

THE DEVELOPMENT OF MULTIMODAL PRAGMATIC INFERENCE IN EFL LEARNERS THROUGH MEME INTERPRETATION TASKS

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ABSTRACT

In contemporary digital communication, meaning is increasingly constructed through the interaction of visual, textual, and contextual resources rather than through linguistic forms alone. Internet memes exemplify this multimodal communicative environment by combining images, captions, humor, and intertextual references to generate implicature, irony, evaluative stance, and sociocultural meaning. However, English as a Foreign Language (EFL) instruction continues to emphasize literal comprehension and grammatical accuracy, often leaving learners insufficiently prepared to interpret implicit and multimodal meanings in digital discourse. Addressing this gap, the present study investigates the development of multimodal pragmatic inference in EFL learners through scaffolded meme interpretation tasks. Grounded in Paul Grice's theory of implicature and multimodal discourse theory proposed by Gunther Kress and Theo van Leeuwen, this qualitative longitudinal classroom study explores how learners gradually develop inferential reasoning across multiple instructional cycles. Fifteen junior high school EFL learners participated in a series of meme interpretation activities designed to elicit implicature recognition, irony detection, stance attribution, and visual-verbal integration. Data were collected through written interpretations, reflective responses, and guided group discussions. The findings reveal a clear developmental trajectory. Initial learner responses were dominated by literal interpretation and surface-level visual description. Learners progressively demonstrated context-sensitive inferential reasoning, effectively integrated visual and linguistic cues, and identified implied meanings, evaluative stance, and sociocultural references embedded in the memes. The study argues that multimodal pragmatic inference develops through scaffolded engagement with digital texts and should be considered an essential component of contemporary pragmatic competence in EFL learning. By providing longitudinal classroom evidence, this research contributes to digital pragmatics and instructed second language learning while highlighting the pedagogical potential of meme-based activities for developing learners' multimodal interpretive competence.

Keywords: multimodal pragmatic inference; EFL learners; meme interpretation; digital pragmatics; multimodal discourse analysis

ABSTRAK

Dalam komunikasi digital kontemporer, makna semakin dibangun melalui interaksi sumber daya visual, tekstual, dan kontekstual, bukan hanya melalui bentuk linguistik saja. Meme internet mencontohkan lingkungan komunikatif multimodal ini dengan menggabungkan gambar, keterangan, humor, dan referensi intertekstual untuk menghasilkan implikatur, ironi, sikap evaluatif, dan makna sosiokultural. Namun, pengajaran Bahasa Inggris sebagai Bahasa Asing (EFL) terus menekankan pemahaman literal dan ketepatan tata bahasa, yang seringkali membuat pembelajar kurang siap untuk menafsirkan makna implisit dan multimodal dalam wacana digital. Untuk mengatasi kesenjangan ini, penelitian ini menyelidiki perkembangan inferensi pragmatik multimodal pada pembelajar EFL melalui tugas interpretasi meme yang terstruktur. Berdasarkan teori implikatur Paul Grice dan teori wacana multimodal yang dikemukakan oleh Gunther Kress dan Theo van Leeuwen, studi kelas longitudinal kualitatif ini mengeksplorasi bagaimana pembelajar secara bertahap mengembangkan penalaran inferensial di berbagai siklus pembelajaran. Lima belas siswa SMP yang belajar bahasa Inggris sebagai bahasa asing (EFL) berpartisipasi dalam serangkaian aktivitas interpretasi meme yang dirancang untuk memunculkan pengenalan implikatur, deteksi ironi, atribusi sikap, dan integrasi visual-verbal. Data dikumpulkan melalui interpretasi tertulis, respons reflektif, dan diskusi kelompok terarah. Temuan menunjukkan lintasan perkembangan yang jelas. Respons awal siswa didominasi oleh interpretasi literal dan deskripsi visual tingkat permukaan. Seiring waktu, siswa semakin menunjukkan penalaran inferensial yang peka terhadap konteks, mengintegrasikan isyarat visual dan linguistik secara lebih sistematis, dan mengidentifikasi makna tersirat, sikap evaluatif, dan referensi sosiobudaya yang tertanam dalam meme. Studi ini berpendapat bahwa inferensi pragmatik multimodal berkembang melalui keterlibatan terstruktur dengan teks digital dan harus dianggap sebagai komponen penting dari kompetensi pragmatik kontemporer dalam pembelajaran EFL. Dengan memberikan bukti kelas longitudinal, penelitian ini berkontribusi pada pragmatik digital dan pembelajaran bahasa kedua yang terstruktur sambil menyoroti potensi pedagogis dari aktivitas berbasis meme untuk mengembangkan kompetensi interpretatif multimodal siswa.

Kata kunci: Inferensi Pragmatik Multimodal; Siswa EFL; Interpretasi Meme; Pragmatik digital; Analisis Wacana Multimodal

INTRODUCTION

Pragmatic competence is central to successful communication because language users frequently interpret meanings that are implied, indirect, socially indexed, and contextually negotiated rather than explicitly stated (Grice, 1975; Thomas, 1983). In English as a Foreign Language (EFL) learning, pragmatic competence involves not only understanding vocabulary and grammar but also developing the ability to infer intended meaning from contextual and sociocultural cues. In digitally mediated communication, this interpretive process becomes increasingly complex because meaning is rarely conveyed through verbal language alone. Users are required to integrate written text, images, layout, facial expression, intertextual references, and platform-specific discourse conventions to construct interpretation within compressed digital environments (Tagg, 2015). Consequently, contemporary EFL learners need to develop multimodal pragmatic inference as an essential component of communicative competence in digital interaction.

Internet memes provide a particularly relevant site for examining the development of multimodal pragmatic inference. Memes typically combine short textual expressions with visual templates, symbolic characters, cultural references, and humorous framing, creating compact multimodal discourse units that rely heavily on contextual interpretation (Shifman, 2014; Yus, 2021). Their interpretation frequently depends on implicature, irony, exaggeration, evaluative stance, and shared digital knowledge. As a result, literal decoding alone is insufficient because interpreters must coordinate linguistic, visual, and sociocultural cues to infer implied meanings embedded within the meme. In this sense, memes function not merely as humorous digital artifacts but as multimodal interpretive tasks that require complex pragmatic reasoning and inferential processing (Al Rashdi, 2020; Domínguez Romero & Bobkina, 2021).

This study is grounded in pragmatic theory and multimodal discourse analysis. From a pragmatic perspective, Paul Grice's theory of implicature explains how interlocutors derive implied meanings through contextual assumptions and inferential reasoning (Grice, 1975). Similarly, relevance theory proposes that interpreters select contextually plausible meanings by balancing cognitive effort and interpretive relevance (Sperber & Wilson, 1995). These perspectives are particularly important for understanding how learners process indirect and implicit meanings in digitally mediated discourse.

From a multimodal perspective, meaning construction emerges through the interaction of multiple semiotic resources rather than through language alone. Gunther Kress and Theo van Leeuwen (2006) argue that images, visual arrangement, and design elements function as meaning-making resources that actively shape interpretation. Within digital discourse, multimodal communication is further intensified by intertextuality, compression, humor, and platform-specific communicative conventions (Adami, 2016; Dynel, 2021). Digital pragmatics therefore provides an important framework for examining how online discourse genres such as memes encourage context-sensitive inferential interpretation.

Previous studies in second language pragmatics have investigated speech acts, politeness, pragmatic instruction, and technology-mediated communication in EFL learning contexts (Brown & Levinson, 1987; Ren, 2022). Meanwhile, studies on memes in language learning suggest that meme-based activities may support learners' pragmatic awareness, visual literacy, engagement, and critical interpretation (Al Rashdi, 2020; Altukruni, 2022; Domínguez Romero & Bobkina, 2021). However, existing studies have primarily focused on motivation, classroom engagement, or general digital literacy. Few longitudinal classroom studies have examined how EFL learners gradually develop multimodal pragmatic inference through scaffolded interpretive practice over time. In particular, limited attention has been given to how learners progressively integrate linguistic, visual, contextual, and sociocultural cues when interpreting implicature, irony, evaluative stance, and visual-verbal incongruity in digital texts.

Despite the growing interest in memes and digital texts in EFL learning, existing research has largely emphasized learner motivation, classroom engagement, humor appreciation, and general digital literacy rather than the developmental dimension of multimodal pragmatic competence. Moreover, many previous studies rely on short-term classroom observations or isolated instructional activities, providing limited insight into how learners gradually develop inferential strategies across sustained pedagogical interaction. As a result, the developmental process through which EFL learners learn to integrate linguistic, visual, contextual, and sociocultural cues in interpreting digitally mediated discourse remains underexplored.

This study addresses these limitations by adopting a qualitative longitudinal perspective to examine the gradual development of multimodal pragmatic inference through scaffolded meme interpretation tasks. Unlike previous studies that primarily examine memes as motivational or supplementary classroom materials, the present study conceptualizes memes as multimodal inferential environments through which learners actively construct pragmatic interpretation. The novelty of this study lies in its focus on learners' evolving inferential processes across multiple instructional cycles, particularly in relation to implicature

recognition, irony interpretation, evaluative stance attribution, and visual-verbal integration within digital discourse.

By tracing learners' interpretive development over time, this study contributes to expanding current discussions in digital pragmatics, multimodal discourse analysis, and instructed second language pragmatics. More importantly, the study proposes that multimodal pragmatic inference should be viewed not as an incidental outcome of digital exposure, but as a systematically developable component of contemporary pragmatic competence that can be cultivated through scaffolded engagement with digital texts in EFL classrooms.

Addressing this gap, the present study investigates the development of multimodal pragmatic inference among fifteen junior high school EFL learners through scaffolded meme interpretation tasks conducted across multiple instructional cycles using ten curated internet memes. By examining learners' evolving inferential strategies and interpretive development over time, this study contributes to emerging discussions in digital pragmatics, multimodal discourse analysis, and EFL pedagogy. More specifically, the study highlights how multimodal pragmatic competence can be systematically cultivated through guided engagement with digital discourse practices in classroom settings.

The study is guided by the following research questions:

1. How do EFL learners' multimodal pragmatic inference strategies develop across scaffolded meme interpretation cycles?
2. What interpretive challenges emerge when learners interpret implicature, irony, evaluative stance, and visual-verbal incongruity in internet memes?
3. How do scaffolded meme interpretation tasks support learners' development of integrated multimodal pragmatic reasoning?

The following section outlines the methodological framework employed to investigate the development of multimodal pragmatic inference among EFL learners across multiple instructional cycles.

RESEARCH METHOD

Research Design

This study employed a qualitative longitudinal classroom design. The design was selected because the study aimed to trace developmental shifts in EFL learners' multimodal pragmatic inference over time rather than to measure statistical gains through experimental comparison. This orientation is appropriate for examining pragmatic development as a gradual process shaped by repeated interpretation, reflection, and contextualized language use (Ren, 2022; Thomas, 1983). The study specifically focused on how learners developed inferential strategies through scaffolded meme interpretation tasks conducted across multiple instructional cycles.

The study was conducted over six instructional sessions across a two-month period. The instructional process consisted of five scaffolded interpretation cycles involving meme observation, guided interpretation, collaborative discussion, reflective explanation, and contextual meaning negotiation. The longitudinal orientation allowed the researcher to observe developmental changes in learners' reasoning from literal interpretation and surface-level visual description toward more context-sensitive, visual-verbal, and stance-oriented pragmatic interpretation. The unit of analysis was the learner's interpretive response to meme-based tasks, including written interpretations, reflective explanations, and guided discussion contributions.

Participants and Sampling

The participants were fifteen junior high school EFL learners selected through purposive sampling. The participants were eighth-grade students who were actively learning English and regularly engaged with digitally mediated communication through social media and online interaction. Purposive sampling was considered appropriate because the study prioritized developmental depth, repeated observation, and detailed analysis of learners' evolving interpretive strategies rather than statistical generalization.

Participant identities were anonymized throughout the analysis to maintain ethical confidentiality. The learners participated in scaffolded meme interpretation activities designed to elicit implicature recognition, irony interpretation, evaluative stance attribution, and visual-verbal integration.

Data and Instruments

The data consisted of iterative meme interpretation tasks, written reflections, guided group discussions, and researcher observation notes collected across multiple instructional cycles. The instructional materials consisted of ten curated internet memes selected to represent key features of multimodal pragmatic inference, including implicature, irony, stance, visual-verbal incongruity, emotional positioning, and sociocultural reference (Dynel, 2024; Kress & van Leeuwen, 2006; Yus, 2021).

The instruments included meme interpretation prompts, written reflection sheets, guided discussion protocols, and a qualitative pragmatic coding framework. The interpretation prompts required learners to explain the intended meaning of each meme, identify relevant linguistic and visual cues, and justify how contextual and sociocultural knowledge contributed to their interpretation.

Figure 1 illustrates the curated internet meme stimuli used across the scaffolded multimodal interpretation cycles. The stimuli were organized as a 2×5 panel to maintain analytic traceability throughout the longitudinal analysis.



Figure 1. Curated internet meme stimuli used across scaffolded multimodal interpretation

Source of data: <https://drive.google.com/drive/folders/1-BUgv2YA0VDciEdidibbuD8k5HpD1WsO?usp=sharing>

Note. The ten meme images were used as classroom interpretation stimuli and were labeled Meme 1–Meme 10 for analytic traceability.

Research Data Structure and Analytic Function

Table 1. Research Data Structure and Analytic Function

Data Source	Amount	Evidence Type	Analytic Function
Participants	15 junior high school EFL learners	Written interpretations, reflections, and discussions	To trace developmental shifts in interpretive strategies
Meme stimuli	10 curated internet memes	Visual-verbal digital discourse materials	To elicit implicature, irony, stance, and multimodal integration
Instructional cycles	Five scaffolded instructional cycles	Repeated meme interpretation activities involving observation, inferential explanation, collaborative discussion, and reflection	To observe developmental changes in pragmatic reasoning over time
Written reflections	Individual learner responses	Reflective explanations of meaning and interpretive cues	To examine metapragmatic awareness and inferential reasoning
Guided discussions	Group interaction data	Negotiated interpretation and revised reasoning	To identify scaffolded development of multimodal pragmatic inference

Data Collection and Analysis

Data collection was conducted through multiple instructional cycles. In each cycle, learners engaged with selected internet memes through observation, written interpretation, guided discussion, and reflective explanation activities. The scaffolded instructional process encouraged learners to move beyond literal interpretation by identifying visual-verbal relationships, contextual assumptions, implied meanings, and evaluative stance embedded within the memes.

The data were analyzed using recursive qualitative pragmatic coding informed by inferential pragmatics and multimodal discourse analysis. Learner responses were coded for implicature recognition, irony interpretation, stance attribution, visual-verbal integration, and sociocultural contextualization. Comparative longitudinal analysis was conducted across instructional cycles to identify developmental shifts in learners' multimodal pragmatic inference strategies over time.

Trustworthiness was strengthened through triangulation across written interpretations, reflective responses, guided discussions, and researcher observation notes. Repeated observations across instructional cycles also supported the consistency and credibility of the developmental analysis.

RESULT AND DISCUSSION

These findings reveal a systematic developmental trajectory in learners' multimodal pragmatic inference across the scaffolded instructional cycles. As summarized in Table 3, learners' interpretive strategies gradually shifted from literal decoding and surface-level visual description toward more integrated multimodal pragmatic reasoning. This progression demonstrates that multimodal pragmatic competence developed through repeated exposure to scaffolded interpretive practice involving verbal, visual, contextual, and sociocultural meaning negotiation.

Table 3. Developmental Trajectory of Multimodal Pragmatic Inference

Instructional phase	Dominant learner response	Main difficulty	Developmental evidence
Initial cycle	Literal interpretation and surface-level visual description	Learners focused on lexical meaning and visible image elements	Limited recognition of implicature, irony, and stance
Middle cycles	Emerging coordination of text, image, and context	Learners still needed guidance to justify inferential choices	Increased attention to visual-verbal incongruity and contextual assumptions
Later cycles	Integrated multimodal pragmatic reasoning	Remaining difficulty appeared in culturally specific references	Learners articulated evaluative stance, sociocultural cues, and implied meanings more clearly

In the first instructional cycle, learners' responses were dominated by literal interpretation and surface-level visual description. Many learners attempted to interpret the memes by translating the written text first while treating the visual element as supplementary rather than as an integral meaning-making resource. Their interpretations frequently focused on lexical meaning and visible image elements without recognizing implicature, irony, evaluative stance, or sociocultural references embedded in the memes. As shown in Table 3, learners demonstrated limited recognition of inferential meaning during this phase, consistent with pragmatic difficulty in second language interpretation (Ren, 2022; Thomas, 1983).

In these middle instructional cycles, learners exhibited increasing integration of text, image, and contextual assumptions. They became better at distinguishing between literal language and intended meaning, particularly in memes that featured irony, exaggeration, and visual-verbal incongruity. While a number of participants still required scaffolding and guided discussion to support inferential interpretations, their reactions demonstrated a greater understanding that meaning construction in memes requires multimodal integration rather than isolated textual decoding. This trend indicates that repeated scaffolded exposure prompted learners to reorganize their interpretive strategies toward more context-sensitive pragmatic reasoning.

By the later cycles of learning, the learners exhibited more integrated multimodal pragmatic reasoning. They engaged in increasingly evaluative stance, emotional positioning, sociocultural assumptions, and contextual explanation in interpreting their material. Instead of only specifying what was visible, learners described how verbal and visual cues linked to construct implied meanings. Table 3 shows that learners expressed implicature, stance, and sociocultural references with greater emphasis, but some problems still remained when interpreting culturally specific and highly intertextual meme content. These results show that multimodal pragmatic inference developed progressively through scaffolded interpretive engagement and collaborative meaning negotiation.

It also helps to reveal that the scaffolded meme interpretation tasks functioned as multimodal inferential environments where learners needed to coordinate verbal, visual, and contextual resources simultaneously. In other words, this developmental process may also reflect inferential restructuring, where the learners transitioned from form-based decoding to pragmatic interpretations based on an integrated multimodal approach. Instead of simply identifying what was written or visually displayed, learners began to explain how meaning was constructed through the interaction of textual cues, images, contextual assumptions, humor, and sociocultural references. This is consistent with digital-pragmatic views that interpretation of online discourse necessitates such dynamic inferential coordination across multiple semiotic resources (Dynel, 2021; Yus, 2021).

The ten curated memes used throughout the instructional cycles elicited different forms of multimodal pragmatic interpretation, including implicature recognition, irony detection, evaluative stance attribution, emotional inference, sociocultural contextualization, and visual-verbal integration. As summarized in Table 4, each meme stimulus was designed to foreground particular pragmatic features while simultaneously requiring learners to coordinate multiple interpretive resources.

Table 4. Curated Meme Stimuli and Pragmatic Focus

Meme	Target pragmatic feature	Main interpretive focus
Meme 1	Implicature	Inferring meaning beyond literal wording
Meme 2	Irony	Recognizing contrast between wording and intended meaning
Meme 3	Evaluative stance	Identifying attitude, criticism, or emotional positioning
Meme 4	Visual-verbal integration	Connecting image and text to construct meaning
Meme 5	Indirectness	Understanding implied intention
Meme 6	Emotional stance	Interpreting affective meaning from visual cues
Meme 7	Intertextual reference	Activating digital and cultural knowledge
Meme 8	Humor and exaggeration	Recognizing pragmatic exaggeration
Meme 9	Contextual reframing	Revising meaning through contextual information
Meme 10	Sociocultural reference	Linking meme meaning with shared cultural assumptions

Table 4 demonstrates that the meme stimuli functioned not merely as humorous classroom materials but as structured multimodal interpretive tasks. For example, Meme 1 primarily elicited implicature recognition by encouraging learners to infer meaning beyond literal wording, while Meme 2 focused on irony through contrasts between explicit wording and intended interpretation. Other memes emphasized evaluative stance,

indirectness, emotional positioning, intertextual reference, and sociocultural assumptions. These findings align with multimodal discourse perspectives which argue that meme interpretation requires the integration of verbal, visual, contextual, and cultural resources within digitally mediated communication (Adami, 2016; Kress & van Leeuwen, 2006; Sindoni et al., 2021).

Overall, the findings suggest that multimodal pragmatic inference is not an incidental byproduct of digital exposure but a developable interpretive competence that can be systematically cultivated through scaffolded engagement with digital discourse practices. The longitudinal evidence further indicates that learners' inferential development emerged gradually through repeated cycles of observation, interpretation, discussion, reflection, and contextual negotiation. Consequently, meme-based interpretive activities may provide a productive pedagogical space for developing contemporary pragmatic competence in EFL classrooms, particularly in relation to digitally mediated communication and multimodal discourse interpretation.

Interpretive Challenges in Multimodal Pragmatic Inference

The findings further revealed several recurring interpretive challenges that influenced learners' development of multimodal pragmatic inference. The most prominent difficulties included literal interpretation bias, surface-level visual description, difficulty recognizing irony, limited sociocultural schema, and misinterpretation of evaluative stance. These challenges emerged because learners initially tended to decode English lexical items separately before considering the interaction among verbal, visual, contextual, and sociocultural resources. Such patterns are consistent with EFL learning contexts in which classroom instruction frequently prioritizes grammar, vocabulary acquisition, and sentence-level comprehension rather than inferential pragmatic interpretation (Lee & Lee, 2020; Ren, 2022). In this sense, meme interpretation exposed an important gap between learners' linguistic knowledge and their developing multimodal pragmatic competence (Al Rashdi, 2020; Yus, 2021).

Literal interpretation bias was particularly visible during the early instructional cycles. Many learners translated the meme text directly without explaining the implied or evaluative meaning constructed through contextual inference. Similarly, surface-level visual description appeared when learners merely identified visible objects, facial expressions, or characters without connecting them to the speaker's communicative intention or stance. These responses suggest that learners initially treated images as supplementary illustrations rather than as integral semiotic resources contributing to pragmatic interpretation.

Irony interpretation also emerged as a major challenge. Learners frequently struggled to recognize that apparently positive or neutral wording could communicate criticism, frustration, sarcasm, or evaluative distance when combined with contradictory visual cues or contextual assumptions. In many cases, learners focused on the literal semantic meaning of the text while overlooking incongruity between verbal expression and visual framing. This finding supports digital-pragmatic perspectives that irony interpretation in online discourse requires complex inferential coordination between textual meaning, visual representation, and contextual expectation (Dyner, 2021; Yus, 2021).

Cultural and intertextual references created additional interpretive difficulty. Several meme formats depended on familiarity with digital genre conventions, shared online experiences, and culturally recognizable templates (Shifman, 2014; Tagg, 2015). When learners lacked relevant sociocultural schema, their interpretations often remained incomplete or overly literal. However, collaborative discussion and scaffolded questioning enabled learners to compare interpretations, reconsider assumptions, and negotiate contextual meaning more effectively. This suggests that multimodal pragmatic inference develops not only individually but also through socially mediated interpretive interaction.

Pedagogical Contribution of Scaffolded Meme Interpretation

The findings additionally demonstrate the pedagogical value of scaffolded meme interpretation tasks for developing multimodal pragmatic competence in EFL learning. The instructional activities encouraged learners to develop metapragmatic awareness by requiring them not only to interpret meme content but also to explain the inferential basis of their interpretations. Rather than simply translating textual content, learners were guided to identify multimodal cues, justify contextual assumptions, compare alternative interpretations, and revise initial readings through collaborative discussion. This process helped learners recognize that pragmatic meaning is inferentially constructed rather than directly transmitted through linguistic form alone, supporting perspectives from critical literacy, digital literacy, and multimodal pedagogy (Bacon, 2017; Bobkina & Stefanova, 2016; Domínguez Romero & Bobkina, 2021).

The scaffolded instructional design played a particularly important role in facilitating learners' interpretive development. The findings indicate that multimodal pragmatic inference did not develop

automatically through passive exposure to digital memes. Instead, developmental progress became visible when learners were systematically guided to examine how verbal and visual elements interacted, what contextual assumptions were required, whether meanings were literal or ironic, and what evaluative stance was being communicated. Through repeated interpretive cycles, learners gradually reorganized their interpretive frameworks from form-based decoding toward integrated multimodal pragmatic reasoning.

More broadly, these findings suggest that meme-based interpretive activities can function as productive pedagogical environments for cultivating contemporary pragmatic competence in digitally mediated communication. By engaging learners in collaborative inferential interpretation, scaffolded meme tasks support the development of context-sensitive reasoning, visual-verbal integration, sociocultural awareness, and evaluative interpretation. The study therefore contributes to ongoing discussions in digital pragmatics and EFL pedagogy by demonstrating that multimodal pragmatic inference is a developable competence that can be systematically fostered through guided engagement with digital discourse practices.

To synthesize the relationship between the research questions, empirical evidence, and interpretive findings, Table 5 presents the RQ-to-Evidence Matrix summarizing the main developmental patterns identified throughout the study.

Table 5. RQ-to-Evidence Matrix

Research question	Primary evidence	Main interpretation
RQ1: Development of inference strategies	Repeated written interpretations, reflections, and discussions across instructional cycles	Learners moved from literal decoding toward integrated multimodal pragmatic reasoning
RQ2: Interpretive challenges	Early-cycle responses and discussion data showing literal bias, surface visual description, irony difficulty, and cultural gaps	Challenges arose when learners failed to connect verbal, visual, contextual, and sociocultural cues
RQ3: Pedagogical support	Guided questions, peer comparison, and reflective explanations	Scaffolded meme tasks supported metapragmatic awareness and inferential restructuring

As shown in Table 5, the findings consistently indicate that learners' multimodal pragmatic inference developed progressively through repeated scaffolded engagement with meme-based interpretive activities. The matrix further demonstrates that developmental shifts, interpretive challenges, and pedagogical support mechanisms were closely interconnected throughout the instructional process. Collectively, these findings reinforce the argument that multimodal pragmatic competence can be systematically cultivated through guided interaction with digital discourse practices in EFL learning contexts.

The findings confirm that multimodal pragmatic inference can develop through scaffolded engagement with digital discourse practices. Internet memes function as pragmatically dense multimodal texts because their meanings are not fully encoded through linguistic form alone but emerge through the interaction of verbal expression, visual representation, contextual assumptions, intertextual reference, and evaluative stance (Dynel, 2024; Kress & van Leeuwen, 2006; Yus, 2023). The learners' early responses demonstrate that grammatical and lexical knowledge alone did not guarantee successful pragmatic interpretation, particularly when meaning depended on inferential coordination across multiple semiotic resources (Lee & Lee, 2020; Ren, 2022).

The longitudinal evidence further reveals that learners' interpretive strategies gradually evolved across the scaffolded instructional cycles. Through repeated interpretation, guided questioning, collaborative discussion, and reflective explanation, learners became increasingly capable of coordinating verbal and visual cues, identifying implied meanings, and explaining irony, evaluative stance, and contextual incongruity more explicitly. This developmental progression supports the view that pragmatic competence in digitally mediated communication is dynamic, socially negotiated, and instructionally cultivable rather than automatically acquired through passive digital exposure (Eisenlauer & Karatza, 2021; Sindoni et al., 2021).

The findings also reinforce multimodal discourse perspectives that interpretation in digital environments requires the integration of multiple semiotic modes simultaneously. Learners' developmental shifts from literal decoding toward context-sensitive inferential reasoning indicate that multimodal pragmatic competence involves more than understanding vocabulary or recognizing visible images. Instead, learners must actively negotiate relationships among textual meaning, visual framing, sociocultural assumptions, humor, and intertextual references to construct pragmatic interpretation. This supports digital-

pragmatic arguments that online discourse interpretation relies on inferential coordination across compressed and multimodally layered communicative forms (Adami, 2016; Dynel, 2021; Yus, 2021).

Another important finding concerns the role of scaffolding in facilitating inferential restructuring. The learners' development did not emerge automatically from exposure to memes themselves, but became visible through guided interpretive interaction. Scaffolded questioning encouraged learners to explain why textual and visual elements were combined, whether meanings were literal or ironic, what contextual assumptions were required, and what evaluative stance was communicated. Through repeated cycles of guided interpretation and collaborative meaning negotiation, learners gradually reorganized their interpretive frameworks from form-based decoding toward integrated multimodal pragmatic reasoning. This finding highlights the pedagogical importance of explicitly teaching inferential interpretation within digitally mediated communication contexts.

The first contribution of this study lies in its treatment of internet memes as empirical data for examining multimodal pragmatic inference. Unlike approaches that position memes merely as motivational classroom media, this study conceptualizes memes as compact multimodal inferential environments in which implicature, irony, stance, indirectness, and sociocultural positioning are compressed into small digital discourse units (Dynel, 2021, 2024; Shifman, 2014; Yus, 2021). This perspective contributes to expanding current discussions in digital pragmatics by demonstrating how meme interpretation can function as a site for observing pragmatic meaning-making processes in classroom contexts.

The second contribution concerns the developmental dimension of multimodal pragmatic competence in EFL learning. The findings demonstrate that learners' interpretive abilities changed progressively across instructional cycles, moving from literal and surface-level interpretation toward more integrated multimodal reasoning. This developmental evidence contributes to instructed second language pragmatics by showing that multimodal pragmatic inference is not a fixed ability but a gradually developable interpretive competence shaped through scaffolded engagement with digital texts.

The third contribution concerns learner interpretive challenges. Literal interpretation bias, surface-level visual description, irony misrecognition, and limited sociocultural schema indicate that learners may understand dictionary meanings or visible image elements while still failing to interpret implied pragmatic meaning. This distinction is significant for EFL pedagogy because it demonstrates that vocabulary knowledge and visual recognition alone do not guarantee communicative competence (Ren, 2022; Thomas, 1983). The findings further suggest that digital texts frequently encode evaluative positioning, ideological assumptions, and sociocultural values that learners must learn to interpret critically (Yanti & Pramujiono, 2025; Yanti et al., 2025).

The fourth contribution concerns pedagogical scaffolding and metapragmatic awareness. The scaffolded meme interpretation tasks encouraged learners to identify multimodal cues, justify inferential assumptions, compare interpretations, and revise initial readings through collaborative discussion. Such activities supported metapragmatic awareness because learners became increasingly conscious of how meaning is constructed through interaction among text, image, context, stance, and shared sociocultural knowledge (Bacon, 2017; Bobkina & Stefanova, 2016; Eisenlauer & Karatza, 2021). Consequently, the study suggests that scaffolded multimodal interpretation tasks may provide productive pedagogical environments for developing contemporary pragmatic competence in digitally mediated communication.

CONCLUSION

This study investigated the development of multimodal pragmatic inference among fifteen junior high school EFL learners through scaffolded internet meme interpretation tasks conducted across multiple instructional cycles. Using ten curated internet memes as multimodal interpretive stimuli, the study found that learners initially relied heavily on literal interpretation and surface-level visual description. Across repeated instructional cycles, however, learners increasingly demonstrated context-sensitive inferential reasoning, coordinated verbal and visual cues more systematically, and articulated evaluative stance, irony, and sociocultural references more explicitly.

The findings indicate that multimodal pragmatic inference is not merely an incidental outcome of digital exposure but an observable and systematically developable cognitive-semiotic competence. Learners' developmental progression from form-based decoding toward integrated multimodal pragmatic reasoning became visible through repeated scaffolded engagement involving guided questioning, collaborative interpretation, reflective explanation, and contextual negotiation. This suggests that pragmatic competence in digitally mediated communication can be pedagogically cultivated through structured interaction with multimodal digital texts.

The study contributes to digital pragmatics, multimodal discourse analysis, and instructed second language pragmatics by reconceptualizing pragmatic competence as dynamically shaped through engagement with multimodal digital discourse practices (Adami, 2016; Dynel, 2024; Kress & van Leeuwen, 2006). More specifically, the study demonstrates the importance of integrating multimodal inferential interpretation into EFL pedagogy in order to support learners' ability to interpret digitally mediated communication critically and contextually.

Several suggestions may be proposed based on the findings of this study. First, EFL instruction should move beyond grammar-oriented and literal comprehension approaches by incorporating scaffolded multimodal interpretation activities that encourage learners to analyze contextual, visual, evaluative, and sociocultural meanings. Internet memes, when carefully selected and pedagogically guided, may function as productive materials for developing pragmatic awareness, inferential reasoning, and critical digital literacy.

Second, teachers should provide explicit scaffolding during multimodal interpretation tasks, particularly through guided questioning, collaborative discussion, reflective explanation, and comparative interpretation activities. Such scaffolding is important because learners' multimodal pragmatic competence does not automatically develop through passive exposure to digital content alone.

Finally, future research may involve different learner proficiency levels, larger participant groups, longer instructional periods, or comparative classroom contexts to further examine how multimodal pragmatic inference develops across diverse EFL learning environments. Future studies may also explore additional forms of digitally mediated discourse, such as TikTok videos, Instagram reels, reaction images, or multimodal online comments, to expand current understandings of pragmatic development in digital communication contexts.

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Setiono Sugiharto	Universitas Atma Jaya	S3 in English Applied Linguistics, Atma Jaya Catholic University of Indonesia (LTBI Unika Atma Jaya, Jakarta) S2 Atma Jaya Catholic University of Indonesia (LTBI Unika S1 Atma Jaya Catholic University of Indonesia (LTBI Unika	Applied linguistics, discourse analysis, language education