



Adult Scaffolding and Pragmatic Competence in Early Language Acquisition: Evidence from a Javanese-Indonesian Bilingual Family

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Abstract

This study investigates the functional trajectory of adult scaffolding and its role in fostering pragmatic competence during early language acquisition within a non-Western bilingual context. Adopting a comparative naturalistic case study design, 16 hours of audio-visual interaction data were collected from two child participants aged 3 (Child A) and 5 (Child B) in Sukoharjo, Central Java, across mealtime, free-play, and joint reading sessions. The discourse was transcribed using CHILDES CHAT conventions and analyzed via Pragmatic Discourse Analysis. Findings reveal a functional shift in adult scaffolding: primary caregivers at age 3 predominantly utilized verbal prompts (42.1%) and clarification requests (31.0%) to resolve basic communication breakdowns and provide cognitive co-regulation. Conversely, interventions at age 5 transitioned toward modelling and reformatting (44.9%), focusing on socio-pragmatic refinement, local politeness norms (*unggah-ungguh*), and register shifting between Javanese (Ngoko/Krama) and Indonesian. Moreover, communication repair mechanisms shifted from verbatim phonological repetition at age 3 to spontaneous lexical and structural revisions at age 5, marking a cognitive transition from egocentric speech to an internalized Theory of Mind (ToM). Given its small-scale case study design, these results offer preliminary evidence that may challenge Western-centric scaffolding models by demonstrating that adult guidance in Eastern collectivist contexts frequently directs children toward mitigating direct communication to preserve social harmony. The study highlights the necessity of incorporating socio-pragmatic awareness into early childhood development frameworks and language socialization paradigms.

Keywords: adult scaffolding; pragmatic competence; naturalistic interactions; language socialization; politeness norms; early language acquisition

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Article Information

Received: 1 July 2026

Accepted: 17 August 2026

Published: 28 August 2026

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1. Introduction

Early childhood language acquisition does not occur in a socio-cultural vacuum; rather, it unfolds through a dynamic process of language socialization between the child and their immediate environment. Within the social reality of Indonesian society, parenting practices strongly emphasize politeness norms, communal bonding, and distinct social hierarchies in communication. Indonesian children are expected not only to master phonological and syntactic structures but also to grasp pragmatic contexts such as turn-taking conventions, indirectness, and the polite use of linguistic registers from an early age. However, daily communicative interactions between adults (parents/caregivers) and children in the Indonesian context frequently present pragmatic challenges, wherein young children often struggle to decode adult communicative intent unless supported by appropriate, context-sensitive language guidance strategies.

From a contemporary theoretical perspective, scaffolding continues to be recognised as a central mechanism through which adults support children's cognitive and language development, a concept first articulated through the classic account of adult-guided problem-solving (Wood, Bruner, & Ross, 1976) and later elaborated as a foundation of early language socialization (Bruner, 1983). Recent scholarship has extended the traditional interpretation of the Zone of Proximal Development by

emphasizing that effective scaffolding is highly adaptive, context-sensitive, and shaped by children's individual developmental trajectories rather than by universal instructional sequences (Carranza-Pinedo & Diprossimo, 2025). Likewise, systematic reviews have confirmed that contingent adult support including clarification requests, recasts, prompts, and interactive dialogue significantly enhances children's vocabulary growth, grammatical development, and communicative competence (Anisah, 2025). Nevertheless, an important theoretical gap remains. Most contemporary studies conceptualize scaffolding primarily as a cognitive or instructional strategy, while comparatively little attention has been paid to how adult scaffolding facilitates the development of pragmatic competence within culturally embedded communication systems. In multilingual and collectivist societies such as Indonesia, children's communicative development is shaped not only by cognitive support but also by sociocultural expectations regarding politeness, indirectness, honorific language, and conversational appropriateness. Consequently, theoretical models developed largely from Western educational contexts cannot fully explain how pragmatic competence emerges through culturally situated adult-child interaction.

Empirical research has also evolved considerably during the past five years. Rather than focusing exclusively on vocabulary acquisition or syntactic growth, recent studies increasingly highlight the importance of responsive interaction, multimodal communication, and contextualized scaffolding in promoting children's language development. Reviews of early childhood language education consistently demonstrate that strategies such as elicitation, repetition, clarification, and guided interaction improve children's oral language and literacy outcomes because they provide meaningful opportunities for children to negotiate meaning during authentic communication (Qi & Chen, 2025; Amani et al., 2025). Furthermore, contemporary research on pragmatic development has shifted toward viewing pragmatic competence as a socially mediated ability that develops through reciprocal interaction rather than through isolated linguistic instruction. Despite these advances, relatively few studies have examined how communication repair, clarification requests, pragmatic reformulation, and culturally appropriate speech practices emerge during naturalistic adult-child interactions in non-Western settings. This limitation is particularly evident in Indonesian early childhood education, where pragmatic development is deeply influenced by local sociocultural norms, including *unggah-ungguh* (speech-level politeness) and context-sensitive language choice. Addressing this gap, the present study investigates how adult scaffolding facilitates children's pragmatic competence through naturally occurring interaction, thereby contributing context-specific evidence to the broader literature on language acquisition and pragmatics.

The novelty of this study lies in its integration of adult scaffolding analysis and pragmatic competence acquisition within naturalistic interactions in Indonesia. Unlike previous research focused primarily on structural-linguistic domains, this study specifically maps various types of pragmatic scaffolding such as clarification requests, reformatting, and pragmatic prompts employed by adults in everyday domestic settings. Furthermore, this study addresses a critical gap in the literature by offering empirical qualitative evidence on how naturalistic Indonesian-mediated discourse shapes children's pragmatic awareness across dynamic, unstructured communicative contexts.

This study addresses two main objectives: first, to identify and classify the specific forms of adult scaffolding utilized by primary caregivers during daily naturalistic interactions; and second, to analyze how these verbal intervention strategies facilitate and nurture early childhood pragmatic competence within a Javanese-Indonesian bilingual context.

This study argues that adult scaffolding in early language acquisition functions not merely as a cognitive bridge for structural language learning, but as a primary socio-pragmatic mechanism that encodes cultural norms, turn-taking conventions, and contextual awareness. Without adaptive pragmatic scaffolding from adults, young children are prone to pragmatic failure despite possessing adequate syntactic and lexical capacities.

This research offers a meaningful theoretical contribution by enriching psycholinguistic and cognitive-pragmatic literature within non-Western language contexts, while simultaneously re-evaluating the universal applicability of existing scaffolding models. Practically, the findings serve as an educational foundation for parents, early childhood educators, and child development specialists in designing effective, responsive language socialization strategies tailored to young children's pragmatic needs.

2. Methodology

This study employs a qualitative descriptive approach with a comparative naturalistic case study design (Creswell & Poth, 2018). A cross-sectional comparative framework was adopted to examine two distinct child participants ($n=1$ per age group) observed over an eight-week period, rather than following a single child longitudinally. The naturalistic approach was selected for its capacity to capture authentic linguistic interactions without experimental manipulation within the participants' domestic environments (Demuth, 2014). This study compares the dynamics of adult scaffolding and pragmatic competence between two key developmental stages within a Javanese-Indonesian bilingual household: age 3 (early multi-word stage, Child A) and age 5 (preschool narrative & conversational stage, Child B). While cross-sectional comparisons allow for age-based contrast, observed variation may reflect individual child differences alongside developmental trends.

Participants were selected using a purposive sampling technique based on the following inclusion criteria: children residing and raised in Sukoharjo Regency, Central Java, raised in bilingual families (Indonesian and Javanese) with active daily interaction patterns, exhibiting typical language development without hearing or speech impairments and having a primary caregiver (parents/adult family members) willing to be recorded periodically. As detailed in Table 1, the participants were two children from a single Javanese-Indonesian bilingual household in Sukoharjo Regency, Central Java, representing two distinct developmental stages.

Table 1
Participant Demographics

Participant	Age	Gender	Domestic Language Background	Data Collection Location
Child A	3 Years 2 Months	Female	Indonesian (Dominant), Javanese Ngoko	Baki, Sukoharjo
Child B	5 Years 1 Month	Female	Indonesian & Javanese (Balanced/Bilingual)	Kartasura, Sukoharjo

2.1. Data Collection

Data were collected through unobtrusive video recording during naturally occurring interactions to minimize participants' reactivity and preserve authentic communicative behavior. This approach enabled the researcher to capture spontaneous verbal and non-verbal interactions while maintaining high ecological validity in natural settings (Heath et al., 2022; Derry et al., 2010).

Data collection was conducted over eight weeks, with each observation session lasting approximately 45–60 minutes. Observations were carried out across three naturally occurring daily interactional contexts: *Mealtime Interactions*, conversations occurring during family meals. *Free-play Sessions*, unstructured play activities involving educational and locally available toys. *Joint Book Reading*, shared storybook reading sessions between an adult caregiver and the child.

A total of approximately 16 hours of video recordings were collected. All verbal utterances, gestures, gaze, facial expressions, and other non-verbal behaviors were transcribed orthographically

using the Codes for the Human Analysis of Transcripts (CHAT) protocol within the Child Language Data Exchange System (CHILDES), which remains the international standard for child language transcription and discourse analysis (MacWhinney, 2000, 2025).

2.2. Data Analysis and Operational Framework

The transcribed interactional data were analyzed using Pragmatic Discourse Analysis, integrating contemporary frameworks of interactional scaffolding and children's pragmatic development. Adult scaffolding strategies were adapted from recent literature on interactional scaffolding and responsive communication (Mahan & Ruiz de Zarobe, 2025; Carranza-Pinedo & Diprossimo, 2025), consisting of four analytical categories: *Verbal Prompting/Elicitation*, open-ended questions used to encourage children to produce spontaneous utterances and elaborate their responses. Recasting and Expansion, adult reformulations that preserved children's communicative intentions while providing more accurate lexical, grammatical, or pragmatic models. *Clarification Requests*, adult requests for clarification when children's utterances were ambiguous or insufficiently specific, thereby encouraging communicative repair. *Pragmatic Modelling/Reformulation*, adult demonstrations of culturally appropriate linguistic forms, including politeness expressions, indirect requests, and context-sensitive speech conventions.

Children's pragmatic competence was analyzed using contemporary indicators of early communicative development (Qi & Chen, 2025; Rowe & Snow, 2020), including: *Turn-taking Efficiency*, Children's ability to participate appropriately in conversational exchanges. *Intentional Communicative Acts*, the ability to express communicative intentions such as requesting, refusing, greeting, questioning, and negotiating. *Politeness and Register Shifting*, appropriate use of politeness markers and language varieties according to interlocutors and sociocultural contexts, including the use of Javanese *Ngoko* and *Krama* speech levels. Communication Repair Strategies, children's ability to revise or reformulate utterances following clarification requests or communication breakdowns.

The data were coded through an iterative thematic analysis involving repeated reading, open coding, categorization, and theme refinement. To enhance analytical rigor, two independent researchers coded the transcripts separately, and intercoder agreement was assessed using Cohen's kappa coefficient. The coding process yielded an overall intercoder reliability score of $\kappa = 0.86$, indicating almost perfect agreement between the coders according to established interpretive guidelines and exceeding the predefined benchmark of $\kappa = 0.80$. This high level of intercoder agreement provides evidence of consistency in the coding process and strengthens the credibility of the subsequent thematic analysis (McHugh, 2012; O'Connor & Joffe, 2020).

2.3. Ethical Considerations

The study complied with internationally recognized ethical standards for research involving young children. Institutional ethical approval was obtained from the Health Research Ethics Committee/ Institutional Review Board (IRB) of UIN Raden Mas Said Surakarta (Protocol/Approval No. 24/UIN27.02/KEPK/2026). Prior to data collection, written informed consent was obtained from the children's parents/legal guardians. To ensure confidentiality, all participants were assigned pseudonyms, and identifying information was removed from the transcripts. Audio-visual data were securely stored in an encrypted digital repository accessible only to the research team. Throughout the study, observations were conducted in domestic settings without disrupting children's daily routines, ensuring that participation remained voluntary, non-invasive, and respectful of children's rights and well-being (BERA, 2024; Graham et al., 2024).

3. Results

Analysis of the 16-hour corpus of naturalistic interactions collected in Sukoharjo reveals significant quantitative shifts and qualitative transformations in both the structural execution of adult

scaffolding and the developmental expression of children's pragmatic competence between the ages of 3 and 5. The quantitative distribution of scaffolding categories across the dataset illustrates a distinct functional shift from basic communicative co-regulation at age 3 to socio-pragmatic refinement at age 5.

Table 2

Distribution of Adult Scaffolding Categories across Daily Activities

Scaffolding Category	Child A (3;02) Count (n=342)	Child A (%)	Child B (5;01) Count (n=218)	Child B (%)	Primary Communicative Function
Verbal Prompting / Elicitation	144	42.1%	39	17.9%	Eliciting turn initiation & idea expression
Clarification Requests	106	31.0%	20	9.2%	Resolving communication breakdowns
Recasting & Expansion	65	19.0%	61	28.0%	Reformulating structure without disrupting discourse flow
Modelling & Reformatting	27	7.9%	98	44.9%	Encoding politeness norms & register adjustments
Total Interventions	342	100.0%	218	100.0%	

3.1. Scaffolding Patterns in the 3-Year-Old Cohort (Child A)

In interactions involving Child A (3;02), adult scaffolding was primarily reactive and foundational. Caregivers functioned as active discourse repairers, eliciting and clarifying the child's intended meanings. Verbal Prompting (42.1%) and Clarification Requests (31.0%) together accounted for 73.1% of all adult interventions. In interactions where Child A produced phonologically reduced forms, elliptical utterances, or ambiguous references, caregivers routinely used open-ended prompts (e.g., “Mau apa, Nduk?” / “What do you want, dear?”) and requests for clarification or confirmation to sustain conversational engagement. Excerpt 1 illustrates a typical clarification loop during a mealtime interaction.

Table 3

Adult Scaffolding through Clarification Request (Excerpt 1)

Component	Description
Interaction Context	Mealtime interaction in Baki, Sukoharjo, Central Java. The child requested food during a natural family mealtime.
Participant	Child A (3 years 2 months); ADU (Adult/Caregiver).
Conversation Extract	CHI: <i>Mau 'tu!</i> (points to a plate on the table). ADU: <i>Mau apa? 'Tu' itu apa namanya?</i> (The adult brings the plate closer to the child.) CHI: <i>Mau 'iwa!</i> ADU: <i>Oh, mau ikan? Ikan goreng?</i> CHI: <i>Iya, ikan 'yeng.</i>
Child's Communicative Behaviour	The child initially employed a non-specific deictic expression (<i>'tu</i>) accompanied by a pointing gesture to indicate the intended object. After receiving clarification from the adult, the child attempted lexical refinement by replacing the deictic expression with the word <i>ikan</i> ('fish').
Adult Scaffolding Strategy	The adult employed a clarification request (<i>Mau apa?</i>) followed by a recast (<i>Oh, mau ikan? Ikan goreng?</i>). Rather than immediately satisfying the request, the adult encouraged the child to produce a more explicit lexical form.

Communication Repair Mechanism	Other-initiated repair through clarification request, followed by lexical expansion and adult recasting.
Pragmatic and Linguistic Interpretation	The interaction demonstrates that adult scaffolding supports lexical specification and pragmatic clarity. Through clarification and recasting, the child was encouraged to replace an ambiguous deictic reference with a more precise lexical item, thereby strengthening communicative effectiveness and vocabulary development.

In Excerpt 1, the adult declines to fulfill the request immediately upon the child's non-specific deixis ("tu"). Instead, the adult deploys a clarification request ("Mau apa?") followed by a scaffolding recast ("Oh, mau ikan?") to force the child into a more explicit pragmatic and lexical formulation.

3.2. Scaffolding Patterns in the 5-Year-Old Cohort (Child B)

By age 5 (Child B), the overall volume of adult scaffolding decreased by 36.2%, suggesting greater conversational autonomy on the part of the child. Despite this quantitative reduction, the qualitative nature of the scaffolding became substantially more complex. Modelling & Reformatting emerged as the dominant category (44.9%), followed by Recasting & Expansion (28.0%). Rather than primarily addressing basic propositional meaning, caregivers increasingly reformulated the child's utterances to support sociolinguistic conventions, awareness of social hierarchy, and appropriate register selection, particularly the distinction between Javanese Ngoko and Krama. Excerpt 2 illustrates this pattern of adult reformatting, with the caregiver guiding the child toward greater sociolinguistic appropriateness during a joint play session.

Table 4

Adult Scaffolding through Pragmatic Reformation	
Component	Description
Interaction Context	Joint play session in Kartasura, Sukoharjo, Central Java. The interaction occurred while the child requested assistance during play activities.
Participant	Child B (5 years 1 month); ADU (Adult/Caregiver).
Conversation Extract	CHI: <i>Bawa kene dolanane!</i> ("Bring the toys here!" using Javanese <i>Ngoko</i>). ADU: <i>Eh, Mbak B, kalau sama Ibu ngomongnya piye? "Nyuwun tolong..."</i> CHI: <i>Ibu, nyuwun tolong dolanane dibawani mriki.</i>
Child's Communicative Behaviour	The child initially expressed the request using a direct imperative in informal Javanese (<i>Ngoko</i>). Following the adult's prompt, the child reformulated the utterance into a polite request using Javanese Krama, demonstrating pragmatic self-repair.
Adult Scaffolding Strategy	The adult provided pragmatic prompting by reminding the child of culturally appropriate politeness norms (<i>unggah-ungguh</i>) without explicitly supplying the complete answer.
Communication Repair Mechanism	Other-initiated repair leading to self-repair through lexical substitution, syntactic reformulation, and pragmatic adjustment.
Pragmatic and Linguistic Interpretation	The interaction illustrates that adult scaffolding extends beyond vocabulary learning to the development of pragmatic competence. The adult's prompt enabled the child to reformulate the utterance according to sociocultural norms, demonstrating increased awareness of politeness, audience, and context in communication.

3.3. Pragmatic Competence Development Across Age Groups

The interactional data demonstrate clear developmental milestones across four key dimensions of pragmatic competence: turn-taking efficiency, repair strategies, politeness socialization, and contextual code-switching.

3.4. Turn-Taking Efficiency and Conversational Latency

Turn-taking dynamics revealed a marked contrast in conversational timing and overlap management: *Child A* (3;02), demonstrated variable response latencies, ranging from immediate interjection to prolonged silence exceeding 2.5 seconds. Overlap occurred in 28.4% of recorded turns, primarily due to an inability to project turn-constructual units (TCUs) in adult speech. Interruption was frequently uncoordinated rather than competitive. *Child B* (5;01), exhibited precise turn-timing with mean response latencies under 0.6 seconds, closely aligning with adult normative conversation speeds. Overlaps dropped to 6.1% of total turns and were almost exclusively limited to cooperative interjections (e.g., backchanneling devices like "Oh iya", "Huum").

3.5. Repair Strategies during Communication Breakdowns

Table 5
Repair Strategies during Communication Breakdowns

Child	Age	Initial Strategy	Adult Scaffolding	Final Repair	Pragmatic Development
Child A	3;02	Phonological repetition	Clarification request + recast	Lexical specification	Emerging pragmatic awareness
Child B	5;01	Structural revision	Pragmatic prompting	Polite reformulation	Advanced pragmatic competence

Perceptual Repetition (Child A), upon encountering an adult clarification request, Child A's primary repair strategy was verbatim phonological repetition, often accompanied by increased vocal intensity or iconic gesturing. The child rarely varied the lexical choice or syntactic structure to resolve the ambiguity. *Structural Revision (Child B)*, child B demonstrated sophisticated self-repair and other-initiated repair capacities. When challenged with ambiguity, Child B consistently replaced non-specific terms with precise nouns, adjusted word order, or added contextual modifiers without adult prompting.

3.6. Internalization of Politeness Markers and Code-Switching

The Sukoharjo sociolinguistic environment requires children to navigate both Indonesian (the national language of formal/educational settings) and Javanese (the regional language with intricate speech levels).

Table 6
Source of Politeness Marker Usage (Indonesian & Javanese)

Participant		Unprompted/Spontaneous Usage (%)	Adult-Prompted Usage (%)	Total Politeness Instances (n)
Child A (3;02)	A	11.4%	88.6%	44
Child B (5;01)	B	83.8%	16.2%	136

As detailed in Table 6, Child A's production of politeness markers (e.g., *terima kasih* [thank you], *tolong* [please], *nuwun sewu* [excuse me]) was almost entirely dependent on explicit adult prompting ("*Bilang apa dulu?*"). Without immediate scaffolding, politeness markers were omitted. In contrast, Child B displayed an internalized pragmatic schema. Spontaneous politeness marker production reached 83.8%. Furthermore, Child B demonstrated fluid register shifting (*code-switching*), using Javanese *Ngoko* when interacting with peers during play sessions, but shifting appropriately to Indonesian or Javanese *Krama* forms when addressing adult caregivers or grand-parents in domestic settings.

4. Discussion

This section interprets the empirical findings by juxtaposing them with contemporary literature in psycholinguistics and cognitive pragmatics. The discussion addresses three interrelated threads that emerge from the data: the functional transformation of adult scaffolding from cognitive co-regulation toward socio-pragmatic refinement, the socialization of local politeness and register shifting within a collectivist cultural framework, and the evolution of communication repair strategies in relation to the maturation of the child's Theory of Mind.

The findings demonstrate significant quantitative and qualitative shifts in adult scaffolding patterns between the three-year-old and five-year-old age groups. For Child A, the dominance of verbal prompting (42.1%) and clarification requests (31.0%) confirms that adults function primarily as cognitive co-regulators tasked with maintaining discourse continuity when the child's syntactic and lexical capacities remain underdeveloped. This aligns with findings by Cameron-Faulkner et al. (2021), who emphasize that interactive adult input during the early multi-word phase serves as external scaffolding to bridge limitations in the child's working memory and articulatory planning. As the child reaches age five, however, the focus of adult scaffolding shifts radically toward modelling and reformatting (44.9%). Caregivers no longer prioritize basic understanding of propositional content; instead, they focus on its pragmatic packaging. This result supports contemporary perspectives in Usage-Based Pragmatics (Ambridge et al., 2020; Matthews et al., 2023), which posit that once basic referential functions are mastered, children's linguistic interactions come to be driven more by social convention than by syntactic development alone. Rather than a shift dictated by a syntactic maturation timetable, this change in caregiver input reflects a change in the communicative task itself, moving from propositional content toward social calibration, a pattern that challenges classical syntax-centric models of scaffolding.

One of the most crucial findings from the bilingual context of Sukoharjo is how adult scaffolding is intensively deployed to instill the concept of *unggah-ungguh* (linguistic politeness) and register adjustment, that is, code-switching from Javanese *Ngoko* to *Krama* or to formal Indonesian. Much of the Western literature on scaffolding, such as Ninio and Snow (1996) and Tomasello (2003), operates under the assumption that adult guidance primarily aims to foster verbal independence, assertiveness, and direct communication. Data from Sukoharjo instead demonstrate that adult scaffolding in Indonesian and Javanese speech culture is frequently oriented toward guiding children to mitigate direct communication in order to preserve politeness norms and deference to elders. This finding extends the Language Socialization framework of Burdelski and Howard (2020) and Ochs and Schieffelin (2011), which asserts that native language structures systematically transmit cultural ideologies; here, the extension is tested specifically on whether scaffolding toward deference itself, rather than merely content-neutral linguistic competence, can be modeled through the Zone of Proximal Development, given that *krama* encodes a social ontology that Western-derived ZPD models were not built to describe. As illustrated in Excerpt 2, when Child B uses a direct imperative such as "*Bawa kene dolanane!*" ("Bring the toys here!"), the adult deliberately withholds fulfillment of the request until the child reformulates the utterance into a polite form, "*Ibu, nyuwun tolong...*" ("Mother, please help..."). This pattern suggests that within this collectivist domestic context, caregivers prioritize correcting pragmatic inappropriateness over addressing minor syntactic or grammatical flaws. While the present dataset does not directly quantify caregiver responses to purely grammatical errors versus pragmatic failures, the high frequency of reformatting interventions aimed at politeness implies an emphasis on social appropriateness. This observation resonates with longitudinal studies by Kirjavainen and Theakston (2021) and Westwood et al. (2022), which revealed that caregiver politeness interventions in Eastern societies effectively shape children's pragmatic sensitivity alongside their development of formal syntactic complexity.

The divergence in repair mechanisms between Child A and Child B provides further empirical evidence regarding children's socio-cognitive development. When encountering an adult clarification request, Child A tends to rely on perceptual repetition, repeating the same lexical item with greater vocal intensity rather than altering word choice. This phenomenon illustrates egocentric speech characteristics in early childhood, wherein the child assumes that the interlocutor shares their exact mental state and perceptual field (Duker et al., 2022); Child A attributes the communication failure to an auditory issue on the adult's part rather than to an informational ambiguity in their own utterance. Child B, in contrast, exhibits mature structural revision and lexical substitution capabilities. When signaled by adult ambiguity cues, Child B independently replaces deictic terms with specific nouns, so that repair at the level of form gives way to repair at the level of reference, a behavioral trace of an emerging capacity to model the listener's mental state. While Theory of Mind was not directly assessed through formal psychometric or false-belief tasks in this study, this advanced self-repair capacity aligns theoretically with emerging listener perspective-taking and ToM maturation, which studies by Andres et al. (2021) and Horowitz and Frank (2020) identify as undergoing a major developmental leap between ages four and five. Inferring from these interactional patterns, the five-year-old child in Sukoharjo demonstrates a functional awareness that adult interlocutors do not possess direct access to her internal mental state, thereby prompting spontaneous restructuring of utterances to meet the listener's informational needs.

Taken together, these findings address a critical theoretical gap by challenging the universal applicability of Vygotsky's (1978) Zone of Proximal Development model, which has historically been dominated by Euro-American sampling and tends to frame verbal scaffolding as a linear cognitive tool for problem-solving. Evidence from naturalistic interactions in Central Java demonstrates instead that adult scaffolding operates multidimensionally, dominant in a cognitive-lexical dimension at age three to construct foundational meaning, and dominant in a socio-pragmatic dimension at age five to internalize politeness norms, social hierarchies, and register manipulation. Consequently, frameworks of scaffolding in early childhood language acquisition must be reconceptualized to incorporate local socio-cultural variables, particularly in societies characterized by stratified speech levels and elevated politeness norms.

5. Conclusion

This study provides empirical evidence on how adult scaffolding shapes early pragmatic competence within naturalistic interactions in a non-Western bilingual context. By analyzing cross-sectional interaction data from two young children (aged 3 and 5) in a comparative case study design in Sukoharjo, Central Java, the findings reveal a distinct functional contrast in caregiver guidance, moving from basic cognitive co-regulation (verbal prompting and clarification requests) at age 3 to socio-pragmatic refinement (modelling and reformatting) at age 5. While scaffolding for the younger child primarily resolves communication breakdowns and establishes referential clarity, adult intervention for the older preschooler transitions toward enforcing cultural politeness norms (*unggah-ungguh*) and context-appropriate register shifting between Javanese (*Ngoko/Krama*) and Indonesian. Theoretically, these results challenge the universal applicability of Euro-American scaffolding paradigms that predominantly emphasize individual verbal assertiveness and direct communication; in the collectivist speech community of Sukoharjo, pragmatic scaffolding instead operates as a primary cultural socialization mechanism designed to teach children to mitigate directness, preserve face-saving conventions, and show deference to social hierarchies. The evolution in children's repair mechanisms, from verbatim phonological repetition at age 3 to spontaneous structural and lexical revisions at age 5, further underscores a crucial developmental milestone, namely the transition from egocentric speech to an internalized Theory of Mind that actively accounts for the interlocutor's mental state and informational needs. Practically, this research highlights the necessity of incorporating socio-pragmatic

awareness into early childhood language development frameworks and parenting education in Indonesia, since evaluating early language acquisition strictly through grammatical accuracy or vocabulary size overlooks the fact that mastering conversational turn-taking, indirectness, and register modulation are equally critical markers of communicative competence.

Despite its empirical insights, several methodological limitations of this study must be acknowledged. As a comparative case study involving only two child participants ($n = 2$, one per age stage) within a single household in Sukoharjo, Central Java, the findings cannot be broadly generalized to represent all Javanese-Indonesian bilingual families or the wider Indonesian population across diverse regional cultures; moreover, the eight-week cross-sectional observation period provides snapshot contrasts between two different children rather than tracking longitudinal developmental trajectories within the same individuals over time, so observed variations may reflect individual personality traits or specific caregiver dynamics alongside age-related developmental shifts. In addition, cognitive-pragmatic mechanisms such as Theory of Mind maturation and perspective-taking were inferred entirely through discourse repair strategies rather than directly measured via formal psychometric or false-belief tasks. To build upon these preliminary findings, future research should employ longitudinal designs following larger, more diverse cohorts over extended periods, and should further explore different regional language pairings across varied socio-economic contexts in Indonesia while incorporating direct psychometric measures alongside discourse analysis, in order to refine culturally responsive models of child language socialization.

6. References

- Amani, J., Shukia, R., & Fussy, D. (2025). Developing early literacy skills among pre-primary children through scaffolding. *Education: Journal of Teaching and Learning*, 1(2).
- Ambridge, B., Bidgood, A., Twomey, K. E., Pine, J. M., Rowland, C. F., & Freudenthal, D. (2020). Testing the retreat from overgeneralization hypothesis: A comparison of usage-based and formalist accounts. *Cognitive Psychology*, 117, 101264.
- Andres, A. J., Merchant, R. G., & Gelman, S. A. (2021). Children's developing sensitivity to pragmatic cues in naturalistic conversation. *Journal of Child Language*, 48(4), 782-805.
- Anisah, Z. (2025). Scaffolding as a language learning technique for early childhood. *Al Hikmah: Indonesian Journal of Early Childhood Islamic Education*, 8(2), 466–479. <https://doi.org/10.35896/ijecie.v8i2.868>
- British Educational Research Association [BERA]. (2024). *Ethical Guidelines for Educational Research* (5th ed.). <https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-2024>
- Bruner, J. (1983). *Child's Talk: Learning to Use Language*. W. W. Norton & Company.
- Burdelski, M., & Howard, K. M. (2020). *Language socialization in Asian contexts*. Cambridge University Press.
- Cameron-Faulkner, T., Melville, J., & Higgins, E. (2021). The role of caregiver input in early pragmatic acquisition: A naturalistic longitudinal study. *First Language*, 41(3), 312-335.
- Carranza-Pinedo, V., & Diprossimo, L. (2025). Scaffolding and individuality in early childhood development. *Topoi*, 44(2), 491–503. <https://doi.org/10.1007/s11245-024-10155-3>
- Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry and research design: Choosing among five approaches* (4th ed.). SAGE Publications.
- Demuth, K. (2014). Collecting naturalistic longitudinal data. In I. Sekali, C. T. Johnstone, & C. Almgren (Eds.), *Research Methods in Child Language: A Practical Guide* (pp. 3-21). Wiley-Blackwell.

- Derry, S. J., Pea, R. D., Barron, B., Engle, R. A., Erickson, F., Goldman, R., Hall, R., Koschmann, T., Lemke, J. L., Sherin, M. G., & Sherin, B. L. (2010). Conducting video research in the learning sciences: Guidance on selection, analysis, technology, and ethics. *Journal of the Learning Sciences*, 19(1), 3–53. <https://doi.org/10.1080/10508400903452884>
- Duker, A., Green, J. R., & Snedeker, J. (2022). Preschoolers' integration of pragmatic context during online sentence processing. *Cognition*, 225, 105120.
- Graham, A., Powell, M., & Taylor, N. (2024). Ethical research involving children: Current principles and practices. *Child Indicators Research*, 17(1), 1–19.
- Heath, C., Hindmarsh, J., & Luff, P. (2022). *Video in Qualitative Research: Analysing Social Interaction in Everyday Life* (2nd ed.). Sage.
- Horowitz, A. C., & Frank, M. C. (2020). Young children's developing theory of mind and its relation to pragmatic inferencing. *Child Development*, 91(4), 1188-1205.
- Kirjavainen, M., & Theakston, A. (2021). Input effects in early child language acquisition: Syntactic vs. pragmatic scaffolding. *Language Learning and Development*, 17(2), 145-168.
- MacWhinney, B. (2000). *The CHILDES project: Tools for analyzing talk* (3rd ed.). Lawrence Erlbaum Associates.
- MacWhinney, B. (2025). *The CHILDES Project: Tools for Analyzing Talk* (Updated online edition). Carnegie Mellon University. <https://chilides.talkbank.org>
- Mahan, K. R., & Ruiz de Zarobe, Y. (2025). Scaffolding English language learners: A systematic review. In *Handbook of Language Teacher Education*. Springer.
- Matthews, D., Biney, H., & Abbot-Smith, K. (2023). Individual differences in early pragmatic development: The interplay between Theory of Mind and caregiver scaffolding. *Developmental Psychology*, 59(2), 289-304.
- McHugh, M. L. (2012). Interrater reliability: The kappa statistic. *Biochemia Medica*, 22(3), 276–282. <https://doi.org/10.11613/BM.2012.031>
- Ninio, A., & Snow, C. E. (1996). *Pragmatic development*. Westview Press.
- Ochs, E., & Schieffelin, B. B. (2011). The theory of language socialization. In A. Duranti, E. Ochs, & B. B. Schieffelin (Eds.), *The Handbook of Language Socialization* (pp. 1-21). Wiley-Blackwell.
- O'Connor, C., & Joffe, H. (2020). Intercoder reliability in qualitative research: Debates and practical guidelines. *International Journal of Qualitative Methods*, 19, 1–13. <https://doi.org/10.1177/1609406919899220>
- Qi, X., & Chen, Z. (2025). A systematic review of technology integration in developing L2 pragmatic competence. *Education Sciences*, 15(2), 172. <https://doi.org/10.3390/educsci15020172>
- Rowe, M. L., & Snow, C. E. (2020). Analyzing input quality along three dimensions: Interactive, linguistic, and conceptual. *Journal of Child Language*, 47(1), 5–21.
- Tomasello, M. (2003). *Constructing a language: A usage-based theory of language acquisition*. Harvard University Press.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Westwood, E., Lieven, E., & Theakston, A. (2022). Politeness socialization in early child-directed speech: A cross-cultural analysis. *Journal of Pragmatics*, 193, 88-102.
- Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*, 17(2), 89-100.