in text-focused digital writing contexts, multimodal cues—such as font sizes, spacing, and layout—are infused with rhythms and emotionally charged embodiment. These stylistic signals transform "writing" as a tool in a digital context, blurring the line between speech and writing, as well as permanence and transience, in terms of digital expectations.

Recent critical insights have also examined the metaphors and materialities that bridge the gaps of digital textuality. For example, Eve (2024) explores the metaphors through which we understand digital texts—from "archive," "cloud," or "stream," implying how durability versus access relates to ownership versus accessibility. From this perspective, it is no longer just what happens when digital discourse happens, but also the language we use to frame it through ideological lenses. As Bolter (2001) notes in *Writing Space*, hypertextual digital remediation discards print culture's linear ideals to insert interactivity into a space once reserved for seamless construction between digitally based pages, thereby facilitating networked discourse under new pretences altogether.

Hence, therefore, these developments illustrate how digital discourse evolves from a drastic reordering of communicative expectations, rather than continuing the established patterns within print culture. Digital discourse champions interactivity over linearity, convergence over compartmentalisation, algorithmic co-authoring over personalisation, ephemerality over transient importance, and metaphorical frames over realistic understandings. This cumulative shift departs from the natural gains in language's evolution from social life over time, which necessitate new literacies, competencies, and awareness in critical intersectionality. Digital discourse is not static but dynamic; it is subject to change based on the possibilities of technology, cultural engagement, and social power at any given moment.

4. Multimodal Expressions in Online Communication

If the evolution of digital discourse represents a transformation of communicative logic, it is through multimodal meaning where such transformations are most dramatically realised. Online communication is rarely sent or interpreted solely through linguistic text; instead, a plethora of semiotic affordances, hyperlinks, images, emojis, sounds, video, and gestures—render meaning via the orchestration of these multimodal ensembles. These semiotic resources are not ornamental to communicative performance, reception, or growth in a digital context; instead, they are at the heart of how we compose, comprehend and engage. While linguistic text remains the centre of digital communications, its opportunities expand through hypertextuality, formatting, and spatial organisation. For example, hyperlinks transform words into pathways linking local texts and more extensive discursive networks, where readers become meaning-makers through co-created journeys (Landow, 2006). Typography and spatial organisation bear a semiotic resemblance as well: we read with spacing, capitalisations, and fonts that bear weight and imply meaning (emphasis, humour, urgency), which rely on prosodic or gestural equivalents. Lyons (2018) notes how such mechanisms bolster multimodal significance even on text-only platforms and asserts that much digital writing is rarely monomodal. Visually rendered communication embodies one of the more recognisable aspects of online discourse. Emojis, memes, GIFs, and infographics are powerful expressions of emotion, posture, and cultural awareness; emojis specifically serve as affective and pragmatic cues, softening imperative requests and acknowledging solidarity or irony (Danesi, 2017). Memes and GIFs operate as intertextual silences, drawing on shared cultural awareness; they serve as precise representations of meaning in a few visual and often textual words.

Xu et al. (2023) introduce the concept of "cross-modality discourse" to explain how visual and textual representations intertwine on platforms like Twitter, suggesting that meaning emerges from their combined semiotic affordances rather than from either mode alone. This understanding is essential for investigating memes and GIFs as legitimate forms of socio-political and cultural commentary, rather than merely entertaining forms of expression. Audiovisual negotiation has become commonplace through YouTube, TikTok and podcasting networks. Video integrates spoken language with moving images, backing sound, and superimposed text into small packages of meaning. Consider TikTok's propensity for users to create dynamic discourse through soundtracks, lip-syncing, gestures, and edited effects, developing a multimodal narrative in a brief time window. This demonstrates the creative potential of digital multimodality as users remix and recontextualise cultural resources to express identity creation and communication.

Podcasts may focus more exclusively on auditory sentiment yet utilise vocal features—such as intonation, rhythm, and style—to establish intimacy and authenticity, because even if listeners do not see the speaker, the voice remains an integral part of online presence development. Jin (2024) has posited that scholars must pay more attention to the audible dimensions of digital discourse as sound increasingly accompanies digital text and image for meaning-making purposes. Finally, while embodied communication has primarily been associated with face-to-face interaction for much of history, it is undergoing a resurgence in digital contexts. Platforms like Zoom and Microsoft Teams reintegrate gestures, gaze and facial expression into online discourse as a pathway

between speech and embodiment; during the COVID-19 pandemic, these modalities became essential for pragmatic guidance in situations where nonverbal cues were otherwise lost in translation. More recently, immersive technologies such as virtual reality (VR) and augmented reality (AR) have extended embodied negotiation into the three-dimensional digital sphere, where avatars use gestures to navigate virtual spaces for communicative purposes while maintaining simultaneous physical presence (Parmaxi, 2020). This suggests that embodiment remains an essential part of humanised interaction, regardless of technological mediation. The primary result of these cumulative modes is a profoundly layered approach to online communication; recipients are no longer tasked with interpreting monomodal texts but are empowered to strategically produce resources simultaneously across mediums. Such construction relies on newly developed literacies, the ability to interpret and critically assess multimodal aesthetics for both consumption and production. Subsequently, linguistic evolution within digital contexts becomes inextricably linked to shaped negotiation and understanding.

Empirical studies confirm that multimodal expression extends beyond informal social media use into classroom learning. For example, Fjørtoft (2020) analysed multimodal digital classroom assessments (MDCAs) in technology-rich environments where students combined text, image, and audio to demonstrate conceptual understanding. Similarly, Ørevik (2023) found that peer- and teacher-assessment of multimodal texts in English classes enabled fairer recognition of learners' semiotic competence, compared to traditional written tests. These findings underscore that multimodal design and evaluation are achievable classroom practices rather than abstract ideals. In a senior secondary ESL class, learners used Canva and Flipgrid to design multimodal presentations combining voiceovers, emojis, and subtitles to express identity. Teachers reported that students with limited writing proficiency excelled in visual and auditory design, illustrating how multimodality expands equitable participation. (Alfathira et al., 2024).

5. The Influence of Digital Discourses on Linguistic Development

The preceding discussion of multimodal expression naturally leads to its implications for linguistic growth, explored in the following section. The influence of digital communication on linguistic development is profound. It has redefined the traditional concept of language acquisition, which was once perceived as a stable mastery of alphabetic shapes. Today, scholarly research indicates that acquisition occurs in diverse, interconnected, and algorithmically influenced spaces. Learners now acquire competencies in reading, writing, viewing, listening, designing, and interacting, while pragmatically adapting to various platform expectations, multicultural interactions, and the multilingualism that has become second nature online.

These two shifts impact our understanding of linguistic development in the digital age, particularly in relation to new literacies. According to Apata (2023), critical literacy, one of the main literacies of the 21st century, is crucial for success in educational settings, professional endeavours, and life management. Digital literacy is no longer a footnote to print literacy, but rather a set of practices required for navigating, evaluating, and making sense of multimodal texts. A large systematic review reveals ten years' worth of findings to suggest how digital literacy is critical (1) awareness of online information acquisition and assessment; (2) fluency in networks and communities with multimodal texts, and (3) participatory competence in various arenas of engagement (Tinmaz & Lee, 2022). In the language context, the emergence of informal digital English learning (IDLE) represents a significant transformation. A meta-analysis published in *System* demonstrates how learners' extramural efforts—such as streaming, gaming, fan fiction, and social networking—correlate with various forms of growth, including vocabulary development, listening improvements, and increased willingness to communicate, mediated by ecological variables (Guo & Lee, 2023). A quantitative study in computer-assisted language learning suggests that IDLE connects learners' willingness to communicate to their confidence and self-efficacy; thus, motivation and self-assuredness serve as critical mediators between digital practice and measured development (Zhumabek et al., 2023). Taken together, these findings reconceptualise literacy as plural, dynamic and a set of digital-visual-media literacies with affective and social characteristics.

When it comes to linguistic developments and adaptations, digital discourse has not only accelerated the evolution of internet slang and orthographic creativity but also normalised code-mixing and translanguaging as a standard approach to daily interactions. Early studies of 'networked multilingualism' have demonstrated that social media debates frequently incorporate diverse languages and styles within a single comment thread. More recent analyses have portrayed translanguaging as a multimodal phenomenon, where users exploit scripts, languages, typography, visuals, and platform features to achieve specific social acts such as representation or stance. This is not a random drift; it's an adaptive behaviour based on affordances and audience design considerations. Therefore, online multilingualism is a flexible resource for representation, identity, and alignment that extends linguistic growth beyond powerful named languages into flexible, situated repertoires.

In multilingual classrooms, digital multimodal composing (DMC) tasks have proven particularly effective. Jiang, Zheng, and Wu (2024) demonstrated how students in Content and Language Integrated Learning (CLIL) environments used translanguaging and visual-textual design to build disciplinary literacy and intercultural awareness. This empirical evidence highlights how multimodal discourse practices can strengthen linguistic agility and identity construction in diverse classrooms.

Digital spaces also reconceptualise pragmatic competence. Where people offline can observe prosody, gesture and gaze to interpret intent, online users must navigate stance and politeness through modal devices such as emojis, GIFs, typography, pacing and linking. Corpus-based analyses suggest that emojis possess systematic pragmatic functions, including conveying affect, hedging or intensifying force, indicating irony or humour, and facilitating rapport management (Li, 2018; Bai et al., 2019). Review studies from quantitative work that compile emoji sentiment through millions of tweets, which have developed solid polarity profiles that speakers can use to soften criticism/hype enthusiasm/or alignment (Kralj Novak et al., 2015). More recent experimental work shows that emojis can even reverse the general perceived meaning of a text if they contradict the written word. This additional layer highlights the importance of cross-modal attentiveness over print-based considerations (Caspi et al., 2025). Thus, learners develop new routines for managing face needs, tonality calibration, and repair efforts within channels that distribute cues through multiple modes, where platform conventions—such as threading responses, reacting/reactivity/ephemerality—impact interpretation.

Finally, digital spaces facilitate more intercultural and multilingual exchanges than ever before. Networked platforms collapse time and distance; contact zones expand where users must negotiate cultural reference points across languages and humour/norms based on a dominant tongue. Studies reveal that "mixing" often tends toward strategic endeavours: alternation marks shifts in stance, indexes communities of practice, or secures affordances available within a given platform (Androutopoulos, 2015; Ren, 2024). For linguistic development, potential realms of exposure are twofold: passive reception of varied offerings enhances the receptive repertoire. At the same time, active participation in multilingual exchanges fosters productive agility—learners learn new forms, as well as how/when/why to employ them in digitally mediated spaces.

Hence, linguistic development in a digital age is modal, social and ecological. New literacies broaden what counts as competent engagement; developments and translanguaging illustrate adaptive use across genres/situations/languages; pragmatic competence is reframed to interpret composition where emojis/typography/pacing/linking matter. This does not lead to a diminishing of language but rather to its remaking under contemporary communicative circumstances—an increased notion of linguistic repertoire shaped by platforms/intermediaries/and datafied responsiveness.

6. Implications and Future Directions in Digital Linguistic Development

Hence, the future of digital communication predicts increasingly complex developments. Linguistic growth will be shaped by increasing artificial intelligence, greater empathetic implementations of immersive worlds (AR and VR), and the ethical responsibility to ensure such digital communication is equitable and inclusive. At the same time, research and teaching must adapt to such changes, forming baseline frameworks which not only accommodate new modalities but also work to minimise their risks.

Digital equity remains a decisive concern across AI, AR/VR, and immersive modalities. As UNESCO (2023) stresses in its "Guidelines for AI in Education," fairness requires transparent design and contextual adaptation, particularly in under-resourced regions. For instance, educators can integrate AI-driven captioning tools in multilingual classrooms to enhance accessibility for hearing-impaired learners. Educators can mitigate algorithmic bias by combining AI-supported feedback with human moderation, foregrounding cultural and linguistic plurality. Similarly, equitable access to immersive technologies depends on adopting Universal Design for Learning (UDL) principles and open-source platforms that reduce hardware barriers (Heilala et al., 2025). Integrating these safeguards transforms ethical awareness from an abstract principle into a pedagogical routine—ensuring inclusivity and respect for diverse learners in digitally mediated communication.

Artificial intelligence, in many forms, is already reshaping communication channels and language acquisition. Not only does AI include predictive text or translated speech, but large language models (LLMs) are also present in classrooms, responsible for drafting, providing feedback, and even facilitating multimodal composition. Pandey (2025) suggests that first-year writing instructors have been put in a position to determine whether AI supports literacy in multimodal instruction for digital contexts by offering scaffolding for creative response or whether it undermines the authenticity of writing through unnecessary remediation of ideas and overreliance. Not only this, but Zawacki-Richter et al. (2019) find that as AI in higher education grows exponentially, teacher involvement is required to ensure it's not a substitute for learning needs. Essentially, this means that linguistic growth will no longer exist apart from AI but instead, a hybridised intersection that requires critical literacies relative to authorship, bias and responsible usage. Immersive technologies will also reshape language learning and discourse practices. Unlike physical or digital classrooms, VR environments can bring avatars into learners' lives and provoke embodied perspectives in realistic interactions that would otherwise not flourish until well into their integrated lives.

Parmaxi (2020) discusses the implications of VR to foster motivation and situated use of language, while AR extends opportunities into the physical world with overlays of language use and culture. AR and VR create an embodied perspective where situatedness emphasises that it is not only cognitive use of language but also sensory and experiential; this shapes how learners come to possess pragmatic competence, intercultural communication ability, and multimodal literacy when such immersive spaces are made readily available. Another potential future direction involves an intersection of multimodal learning analytics (MMLA)

driven teaching and scholarship. As Guerrero-Sosa (2025) notes, researchers are beginning to utilise sophisticated data collection beyond written products that record learners' gestures, voice, gaze, and even physiological responses. Such multimodal findings can help researchers understand how learners engage with digital discourse and offer real-time recommendations to teachers as they adapt their lessons in the moment. However, Rowsell (2025) cautions against an overwhelming approach to MMLA in the forthcoming arena of post-digital literacies, which threatens environments with surveillance and learners as reduced numbers on paper. The ideal future intervention will strike a balance between the newfound innovation and privacy that empowers students without exploiting them.

Also, Dressman (2020) suggests that multimodal worlds have shifted learning away from mere print-based practices toward all-encompassing environments that include historical studies like Blikstein and Worsley (2016), who found that multimodal learning analytics captured complex behaviours in practical findings before Guerrero-Sosa's (2025) literature review came years later about such scholarship's advancement after interdisciplinary trends took hold. Hence, the future of linguistic development must account for universal access. Generative AI systems have the potential to prompt new discourse dynamics, but fail to champion equity as they perpetuate socio-cultural biases coded within their millennia-old databases (Karunanayaka et al., 2023). Similarly, AR/VR access isn't always possible due to expensive hardware or sensory impairments unless universal design, a concept that promotes the creation of products and environments that are usable by all people, to the greatest extent possible, without the need for adaptation or specialised design, is part of the goal; Heilala et al. (2025) suggest that the multimodal potential for generative AI—from text-to-image, text-to-sound or otherwise—has yet to fully explore such access but could assist if sensibly rendered; this offers insight for future scholarship on affordances but ethical considerations of equity for marginalised voices.

While this paper does not conduct original empirical measurement, it integrates recent classroom studies that empirically validate multimodal pedagogy across varied learning contexts. A persistent gap in multimodal pedagogy is the fair and consistent assessment of multimodal student work. Current scholarship (De Oliveira & Gallardo-Echenique, 2024) recommends analytic rubrics that evaluate design, coherence, and reflection rather than merely linguistic accuracy. Teachers can triangulate text, image, and sound outputs using process-oriented portfolios or peer review to maintain reliability. Such empirical frameworks exemplify how theory translates into classroom-ready evaluation strategies, addressing the measurement problem noted earlier in this paper.

Complementary evidence from higher-education contexts (Midgette & Stewart, 2025), shows that multimodal assignments enhance inclusivity and learner engagement when assessment rubrics emphasise meaning-making processes rather than surface linguistic form. Such approaches bridge epistemic and cultural gaps, validating students' multiple semiotic repertoires while maintaining academic rigour.

Therefore, the future of digital linguistic development is inherently connected to technological advancements, teaching refinements, and ethical implications that champion a new world order of participatory education, where equity reigns supreme. AI, AR, and VR will exponentially enhance opportunities for communication; multimodal learning analytics will better establish interconnected understandings through data collection from expanded methods of language acquisition, naturalised from digitalised worlds, relative to how people learn throughout their lives. Yet these opportunities must be couched by critical reflection into programs for inclusion equity that champions cross-curricular literacy champions authorship reliability. Instead of merely learning to use such programs or systems, scholars must develop associated pedagogy for critical multimodal literacies to grow, which enables learners not only to use but also to understand the cultural politics and ethical considerations that accompany them.

7. Conclusion

The findings about digital discourses and multimodal expressions inevitably suggest a new lens through which to view twenty-first-century linguistic development. As more and more communication patterns emerge in a digital context, language is no longer only alphabetically based. However, it is instead woven together with visuals, auditory, gestural, and interactive design elements. This is not merely stylistic; it redirects our notions of literacy, pragmatic strategies and possibilities for multilingual engagement. Hence, where communication exists in a digital context, it is multimodal. This is a shift that social scientists, educators and policymakers need to reconsider all that they know about language and meaning.

This study synthesises information about the interdisciplinary theoretical underpinnings of multimodal discourse analysis, as supported by social semiotics, cognitive load theory, and multiliteracies pedagogy, thereby establishing a promising framework for studying how communication patterns evolve in a contemporary context. Not only does each theoretical proposition assert that meaning is not inherently a product of language systems but developed through the orchestration of relevant semiotic resources as determined by the socio-cultural context, but they also posit that digital literacy requires both critical and creative engagements with such multimodal ensembles to prepare learners for how ever increasingly complicated yet mediated and socially aware communication patterns necessitate awareness and production.

Histories of digital discourses suggest that the transition from print to screen has been characterised by certain patterns of evolution over time, including interactivity, hypertextuality, media convergence, and algorithmic mediation. Communication is participatory, non-linear and inextricably bound by automatic sentiment with respect to predictive text, curated content and authorship determined through AI algorithms. These developments are both promising and concerning; on the one hand, they facilitate linguistic exploration and democratised authorship; on the other hand, they contend with ownership challenges, issues of authenticity and the potential reach of algorithmic power over language itself (Bucher, 2018; Garcés-Conejos Blitvich & Bou-Franch, 2018).

The historical overview of various kinds of multimodal expressions supports the claim that language exists today as intertwined with text, visual images, audiovisual media, and embodied gestures, which are no longer optional in digital discourse. Emojis, memes, GIFs, podcasts, TikTok videos and web-based video calls/texting substantiate the multimodal reality of language today—and while they support new means for expressing affect and stance, they also require new literacy efforts from users to deduce the semiotic richness of such digital contexts (Lyons, 2018; Danesi, 2017).

The impact of digital discourse on linguistic development is multilayered—new literacies have emerged in addition to, and instead of, previously established reading/writing opportunities; creative methods have explored slang and code-mixing, as well as multimodal pragmatic entry, in addition to word use; multilingual opportunities have expanded in the virtual world. These developments suggest that language acquisition does not occur in the periphery, but instead, digital spaces often serve as the epicentre for real-world growth efforts.

Teaching and assessment efforts must be reconsidered in light of entrepreneurial innovation to promote best practices for teaching during a time when digital multimodality is prevalent. However, research indicates that even though schools promote best literacy efforts through multimodal pedagogies for vocabulary acquisition, pragmatic development, and learner engagement, the news is not all good in areas of teacher preparedness and continued institutional support (Yu, 2024; Rahmanu, 2024). The complications of assessing multimodal production fairly and consistently pose problems for advocating for such inclusion in relative comparison to traditional standards.

Hence, AI, augmented reality, and equitable access will serve as the determining factors for the future of linguistic development. Educators will rely on AI-generated opportunities that personalise feedback, but questions about fairness and the balance between automation and humanisation will determine the pros/cons of such development (Zawacki-Richter et al., 2019; Karunanayaka et al., 2023). Mixed reality extends knowledge into augmented learning, facilitating situated growth, while multimodal learning analytics suggest nuanced options for learner engagement assessments. At the same time, scholars must value equity of access and cultural responsiveness to avoid exploiting personal or situational gaps.

Thus, the future is not merely an extension of contemporary ideas about digital discourse/multimodal expression, but an entirely new frontier whereby linguistic development over time becomes a paradigm shift beyond anything ever explored before. Where digital communication would challenge all patterning previously established relative to linguistic growth comes a new frontier seeking regional equity. Therefore, educators must embrace multilinear/layered opportunities to support analyses through perspectives that make them valuable. Researchers must be innovative in their respective methodologies, seeking effectiveness proportional to their needs. Policymakers need to champion resources and opportunities for equitable access to ensure that people are sufficiently prepared to respond. The inclusion of such empirical models (Fjørtoft, 2020; Ørevik, 2023; Jiang et al., 2024; Midgette & Stewart, 2025) strengthens the pedagogical realism of digital discourse scholarship by linking theoretical frameworks to classroom enactment. These studies demonstrate that multimodal communication can be systematically designed, scaffolded, and assessed, ensuring that linguistic development research remains anchored in verifiable educational practice.

Hence, as digital contexts evolve, so too must our investments in how we think about such phenomena, so that linguistic development, can advocate for interdisciplinary advances alongside social equity and justice.

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