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Comprehension of Conversational Implicatures among Yemeni EFL Students

Yasser M. H. Ahmed Alrefae^{1*} , Abbas H. Al-Shammari² 

¹ English Department, Faculty of Education and Science, Albaydha University, Al Bayda, Yemen

² Faculty of Graduate Studies, Kuwait University, Kuwait City, State of Kuwait 13110, Kuwait

ABSTRACT

This study examines conversational implicature comprehension among 261 Yemeni EFL university students from six institutions (three public, three private), using a multiple-choice test based on Bouton's (1994) framework. Results indicate moderate overall pragmatic competence (53.05%), with significant variation across implicature types. Participants demonstrated higher comprehension of idiosyncratic implicatures (55.83%)—especially relevance-based (72%)—than formulaic types (48.61%). Indirect criticism proved most challenging (31.8%), followed by Minimum Requirement Rule implicatures (40.5%). Age significantly predicted performance: younger learners (20–25 years) outperformed older cohorts across all categories, suggesting critical period effects in pragmatic development. Gender differences were negligible, while institutional variations suggested contextual factors (e.g., pedagogy, resources) influence pragmatic development more than public/private status. Findings reveal that learners effectively leverage contextual cues for logical inferences but struggle with culturally embedded conventions requiring sociocultural knowledge. The study addresses critical research gaps by identifying: (1) formulaic implicatures as persistent challenges requiring explicit instruction, (2) age as a key developmental factor necessitating early pragmatic integration, and (3) institution-specific pedagogical impacts transcending structural distinctions. Results underscore imperatives for Yemeni EFL curricula to enhance focus on formulaic implicatures, integrate systematic cultural awareness training, and implement age-appropriate teaching strategies to address competence gaps exacerbated by limited authentic English exposure in conflict-affected educational contexts.

*CORRESPONDING AUTHOR:

Yasser M. H. Ahmed Alrefae, English Department, Faculty of Education and Science, Albaydha University, Al Bayda, Yemen; Email: yasser.alrefae@gmail.com

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1. Introduction

The development of pragmatic competence, particularly the ability to comprehend conversational implicatures, represents a crucial challenge in English as a Foreign Language (EFL) context. While considerable attention has been paid to grammatical competence in EFL instruction, the ability to understand implied meanings and use language appropriately in social contexts often remains underdeveloped. As Hymes (1972) emphasized, effective communication requires not just grammatical accuracy but also the ability to use language appropriately in different social situations^[1]. Conversational implicatures, first theorized by Grice (1975)^[2], refer to meanings that speakers implicitly convey beyond their literal utterances. These implied meanings depend heavily on shared contextual knowledge and adherence to conversational principles like cooperativeness and relevance. For EFL learners, comprehending such implicit meanings poses significant challenges, as they often lack the sociocultural knowledge and pragmatic awareness required to interpret speaker intentions accurately^[3].

The Yemeni EFL context presents particular challenges for developing pragmatic competence. As noted by Alrefae and Al-Ghamdi (2019)^[4], Yemeni learners typically have limited exposure to authentic English usage and few opportunities for meaningful interaction in the target language. Previous studies in the Yemeni context have examined various aspects of pragmatic competence, including refusals^[5], apologies^[6], and requests^[7]. However, a comprehensive investigation of conversational implicature comprehension remains notably absent from literature. This aligns with broader systemic challenges in Yemen's education system, including outdated teaching methodologies and infrastructural deficiencies exacerbated by prolonged conflict^[8].

This study investigates how Yemeni university students comprehend both idiosyncratic and formulaic implicatures. Following Bouton's (1994) framework^[9], idiosyncratic implicatures arise spontaneously from specific contexts, while formulaic implicatures follow established pragmatic patterns. Understanding these nuanced meanings requires not only linguistic knowledge but also sociocultural awareness and the

ability to infer speaker intentions.

1.1. Theoretical Framework

This research adopts the theoretical framework developed by Pratama et al. (2017)^[10], which synthesizes earlier work by Grice (1975)^[2], Bouton (1994)^[9], and Arsenault (2014)^[11]. This framework categorizes conversational implicatures into two main types:

Formulaic implicatures include:

- POPE-Q (rhetorical questions)
- Minimum Requirement Rule (MRR)
- Sequential implicatures
- Indirect criticism
- Scalar implicatures

Idiosyncratic implicatures comprise:

- Quantity implicatures
- Quality implicatures
- Manner implicatures
- Relevance implicatures

Previous research has shown that these different types of implicatures pose varying levels of difficulty for EFL learners. Bouton (1994) found that while some types become easier to comprehend with increased exposure to the target language^[9], others remain challenging even after extended periods of study. Similarly, Taguchi (2013) demonstrated that conventional implicatures were generally easier for Japanese English learners to comprehend than non-conventional ones^[3].

This study addresses crucial gaps in understanding pragmatic competence development among EFL learners in Yemen. While considerable research has examined speech acts in the Yemeni context, the comprehension of conversational implicatures remains understudied. As Nelson et al. (2002) note, while native speakers may forgive grammatical errors, pragmatic failures often lead to more serious misunderstandings and negative social judgments^[12].

The findings have important pedagogical implications for EFL teaching in Yemen and similar contexts. Understanding which types of implicatures pose the greatest challenges for learners can inform the development of more effective teach-

ing materials and methodologies. As argued by Kasper and Rose (2002)^[13], the ability to comprehend implied meanings is crucial for successful communication in a second language.

1.2. Research Objectives and Questions

This study addresses crucial gaps in understanding pragmatic development among EFL learners in Yemen. While considerable research has examined speech acts in the Yemeni context, conversational implicature comprehension remains understudied.

Objectives:

1. Assess Yemeni EFL university students' comprehension across different implicature types
2. Identify the most problematic implicature categories for these learners
3. Examine relationships between implicature comprehension and demographic variables

Research Questions:

1. To what extent do Yemeni EFL university students demonstrate competence in comprehending conversational implicatures?
2. Which conversational implicatures prove most problematic for Yemeni EFL university students?
3. How do age, gender, and institutional affiliation relate to students' implicature comprehension abilities?

1.3. Literature Review

Research on conversational implicatures in EFL contexts has revealed significant patterns in learners' comprehension abilities and the development of pragmatic competence. This review examines key theoretical frameworks and empirical studies specifically investigating implicature comprehension among EFL learners.

Grice's (1975) pioneering work on conversational implicature established that speakers convey meaning beyond their literal utterances through violations of conversational maxims — quantity, quality, manner, and relevance^[2]. Building on this foundation, Bouton (1994) developed a practical framework for analyzing EFL learners' comprehension of implicatures, categorizing them into idiosyncratic and formulaic types. This classification has proven particularly useful for investigating patterns of difficulty among language learners.

Bouton's (1988, 1994) longitudinal studies provided foundational insights into how EFL learners process implicatures^[9, 14]. His research revealed that while some implicature types become easier to comprehend with increased exposure to English, others remain challenging even after extended periods of study. Particularly, relevance-based implicatures proved easier for learners to grasp than indirect criticism or POPE-Q implicatures.

Taguchi's extensive research has significantly advanced understanding of implicature comprehension among EFL learners^[3, 15–17]. Her studies demonstrated that conventional implicatures are often easier for learners to comprehend than non-conventional ones. For instance, her 2013 study of Japanese EFL learners found that conventional implicatures like indirect refusals were processed more accurately than non-conventional implications requiring deeper cultural knowledge.

Lee (2002) examined Korean learners of English with high proficiency levels [18], finding only slight differences between their interpretation of conversational implicatures compared to native speakers. This suggests that high proficiency may contribute to better implicature comprehension, though not guaranteeing native-like understanding.

Pratama et al. (2017) investigated Indonesian EFL learners' comprehension of both formulaic and idiosyncratic implicatures^[10]. Their findings indicated that relevance implicatures were most accessible while indirect criticism posed the greatest challenge. They also found that factors like grammar knowledge, vocabulary, and exposure to English significantly influenced implicature comprehension. More recently, Taghizadeh (2020) examined Iranian EFL learners' comprehension of both implicatures and presuppositions^[19]. The study concluded that learners needed to improve their understanding of conversational implicatures for smooth communication with native speakers, highlighting the gap between linguistic and pragmatic competence.

1.4. Factors Affecting Implicature Comprehension

Research has identified several key factors influencing EFL learners' ability to comprehend implicatures:

1. **Language Proficiency:** While necessary, linguistic competence alone doesn't guarantee pragmatic success^[20]. Studies show that even advanced learners

may struggle with certain implicature types.

2. Cultural Knowledge: Understanding cultural references and norms significantly impacts implicature comprehension^[9]. This is particularly evident in difficulties with indirect criticism and culturally-bound implications.
3. Exposure to Authentic Language: Regular interaction with native speakers and authentic materials enhances pragmatic awareness^[3]. Limited exposure often results in pragmatic failure.
4. Teaching Approach: Explicit instruction in pragmatic features can accelerate development^[13]. However, some aspects require both instruction and meaningful practice opportunities.

1.5. Research Gap in the Yemeni Context

While extensive research exists on implicature comprehension in various EFL contexts, studies in the Yemeni context remain notably limited. Nassar and Al-Ghrafy (2020) examined the perception and comprehension of conversational implicatures among Yemeni EFL college learners^[21], but their study lacked a comprehensive theoretical framework for analyzing different implicature types. The unique challenges of the Yemeni EFL context — including limited exposure to authentic English, cultural differences, and pedagogical traditions — make it particularly important to understand how these learners process implicatures. These challenges are compounded by systemic issues such as teacher shortages, reliance on outdated curricula, and the socio-political impact of war on education^[8].

This review of literature reveals both the complex nature of implicature comprehension in EFL contexts and the need for context-specific research in Yemen. While previous studies provide valuable insights into general patterns of implicature comprehension among EFL learners, the specific challenges and patterns among Yemeni learners remain underexplored. The present study aims to address this gap by examining comprehension patterns across different implicature types among Yemeni EFL learners.

2. Methods

2.1. Research Design

This study employed a quantitative research design to investigate Yemeni EFL university students' comprehension of conversational implicatures. A multiple-choice test served as the primary data collection instrument, facilitating objective measurement of comprehension levels and statistical analysis of patterns across implicature types and demographic variables.

2.2. Participants

The study involved 261 Yemeni EFL learners from six universities, comprising three public institutions (Sana'a University, Taiz University, Al-Baydha University) and three private institutions (University of Science and Technology, University of Al-Andalus, Yemenia University). Participants were junior or senior English majors aged 23–26 years (mean age = 24), all with a minimum of seven years of formal English instruction. Gender distribution showed a male majority (67%), while institutional representation included 33% from Sana'a University's Faculty of Education, 17.2% from its Faculty of Arts, and proportional representation from other institutions.

2.3. Instrument

An 18-item multiple-choice test assessed comprehension across formulaic implicatures (10 items covering POPE-Q, Minimum Requirement Rule, sequential implicatures, indirect criticism, and scalar implicatures) and idiosyncratic implicatures (8 items addressing quantity, quality, manner, and relevance-based inferences). Each item presented contextualized dialogues followed by three response options. Validation procedures included expert review by five applied linguistics professors, pilot testing with 30 participants to refine instructions and eliminate ambiguities, and reliability analysis confirming a Cronbach's α of 0.727 and split-half reliability coefficient of 0.702 after removal of four problematic items.

2.4. Data Collection

Data collection utilized dual-mode administration: an online version distributed via Google Forms and paper-based alternatives for participants with limited internet access. No time constraints were imposed to mitigate test anxiety and en-

sure deliberate processing of items. Participants completed the instrument independently without dictionaries or peer consultation, with average completion times ranging from 45 to 60 minutes.

2.5. Data Analysis

Quantitative analysis was employed using SPSS version 26. Descriptive statistics including frequencies, percentages, and means quantified overall and type-specific comprehension rates. Independent samples t-tests examined gender differences, while one-way ANOVA assessed age effects across cohorts (20–25, 25–30, 30–35, 35+) and institutional variations. Cross-tabulation analysis explored demographic correlations to identify interactions between variables.

Informed consent was obtained from all participants

prior to data collection, with strict maintenance of anonymity throughout research procedures and data analysis.

3. Results

3.1. Overall Comprehension of Conversational Implicature

Analysis of the data reveals that Yemeni EFL learners demonstrated moderate pragmatic competence with an overall comprehension rate of 53.05% across all implicature types (**Table 1**). The results show a notable difference between the comprehension of idiosyncratic implicatures (55.83%) and formulaic implicatures (48.61%), suggesting varying levels of pragmatic competence across different implicature categories.

Table 1. Comprehension of Conversational Implicatures Among Yemeni EFL Students (N=261).

Type of Implicature	Sub-type	Correct Responses (%)
Idiosyncratic Implicatures (55.83%)	Relevance	72.0
Quantity	56.3	
Manner	54.53	
Quality	51.6	
Formulaic Implicatures (48.61%)	POPE-Q	59.0
Sequential	58.65	
Scalar	53.1	
MRR	40.5	
Indirect Criticism	31.8	

3.1.1. Idiosyncratic Implicatures Performance (55.83%)

Analysis of idiosyncratic implicatures reveals varying levels of comprehension across different types. Relevance implicatures demonstrated the highest comprehension rate at 72.0%. This high success rate suggests Yemeni EFL learners are most competent at making contextually relevant inferences when logical connections are clear. Quantity implicatures showed moderate comprehension at 56.3%. The performance indicates moderate ability to understand violations of the quantity maxim, where speakers provide more or less information than required. Manner implicatures achieved a 54.53% comprehension rate. The varying performance across different instances suggests that contextual familiarity influ-

ences comprehension of manner-based implications. Quality implicatures received 51.6% correct responses overall. The results indicate that participants had moderate difficulty interpreting sarcasm and irony in conversational exchanges.

The distribution of comprehension rates across both idiosyncratic and formulaic implicatures reveals that Yemeni EFL learners' pragmatic competence is stronger in areas requiring logical reasoning and contextual interpretation than in those demanding familiarity with conventionalized pragmatic patterns. While they possess moderate pragmatic competence overall, their ability to comprehend implicatures varies significantly depending on the type of inference required, indicating specific areas where pragmatic competence could be enhanced through targeted instruction.

3.1.2. Formulaic Implicatures Performance (48.61%)

Within formulaic implicatures, POPE-Q implicatures showed the highest comprehension at 59.0%. Analysis of rhetorical questions demonstrated consistent moderate comprehension, indicating that participants could generally grasp the implied meanings in these conventional question patterns. Sequential implicatures achieved 58.65% comprehension overall. The comprehension rates varied considerably across different scenarios, suggesting that the complexity of sequential events significantly affects understanding. The variation in performance indicates that learners' ability to interpret sequential implications depends on the complexity of the temporal or logical sequence involved. Scalar implicatures showed consistent moderate performance at 53.1%. The results demonstrated stable comprehension patterns across different instances of scalar meanings, indicating that participants had a moderate ability to interpret hedged statements and gradual implications.

3.2. Overall Performance Patterns

The distribution of comprehension rates across both idiosyncratic and formulaic implicatures reveals several patterns in Yemeni EFL learners' pragmatic competence. Idiosyncratic implicatures, which rely on immediate context and logical inference, generally receive higher comprehension rates. This suggests that learners are more adept at processing meaning when they can draw direct connections

from the immediate context.

Formulaic implicatures, which often require recognition of conventional patterns and cultural knowledge, proved more challenging overall. The performance pattern indicates that Yemeni EFL learners' pragmatic competence is stronger in areas requiring logical reasoning and contextual interpretation than in those demanding familiarity with conventionalized pragmatic patterns. These findings demonstrate that while Yemeni EFL learners possess moderate pragmatic competence overall, their ability to comprehend implicatures varies significantly depending on the type of inference required. The results suggest that immediate contextual connections are more accessible than conventionalized patterns, indicating specific areas where pragmatic competence could be enhanced through targeted instruction.

3.3. Most Problematic Conventional Implicature

Table 2 presents the ranking of implicature types from most to least problematic based on comprehension rates among Yemeni EFL learners.

As shown in **Table 2**, indirect criticism emerged as the most problematic implicature type, with only 31.8% correct responses, indicating that over two-thirds of participants failed to grasp these implications. The consistently low performance across different instances of indirect criticism suggests significant difficulty in recognizing and interpreting implied negative evaluations.

Table 2. Ranking of Implicature Types from Most to Least Problematic.

Implicature Type	Correct Responses (%)	Incorrect Responses (%)
Indirect Criticism	31.8	68.2
MRR	40.5	59.5
Quality	51.6	48.4
Scalar	53.1	46.9
Manner	54.53	45.47
Quantity	56.3	43.7
Sequential	58.65	41.35
POPE-Q	59.0	41.0
Relevance	72.0	28.0

The Minimum Requirement Rule (MRR) ranked as the second most challenging type, with 40.5% correct responses. Participants demonstrated consistent difficulty in understanding the minimum requirement implications across different scenarios, indicating a broader challenge with this type of

conventional implicature.

Quality implicatures ranked third in difficulty, with 51.6% correct responses. The results suggest significant difficulty in processing sarcasm and irony, with participants struggling to interpret non-literal meanings accurately.

In the middle range, scalar implicatures (53.1%) and manner implicatures (54.53%) showed moderate levels of difficulty. These types required participants to understand degrees of certainty and indirect expressions, respectively, demonstrating moderate competence in interpreting hedged meanings and indirect statements.

Quantity implicatures (56.3%) and sequential implicatures (58.65%) proved somewhat less problematic, though still challenging for many participants. POPE-Q implicatures, while ranking second easiest at 59% correct responses, still posed difficulties for a substantial number of participants.

Relevance implicatures emerged as the least problematic, with 72% correct responses. This higher success rate demonstrates participants' stronger ability to make contextually relevant inferences based on logical connections.

The distribution pattern in **Table 2** reveals a clear hierarchy of difficulty, with implicatures requiring cultural knowledge or recognition of conventional patterns (indirect criticism, MRR) proving most challenging, while those based

on logical inference and immediate context (relevance) were more accessible. This pattern suggests that the difficulty level increases with the degree of cultural or conventional knowledge required for interpretation.

The substantial gap between the most and least problematic types (40.2 percentage points between indirect criticism and relevance implicatures) indicates that Yemeni EFL learners' pragmatic competence varies significantly depending on the type of inferential processing required. The findings demonstrate that while learners can effectively process some types of implied meaning, they struggle significantly with others, particularly those demanding deeper cultural understanding or familiarity with conventional pragmatic patterns.

3.4. Demographic Factors and Implicature Comprehension

Table 3 presents the mean scores across demographic variables for different types of implicatures.

Table 3. Mean Scores by Demographic Variables.

Variable	Category	Presupposition	Idiosyncratic	Formulaic	Total Mean
Gender	Male	1.323	1.461	1.484	1.42
	Female	1.330	1.430	1.520	1.43
Age	20–25	1.33	1.46	1.53	1.44
	25–30	1.35	1.40	1.50	1.42
	30–35	1.31	1.38	1.43	1.37
	35+	1.25	1.16	1.28	1.23
University	Sana'a (Education)	1.34	1.46	1.56	1.45
	Yamenia	1.32	1.53	1.48	1.44
	Sana'a (Arts)	1.33	1.41	1.51	1.42
	Al-Andulus	1.29	1.48	1.50	1.42
	Albaydha	1.37	1.40	1.45	1.40
	Taiz	1.32	1.37	1.51	1.40
	UST	1.27	1.41	1.44	1.37

3.4.1. Gender Differences

As shown in **Table 3**, gender differences in implicature comprehension were minimal. Female students demonstrated slightly better performance in formulaic implicatures (mean = 1.520) compared to male students (mean = 1.484). Conversely, male students showed marginally higher comprehension in idiosyncratic implicatures (mean = 1.461) than female students (mean = 1.430). However, these differences were not statistically significant ($p > 0.05$). The total mean scores were nearly identical (female = 1.43, male = 1.42), suggesting gender has little impact on overall implicature comprehension.

3.4.2. Age Impact

The data reveals age as a significant factor in implicature comprehension. Students aged 20–25 achieved the highest overall performance (mean = 1.44), particularly excelling in formulaic implicatures (mean = 1.53). Performance decreased consistently with age, as shown in Table 3, with participants over 35 demonstrating the lowest comprehension rates across all categories (total mean = 1.23). The difference was most pronounced in idiosyncratic implicatures, where younger students (20–25) scored significantly higher (mean = 1.46) compared to those over 35 (mean = 1.16).

3.4.3. Institutional Variation

University affiliation showed notable differences in student performance. Sana'a University's Faculty of Education students achieved the highest overall comprehension rates (mean = 1.45), particularly excelling in formulaic implicatures (mean = 1.56). Yamenia University students followed closely (mean = 1.44), showing particular strength in idiosyncratic implicatures (mean = 1.53).

The data reveals minimal differences between public and private universities in overall performance. However, specific patterns emerged within each sector:

Public Universities demonstrated varying strengths

- Sana'a University (Education) showed the strongest performance in formulaic implicatures (mean = 1.56)

- Albaydha University led in presupposition comprehension (mean = 1.37)

- Taiz University maintained consistent moderate performance across categories (mean = 1.40)

Private Universities showed similar variation:

- Yamenia University excelled in idiosyncratic implicatures (mean = 1.53)

- Al-Andulus demonstrated balanced performance across categories (mean = 1.42)

- UST showed the lowest overall performance (mean = 1.37)

These institutional variations suggest that factors beyond public/private status influence implicature comprehension. The data indicate that teaching methodologies, exposure to authentic English, integration of cultural awareness in the curriculum, student demographics, and faculty expertise may play more significant roles than institutional type in developing pragmatic competence.

The findings indicate that while gender has minimal impact on implicature comprehension, age and institutional factors play significant roles. The superior performance of younger students suggests potential advantages in early pragmatic competence development, while institutional variations highlight the importance of educational environment and teaching approaches in developing pragmatic skills.

These results provide valuable insights for curriculum development and teaching methodology adaptation across different institutional contexts, particularly in addressing the needs of diverse age groups and institutional settings in the Yemeni EFL context.

4. Discussion

4.1. Overall Pragmatic Competence in Comprehending Conversational Implicatures

The findings reveal moderate pragmatic competence among Yemeni EFL learners, with an overall comprehension rate of 53.05%. This moderate level of performance aligns with Bouton's (1994) observation that EFL learners often struggle with implied meanings^[9], particularly in contexts with limited exposure to authentic language use. The finding also supports Alrefaee and Al-Ghamdi's (2019) conclusion that Yemeni learners face particular challenges in developing pragmatic competence due to limited opportunities for meaningful interaction in English^[4].

The notable difference between comprehension of idiosyncratic implicatures (55.83%) and formulaic implicatures (48.61%) echoes findings by Taguchi (2013)^[3], who found that context-dependent implications were often easier for EFL learners to grasp than conventionalized patterns. This pattern can be explained by Bouton's (1994) observation that while some implicature types become easier with increased exposure [9], others require explicit instruction and cultural knowledge.

The high performance on relevance implicatures (72%) suggests that Yemeni EFL learners are most adept at making contextually-based inferences. This finding aligns with Pratama et al.'s (2017) study of Indonesian EFL learners, which also found relevance implicatures to be most accessible^[10]. The success with relevance implicatures may be attributed to their reliance on logical reasoning rather than culturally specific knowledge.

The lower performance on formulaic implicatures supports Taguchi's (2013) finding that implicatures requiring cultural knowledge or conventional understanding pose greater challenges for EFL learners^[3]. This is particularly evident in the comprehension rates for POPE-Q (59%) and sequential implicatures (58.65%), which require understanding of conventionalized patterns.

The performance pattern across different types of implicatures suggests what Thomas (1983) identified as sociopragmatic competence development — the ability to understand social conditions governing language choices^[22]. The varying success rates between context-dependent and convention-dependent implicatures indicate that Yemeni EFL learners

have developed stronger competence in logical inference than in cultural-pragmatic interpretation.

These findings support Kasper and Rose's (2002) argument that while some aspects of pragmatic competence develop naturally through exposure^[13], others require explicit instruction. The relatively stronger performance on idiosyncratic implicatures suggests that learners can effectively use their logical reasoning skills, but may need more targeted instruction in culturally-bound implications.

The results also align with Bardovi-Harlig's (2001) observation that high linguistic competence does not automatically ensure pragmatic competence^[20], particularly in aspects requiring cultural knowledge or awareness of conventional patterns. This underscores the need for specific attention to pragmatic development in EFL instruction.

4.2. Problematic Areas in Implicature Comprehension

The hierarchy of difficulty in implicature comprehension reveals significant patterns in pragmatic development among Yemeni EFL learners. The particular difficulty with indirect criticism (31.8% correct responses) mirrors findings from several studies in other EFL contexts^[3, 9]. This challenge likely stems from what Thomas (1983) identified as sociopragmatic failure—misunderstanding the social conditions governing language choices^[22]. The finding also supports Al-Zumor's (2011) observation about Yemeni learners' tendency toward directness in English communication^[6].

The significant struggle with MRR implicatures (40.5%) indicates challenges with quantitative implications, as noted in Bouton's (1994) research^[9]. This difficulty may be attributed to what Kasper and Rose (2002) describe as the need for explicit instruction in conventionalized pragmatic patterns^[13].

Quality implicatures' low comprehension rate (51.6%) suggests difficulty interpreting speaker attitudes and intentions, supporting Taguchi's (2013) finding that such interpretations often require substantial pragmatic awareness^[3]. This aligns with Bardovi-Harlig's (2001) observation that advanced language learners may still struggle with nuanced pragmatic meanings^[20].

The findings support Bouton's (1994) conclusion that certain types of implicatures remain challenging even after extended exposure to the target language^[9]. This is particu-

larly evident in the consistently low performance on indirect criticism and MRR implicatures, suggesting that these aspects may require explicit instructional intervention rather than relying on incidental learning through exposure.

The clear pattern of difficulty from conventionalized to context-based implicatures supports Taguchi's (2015) argument for focused instruction on problematic pragmatic features^[23], particularly those requiring cultural knowledge or awareness of indirect communication strategies.

4.3. Demographic Factors Influencing Implicature Comprehension

The finding that younger students (20–25) consistently outperformed older learners aligns with research on age effects in pragmatic development^[13]. This may reflect both greater exposure to English through media and possibly more contemporary teaching methods in their education. The age-related differences support Taguchi's (2011) observation that early exposure and consistent interaction with target language materials can enhance pragmatic development^[24].

The minimal gender difference in implicature comprehension contrasts with some previous findings but supports Alrefaee and Al-Ghamdi's (2019) observation that gender plays a limited role in Yemeni EFL learners' pragmatic development^[4, 24]. This suggests that gender-based differences may be less significant in contexts where overall exposure to authentic language use is limited.

Institutional variations in performance suggest that factors beyond public/private status influence pragmatic development, supporting Kasper and Rose's (2002) emphasis on the role of instructional environment in pragmatic competence development^[13]. The higher performance in certain institutions, particularly Sana'a University's Faculty of Education, aligns with Bardovi-Harlig's (2001) finding that teaching methodology and exposure to pragmatic aspects of language significantly influence learner development^[20].

The variation across institutions suggests what Ishihara and Cohen (2014) identify as the importance of integrating pragmatic awareness into institutional curricula^[25]. The differences in performance patterns between universities indicate that factors such as teaching approaches, exposure to authentic materials, and integration of cultural awareness may be more significant than institutional type in developing pragmatic competence.

These findings support Taguchi's (2015) argument that successful pragmatic development depends on multiple factors^[23], including institutional support, teaching methodology, and opportunities for authentic language exposure. The results also align with Kasper and Schmidt's (1996) observation that pragmatic development is influenced by both individual factors and institutional learning environments^[26].

4.4. Pedagogical Implications

The findings of this study offer valuable insights for enhancing pragmatic instruction in Yemeni EFL contexts. The marked disparity between learners' comprehension of idiosyncratic and formulaic implicatures necessitates a fundamental reconsideration of how pragmatic competence is addressed in current curricula. Given that formulaic implicatures, particularly indirect criticism and the Minimum Requirement Rule, consistently posed the greatest challenges for learners, EFL instructors must prioritize explicit instruction in these conventionalized patterns rather than assuming they will develop naturally through exposure, as advocated by Bouton (1994) and Kasper and Rose (2002)^[9, 13].

The superior performance on relevance implicatures suggests that Yemeni EFL learners possess strong logical reasoning abilities that can be leveraged as a foundation for developing other pragmatic skills. Educators should capitalize on this strength by initially presenting more challenging implicature types through clear logical frameworks before gradually introducing the cultural and conventional knowledge required for full comprehension. This scaffolded approach acknowledges learners' existing competencies while systematically addressing their areas of weakness, supporting Taguchi's (2015) argument for focused instruction on problematic pragmatic features^[23].

The age-related performance differences observed in this study have important implications for curriculum design. The consistent superiority of younger learners across all implicature types suggests that pragmatic instruction should be integrated into foundational EFL courses rather than relegated to advanced levels, aligning with Kasper and Rose's (2002) emphasis on early pragmatic competence development^[13]. This early integration would allow learners to develop pragmatic awareness alongside their grammatical and lexical competence, potentially preventing the fossilization of pragmatic errors.

The study's findings strongly advocate for the integration of authentic materials and cultural awareness training into EFL curricula, addressing the limited exposure to authentic English usage noted by Alrefae and Al-Ghamdi (2019) in the Yemeni context^[4]. The particular difficulty with culturally-bound implicatures such as indirect criticism suggests that learners require explicit exposure to the socio-cultural contexts that govern pragmatic choices in English-speaking communities. Furthermore, the research highlights the need for comprehensive teacher training programs that equip instructors with the knowledge and skills necessary to address pragmatic competence systematically.

Given the challenging socio-political context of Yemen, with systemic issues including outdated curricula and infrastructural deficiencies exacerbated by prolonged conflict^[8], creative solutions must be developed to provide learners with meaningful encounters with target language pragmatics. Technology-mediated learning environments, virtual exchange programs, and carefully curated multimedia resources could partially compensate for the limited availability of native speaker interaction and authentic communicative contexts. The study underscores the importance of adopting a developmental perspective on pragmatic competence, recognizing that different types of implicatures may require different instructional approaches and varying amounts of time and exposure to develop, as noted by Bouton (1994)^[9].

4.5. Limitations and Future Research Directions

While this study provides valuable insights into conversational implicature comprehension among Yemeni EFL learners, several limitations warrant acknowledgment. The reliance on multiple-choice tests as the sole assessment instrument may not fully capture the complexity of pragmatic competence in authentic communicative contexts. As noted in the current study, MCT methodology, while providing standardized and quantifiable data, cannot adequately reflect the dynamic nature of real-time pragmatic processing or the influence of interactional factors that emerge in natural conversation. This limitation is particularly significant given that conversational implicatures inherently depend on contextual negotiation and shared understanding between interlocutors, elements that are necessarily constrained in a test format.

The findings of this research open several promising avenues for future investigation. Given the differential performance patterns observed across implicature types, longitudinal studies examining how pragmatic competence develops over time would provide crucial insights into the natural progression of implicature comprehension abilities. Such research could illuminate whether the superior performance on relevance implicatures observed in this study represents a developmental starting point from which other implicature types gradually improve, or whether certain types remain consistently more accessible regardless of proficiency level or exposure duration.

Additionally, intervention studies investigating the effectiveness of explicit pragmatic instruction targeting the most problematic implicature types identified in this research—particularly indirect criticism and Minimum Requirement Rule implicatures—would have significant pedagogical value. The current study's finding that formulaic implicatures pose greater challenges than idiosyncratic ones suggests that targeted instructional approaches may be necessary, but empirical evidence of specific teaching methodologies' effectiveness remains to be established. Future research could also explore the relationship between linguistic proficiency levels and pragmatic competence development, as the interaction between grammatical knowledge and pragmatic awareness may inform more nuanced approaches to curriculum design and instructional sequencing in EFL contexts.

5. Conclusions

This investigation into conversational implicature comprehension among Yemeni EFL university students has illuminated critical aspects of pragmatic competence development in contexts characterized by limited authentic target language exposure. Through systematic examination of 261 participants across six universities, the study established that Yemeni learners demonstrate moderate overall pragmatic competence at 53.05%, with notable asymmetries between their processing of different implicature categories. The research provides compelling evidence that contextual inference abilities substantially exceed conventionalized pattern recognition, as demonstrated by the superior performance on idiosyncratic implicatures (55.83%) compared to formulaic types (48.61%).

The hierarchical pattern of comprehension difficulty revealed by this study contributes significantly to theoretical understanding of interlanguage pragmatic development. The consistently high performance on relevance implicatures (72%) juxtaposed against the pronounced difficulties with indirect criticism (31.8%) suggests that logical reasoning capacities transfer more readily across linguistic boundaries than culturally-embedded pragmatic conventions. This finding supports and extends previous theoretical frameworks by demonstrating how universal cognitive processes interact with culture-specific knowledge in second language pragmatic acquisition. The data particularly reinforces Bouton's theoretical distinctions while revealing culture-specific manifestations of pragmatic transfer challenges in the Arabian Peninsula context.

Demographic analysis has uncovered previously underexplored patterns in pragmatic competence distribution. The consistent superiority of younger learners (ages 20–25) across all implicature categories challenges assumptions about uniform developmental trajectories and suggests critical period effects may extend beyond traditional linguistic domains into pragmatic competence. Simultaneously, the minimal gender-based differences observed contrast with findings from other cultural contexts, indicating that sociocultural factors mediating gender and language learning may operate differently within Yemeni educational environments. The institutional variations discovered transcend simple public-private distinctions, pointing toward more nuanced educational ecology factors that merit further theoretical consideration.

These empirical findings carry substantial pedagogical implications for EFL instruction in Yemen and comparable contexts facing similar challenges of limited authentic exposure and cultural distance from target language communities. The pronounced difficulties with formulaic implicatures necessitate explicit instructional intervention rather than reliance on incidental acquisition through exposure. Current pedagogical approaches that prioritize grammatical accuracy while marginalizing pragmatic competence appear insufficient for developing the comprehensive communicative abilities required for successful intercultural interaction. The age-related performance patterns particularly suggest that pragmatic instruction should be integrated early in language learning sequences rather than deferred to advanced proficiency levels.

The theoretical and practical significance of these findings extends beyond the immediate Yemeni context to broader questions about pragmatic competence development in EFL environments worldwide. The systematic patterns of difficulty observed across implicature types suggest that pragmatic competence develops along predictable hierarchies, with contextual inference abilities emerging before conventionalized pattern recognition. This understanding challenges traditional approaches to language instruction that assume pragmatic competence develops naturally alongside grammatical proficiency.

The broader implications of this research extend beyond immediate pedagogical applications to fundamental questions about the nature of communicative competence in globalized contexts. As English increasingly functions as a lingua franca across diverse cultural communities, understanding how speakers from different backgrounds process implied meanings becomes crucial for effective intercultural communication. The patterns of pragmatic competence revealed among Yemeni learners may reflect broader challenges facing EFL communities worldwide, particularly those with limited access to authentic target language interaction.

This study ultimately demonstrates that pragmatic competence development in EFL contexts requires systematic attention to both universal cognitive processes and culture-specific knowledge systems. The moderate overall performance levels observed suggest that current instructional approaches, while producing some pragmatic awareness, fall short of developing the comprehensive inferential abilities required for nuanced intercultural communication. The differential performance across implicature types particularly indicates that one-size-fits-all approaches to pragmatic instruction are unlikely to address the complex, hierarchical nature of pragmatic competence development. Future EFL pedagogy in Yemen and similar contexts must therefore adopt more targeted, theoretically-informed approaches that recognize both the cognitive foundations and cultural specificities of pragmatic understanding while acknowledging the resource constraints that characterize many EFL learning environments.

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mal analysis, Y.M.H.A.A.; Investigation, Y.M.H.A.A.; Resources, Y.M.H.A.A. and A.H.A.-S.; Data curation, Y.M.H.A.A.; Writing—original draft preparation, Y.M.H.A.A.; Writing—review and editing, Y.M.H.A.A. and A.H.A.-S.; Supervision, Y.M.H.A.A. and A.H.A.-S.; Project administration, Y.M.H.A.A. All authors have read and agreed to the published version of the manuscript.

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