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ENGLISH MORPHEME ACQUISITION AS A SECOND LANGUAGE AMONG CHILDREN IN ONLINE GAMING ENVIRONMENTS

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Abstract: This study aims to explore the acquisition of English morphemes which is the second language used by children through their interaction in online games. English morphemes, which have different structures from Indonesian morphemes, are analyzed based on their types, especially on root, affixation, stem and base. This study uses a qualitative approach with descriptive analysis. The research sample consists of children aged 7 to 12 years old who have experience playing online games. Observations were made to identify the use of relevant English morphemes. The results show that children can understand and use roots both as content words and function words. However, not all lexical morphemes are found in children's speech, nor are bound roots as part of morphemes. The types of affixes used by children in playing online games are affixes at the beginning and end. There is no use of infixes. Root, stem and base which are word building elements have been used by children in the context of online games.

Keywords: *morpheme acquisition ; English ; children ; online games.*

INTRODUCTION

The acquisition of English morphemes in second language settings is a complex phenomenon influenced by age, context, and interaction. Children immersed in language-rich environments, particularly those facilitated by technology, show rapid morphological development (Krämer et al., 2025; Wong et al., 2025). Game-based interaction stands out as a dynamic medium that fosters real-time language use and implicit learning. As children navigate game instructions, dialogues, and peer exchanges, they engage with both content and function words at the morpheme level. This dynamic learning method has been echoed in studies examining social interaction in games and its role in developing morphological competence (Aburqayiq et al., 2025; Fiyana & Tawami, 2025).

While traditional classroom methods still dominate second language instruction, the rise of gamified environments provides an immersive alternative. App-based tools have shown long-term benefits in enhancing morphological knowledge (Torkildsen et al., 2022; Adamantopoulou, 2025).

Moreover, ESL students benefit from spontaneous peer interactions during gameplay, which fosters awareness of word structures (Rankin et al., 2021; Guinet et al., 2025). In digital spaces like Twitter or live-stream chats, slang and abbreviation reveal the adaptability of morphemes in informal settings (Chumok & Lerdpaisalwong, 2025; Firusa, 2025). This shift demonstrates that morphology learning is no longer confined to structured lessons but also emerges through daily screen-based interactions (Shi, 2025).

Research into inflectional and derivational morphemes in digital communication confirms that morphology adapts to technological demands. In contexts like "GTA V" or "Mobile Legends," players routinely manipulate morphemes such as -ing and re- to express actions or strategies (Mubarok, 2024; Indrawan, 2022). Similarly, analysis of fan fiction and internet memes reveals how language learners play with morphemic rules for stylistic or humorous effects (Comandini & Dedè, 2025; Senderska, 2025). These patterns are mirrored in academic environments where

gamified vocabulary training enhances retention and engagement (Ahmed Al-Sofi, 2024; Lauterbach & Zipke, 2024). Recent advances in cooperative game theory further underscore how communication strategies in games are linguistically structured (González et al., 2024; Ait Temghart et al., 2025).

The relationship between exposure and acquisition is further clarified through studies in multilingual and code-mixed environments. English-Arabic and English-Indian code-switching shows how learners internalize morphemes across languages (Saini et al., 2025; Mohammad Hussein Aburqayiq et al., 2025). Even young learners, when immersed in morphologically-rich contexts, begin to identify and manipulate morphemes productively (Wong et al., 2025; Mishkova-Yotova, 2025). Educational platforms like Kahoot! And serious games such as “Luciole” make it easier for teachers to track morpheme use and provide feedback (Guinet et al., 2025; Alshehri, 2025). Data from digital literacy platforms confirm that function words and affixes are absorbed through context-driven learning rather than memorization (Rankin et al., 2021; Lawati, 2025).

At the core of morphological acquisition is the distinction between roots, stems, and affixes—structures central to English word formation. As children explore games and participate in quests or chat exchanges, their exposure to these forms increases (Feng, 2025). Children aged 7 to 12 are particularly sensitive to morpheme segmentation when it is supported visually and contextually (Janzen Ulbricht, 2023; Ahmadi, 2021). Some studies focus on the order in which learners acquire grammatical morphemes, noting consistency across age groups and languages (Gerard et al., 2025). This consistency is challenged in game-based settings where need-based usage often determines morpheme choice (Board & See, 2023;).

The dynamic nature of gameplay allows morpheme use to reflect immediate communicative needs rather than syntactic mastery. When children say “exit,” “play,” or “healing,” they are selecting semantically powerful free morphemes appropriate for rapid in-game action (Rohmah, 2024). Game dialogue often shortens grammatical constructions to suit task-based interaction, leading to the preference for content morphemes over function morphemes (Yolanda et al., 2024; Zhao et al., 2024). While infixes are rarely observed, prefixes and suffixes are prominent in phrases like “replay” or “heals” (Butcher & Harrington, 2003; Krämer et al., 2025).

This pattern mirrors general trends in L2 morphosyntax under performance pressure (Chapelle, 2025; Rankin et al., 2021).

Scholars have argued for multimodal platforms that merge education, entertainment, and morphological learning. Games with narrative structures stimulate the need to express cause-effect, conditionals, and plurality—all of which rely on morphemes (Qiao et al., 2025; Torkildsen et al., 2022). Etymological studies reveal how gaming vocabularies develop distinct morphological identities, often blending cultural references (Feng, 2025; Azzahra & Kulsum, 2025). These patterns suggest that morphology in games is not static but evolves with gameplay and community norms (Widianingsih et al., 2025; Păunescu et al., 2025). In real-time exchanges, children learn to recognize stems and adapt word bases to match peer expressions (Riyadi et al., 2019; Firuza, 2025).

Furthermore, children demonstrate an understanding of affixation and semantic variation without formal instruction. For example, the use of “healer,” “builder,” or “runner” reveals a grasp of -er suffixation as an agentive marker (Katamba, 1993; Mareta et al., 2025). Analysis of dialogue in popular role-playing games indicates consistent use of free roots and affixed words in goal-oriented discourse (Indrawan, 2022; Hamasalih & Ghafoory, 2025). Across platforms, bound morphemes are less common but not absent—children may unknowingly use them in words like “submit” or “permit” (Krämer et al., 2025; Katamba, 1993). The challenge lies in decoding whether children understand these as single morphemes or as whole lexical units (Gerard et al., 2025; Janzen Ulbricht, 2023).

Finally, digital education frameworks increasingly recommend blending linguistic theories with game-based practice. Blended classrooms employing systematic thinking strategies and serious games show marked improvement in morphological inference (Shi, 2025; Zhao et al., 2024). Studies employing cognitive neuroscience, AI, and educational psychology suggest that gamification enhances memory, attention, and language retention (Wedlock & Wilson, 2024; Pang et al., 2024). Integrating LLM-powered games also helps create natural acquisition contexts for morphemes and syntax (Zhao et al., 2024; Ahmed Al-Sofi, 2024). These models reaffirm that playful interaction—especially in English—can produce measurable gains in linguistic complexity, even in early learners (Rohmah, 2024).

This study investigates the types of English morphemes children aged 7–12 acquire while playing online games. What morphological structures (roots, affixes, stems, bases) do they use? Are there identifiable patterns or preferences? Which morpheme types are underused or absent? And how does gameplay influence this selection process?

This research contributes to our understanding of second language development in informal digital contexts. It highlights the pedagogical potential of online games as platforms for natural morpheme acquisition. By focusing on children aged 7–12, the study captures language use during a critical developmental window. It also extends current models of morphological learning to include non-instructional, task-based environments. These findings support the integration of digital interaction into language education frameworks that emphasize both structure and spontaneity.

METHOD

This study used a qualitative descriptive approach to investigate the types of English morphemes acquired by children aged 7 to 12 through interaction in online gaming environments. A qualitative design is suitable for analyzing linguistic behavior in naturalistic contexts, allowing for the observation of spontaneous morpheme use. The study draws on frameworks in second language acquisition and morphological theory, particularly in relation to bound and free morphemes, affixation, and root–stem–base distinctions (Katamba, 1993; Krämer et al., 2025). Previous research supports the use of naturalistic interaction, such as games, as an effective context for observing morphological development in real time (Rankin et al., 2021).

Participants consisted of ten children aged 7–12 years, selected using purposive sampling from local elementary schools and online gaming communities. Inclusion criteria included: (1) regular involvement in English-medium online games, (2) demonstrated basic English skills acquired through formal education, and (3) parental consent. This age range was chosen because it coincides with the critical period for language development (Wong et al., 2025). The children were actively involved in multiplayer games requiring communication in English, such as Minecraft and Roblox. These platforms promote social interaction and spontaneous language production, essential for capturing authentic

morpheme usage (Guinet et al., 2025; Zhao et al., 2024).

Data were collected through three primary techniques: (1) direct observation, (2) audio recording and transcription, and (3) semi-structured interviews with children and parents.

Over a period of two months, researchers conducted non-intrusive observations during the children's gameplay sessions. Observations took place at the children's homes or during online gaming meetups, where researchers either joined the game passively or observed through screen sharing. Detailed field notes were taken regarding language use, interaction patterns, and contextual game mechanics. These observations were supplemented with voice recordings, capturing in-game dialogue where morphemes appeared in spontaneous interaction (Mishkova-Yotova, 2025; Indrawan, 2022).

All recordings were transcribed verbatim, preserving linguistic features such as repetition, false starts, and code-switching. These transcripts formed the primary data for morpheme analysis. Each utterance containing English morphemes was marked and coded.

Semi-structured interviews were conducted with the children and their parents to gather supplementary information. Questions explored gaming habits, types of vocabulary encountered, and the children's perception of new English words. Interviews were conducted in a relaxed setting to ensure comfort and openness. This process enriched observational data and added perceptual insight into children's language development (Shi, 2025; Janzen Ulbricht, 2023).

Data were analyzed through thematic morphological analysis, with reference to frameworks by Katamba (1993) and Krämer et al. (2025). The analysis consisted of four stages: (1) transcription analysis, (2) morpheme identification, (3) categorization, and (4) interpretation.

Each identified morpheme was analyzed to determine whether it was a free or bound morpheme, whether it functioned as a content or function word, and whether it belonged to a root, stem, or base. Affixation was also analyzed in terms of prefixes and suffixes. Thematic coding allowed the researcher to classify the morphemes based on function and frequency across the children's speech (Torkildsen et al., 2022; Azzahra & Kulsum, 2025). Particular attention was given to morphemes that reflected interactive needs in game contexts, such as commands, descriptions, and responses.

To ensure validity, peer debriefing was conducted with language education experts, and data triangulation was achieved by comparing interview, transcription, and observation results (Riyadi et al., 2019). Additionally, the classification was validated using published morphemic inventories in applied linguistics (Hasanati, 2023; Mareta et al., 2025).

Ethical approval for the study was obtained through parental consent and adherence to child-participant protection protocols. Participant identities were anonymized, and data were used strictly for academic purposes (Wedlock & Wilson, 2024). Children were informed of their rights and encouraged to withdraw at any time without consequence. Additional safeguards were implemented to avoid involving non-consenting players in any recorded material (Ahmed Al-Sofi, 2024).

RESULTS AND DISCUSSION

Data 1a – Free Lexical Morphemes: Proper Noun Usage

Langit: *enggak, pinggir*

Lintang: *takut sama herobrine*

Langit: *aku malah seru ih kalo ada herobrine*

Translation:

Langit: no, on the edge

Lintang: I'm scared of Herobrine

Langit: I actually think it's fun when Herobrine appears

The word *herobrine* is a free morpheme functioning as a proper noun, referencing a character in Minecraft. Its use shows that children can encode fictional concepts into lexical structures. According to Gee (2003), naming and interaction with game elements strengthens lexical learning. This aligns with findings on vocabulary retention through meaningful exposure (Fiyana & Tawami, 2025; Smith, 2024).

Data 1b – Concrete Nouns as Free Morphemes

Lintang: *Syi, olong pasangin bed aku dong*

Rasyi: *udah*

Lintang: *Syi, apa yang kau lakukan?*

Rasyi: *apa? Aku tidak melakukan apa-apa*

Lintang: *Kamu bikin aku jadi survival*

Translation:

Lintang: Syi, please install the bed for me

Rasyi: already done

Lintang: Syi, what are you doing?

Rasyi: what? I didn't do anything

Lintang: You turned me into survival mode

The noun *bed* is a free morpheme used accurately in an imperative sentence. It serves as a content word and demonstrates children's comprehension of basic noun functions in virtual environments. This confirms that concrete nouns are often acquired early and reinforced through game interactions (Torkildsen et al., 2022; Hasanati, 2023).

Data 2a – Adjectival and Nominal Phrases

A: *excuse me*

A: *you are top global*

B: *yes victory akhirnya*

Translation:

A: excuse me

A: you are top global

B: yes, finally victory

Top global is a phrase composed of two free morphemes, functioning as an adjective-noun compound to express high rank. Its semantic interpretation reveals exposure to ranking systems in multiplayer games. Such collocational understanding supports morphological awareness development in L2 learners (Lauterbach & Zipke, 2024; Comandini & Dedè, 2025).

Data 2b – Imperative Verbs and Particle Commands

Rasyi: *kalau jatuh slash skill aja*

Langit: *apa*

Rasyi: *slash skill, Ntang what are you doing?*

Langit: *free set*

Rasyi: *oya tunggu*

Translation:

Rasyi: if you fall, just slash skill

Langit: what?

Rasyi: slash skill, Ntang what are you doing?

Langit: free set

Rasyi: okay, wait

Slash skill and *free set* are game-specific verb phrases. While morphologically simple, their pragmatic use shows command formation and context-driven lexicalization. According to Rankin et al. (2021), children often adopt command language from peer modeling and game instructions.

Data 3a – Verbs as Action Directives

Rasyi: *Kalah berkali-kali, berturut-turut*

Langit: *exit...exit* *dulu*

Rasyi: *back* *together*

Translation:

Rasyi: Lost multiple times, consecutively

Langit: *exit...* *just* *exit* *first*

Rasyi: let's regroup

Exit is used as a verb, illustrating productive use of a free morpheme in action contexts. Children use game verbs strategically, often simplified for efficiency. This supports previous studies on task-based verb acquisition in MMORPGs (Yolanda et al., 2024; Mubarak, 2024).

Data 3b – Verb Roots in Action Contexts

C: *ih kenapa nyawanya penuh?*

B: *gara gara aku heal*

C: *kukira yang spam itu pedang*

B: *yaa dua duanya sama-sama heal*

Translation:

C: why is your HP full?

B: because I healed

C: I thought the sword was the one spamming

B: both were healing

Heal is a free verb root, repeated across clauses. The child's consistent use reflects an understanding of its semantic and functional role. This aligns with Janzen Ulbricht's (2023) findings that procedural exposure supports morpheme retention in young learners.

Data 4a – Conjunctions and Repetition

Lintang: *oya isi wool*

Rasyi: *Lintang bilang apa tadi?*

Lintang: *wool and wool*

Translation:

Lintang: fill it with wool

Rasyi: what did Lintang say earlier?

Lintang: wool and wool

And serves as a function word (conjunction) combining repeated content nouns. Its correct placement demonstrates early mastery of syntactic linking. Function words, although abstract, are often absorbed through repetition (Katamba, 1993; Hasanati, 2023).

Data 4b – Prepositions in Slang Constructions

C: *Ngit kata Lintang by one*

A: *Ngit ayo Ngit kita by one Ngit*

C: *pake pedang Ngit by one nya*

Translation:

C: Ngit, Lintang said 1v1

A: Ngit, let's do a 1v1

C: use a sword, Ngit, for the 1v1

By one is a colloquial expression functioning as a prepositional construction. It reflects the emergence of semi-fixed phrases within online gaming slang. This supports the idea that morpheme acquisition also includes idiomatic learning (Senderska, 2025; Saini et al., 2025).

Data 4c – Verb Phrase and Particle Integration

A: *gimana sih Ngit cara ganti skin juga? Biar gampang*

B: *gabisa harus premium*

A: *bukan katanya bisa slash in*

B: *iya slash in tapi harus premium*

Translation:

A: how do you change skin, Ngit? To make it easier

B: you can't, must be premium

A: didn't they say you could slash in?

B: yes, slash in, but it must be premium

Slash in is an example of a particle verb construction. These multi-word expressions are common in gaming and show children's ability to understand morphosyntactic chunks. As argued by Qiao et al. (2025), gamified contexts accelerate acquisition of complex expressions.

Data 4d – Code Mixing and Possessive Structures

B: *dia lagi pake mod jadi skin nya masih skin kamu tapi nanti kalau dilepas bakal berubah jadi skin nya sendiri*

A: *what?*

A: *jangan di copy*

Translation:

B: they're using a mod, so the skin still looks like yours, but once removed, it'll change into theirs

A: what?

A: don't copy it

Skin-nya combines an English noun with the Indonesian possessive suffix *-nya*, showing code-mixing. This hybrid structure supports findings on multilingual morpheme fusion in bilingual contexts (Aburqayiq et al., 2025; Chumok & Lerdpaisalwong, 2025).

The results of this study reveal several patterns in the acquisition and use of English morphemes by children aged 7 to 12 within the context of online gameplay. Through the analysis of ten transcribed interaction samples, a number of key findings emerged. The types of morphemes most frequently used included free lexical morphemes, particularly roots, function words, and common affixations such as prefixes and suffixes. Additionally, the absence of complex morphemes such as infixes and bound roots, as well as the presence of code-mixing structures, marked significant linguistic behavior.

Predominant use of free morphemes

The most commonly observed morphemes were free morphemes, especially those functioning as nouns or verbs. These included game-specific nouns like *bed*, *skin*, *mod*, and verbs like *heal*, *play*,

exit, and refresh. Such morphemes are frequently used in gaming contexts and are often repeated in user interfaces, instructions, or commands, making them more accessible to children. Their high frequency and concrete nature facilitated easier acquisition and recall.

This finding aligns with the theories proposed by Katamba (1993), who emphasizes that free morphemes are typically acquired earlier due to their semantic transparency and functional clarity. It also supports Mubarok's (2024) argument that digital games present learners with authentic linguistic input embedded in purposeful activities. Similar patterns were found in the studies of Lauterbach and Zipke (2024), who showed that children expand their vocabulary and morpheme usage through puzzle-based word games, and in Hasanati's (2023) analysis of inflectional forms in literary contexts, where concrete and frequently used morphemes are acquired earlier.

Affixation patterns: Prefixes and suffixes

Children demonstrated limited but consistent usage of affixed words, predominantly prefixes (e.g., re-) and suffixes (e.g., -ing, -s, -er). Examples such as refresh, replay, gaming, wars, and heals indicate a growing awareness of derivational and inflectional processes. However, the data revealed that children acquired these affixes in high-frequency, fixed forms rather than generative morphological patterns. That is, they used affixed words as whole lexical units rather than as modifiable components.

This reflects earlier findings by Torkildsen et al. (2022), who observed that young learners trained with structured morphological input—especially through apps or game-based environments—retain common affix forms but may not yet analyze or produce new morphological constructions. Mubarok (2024) similarly found that children exposed to open-world games like Grand Theft Auto V adopted suffixes like -ing and -ed in formulaic speech without necessarily understanding their grammatical functions. The limited variation of affixes found in this study echoes Janzen Ulbricht's (2023) work, which emphasized that L2 learners in middle childhood acquire morphemes through repetition and exposure rather than formal morphological instruction.

Absence of bound roots and infixes

Interestingly, there was no evidence of bound roots (e.g., -mit in submit, -tain in maintain) nor infixes in the children's language. These forms tend to be more abstract and morphologically opaque, often

requiring advanced morphological awareness and exposure to formal instruction. Children's preference for complete, semantically transparent morphemes supports the theory of frequency and transparency as dominant factors in early morphological acquisition (Krämer et al., 2025).

Similar findings are reported in research by Ali et al. (2024) on morphological use in multilingual communities, where derivational morphology is used far less frequently by young or low-proficiency learners. Moreover, the bound root structure is less visible in game-related vocabulary, which often favors command verbs, objects, and actions—most of which are represented as free-standing morphemes (Rankin et al., 2021). This supports the notion that bound roots are not functionally prioritized in game-based communication.

Function words and prepositions in interactional contexts

Children in this study also used function words such as and, by, in, and of, although these were often limited to fixed collocations or game jargon (e.g., by one, slash in). This suggests that while children are acquiring basic grammatical elements, their use is often lexically-bound and context-specific rather than generative. These results echo the findings of Janzen Ulbricht (2023) and Chumok and Lerdpaisalwong (2025), who found that learners initially acquire function words in collocational chunks before understanding their broader grammatical functions.

The presence of command phrases, such as slash skill, free set, or back together, shows that children not only repeat lexical units but adapt them pragmatically to the communicative demands of gaming. This reflects earlier findings in Rankin et al. (2021), where in-game social interactions were shown to foster morphological awareness and real-time pragmatic development.

Code-mixing and morphological blending

A notable phenomenon in the data is code-mixing, particularly the attachment of Indonesian suffixes like -nya to English noun roots (e.g., skin-nya). This illustrates morphological blending, where two language systems interact at the morphemic level. Children appeared to use English roots as lexical bases and applied L1 grammar to express possession or relational meaning.

This finding is consistent with studies of bilingual communication, such as Aburqayiq et al. (2025) on Arabic-English code-mixing and Saini et al. (2025) on English-Indian language integration,

where speakers fluidly combine linguistic structures from both systems. In a child-learning context, such blending may indicate linguistic flexibility and semantic adaptation, particularly when function or nuance is missing from the second language. As highlighted by Mareta et al. (2025), children often compensate for linguistic gaps by using hybrid forms that retain communicative clarity.

Pragmatic adaptation and contextual morpheme use

Lastly, the children in this study demonstrated pragmatic awareness in their use of morphemes. Most utterances occurred in high-pressure, real-time gameplay where brevity, efficiency, and clarity are prioritized. As such, morphological choices were often driven by functional necessity rather than grammatical correctness.

Such use is further validated by recent studies on task-based digital language use, such as Zhao et al. (2024) and Mishkova-Yotova (2025), where young learners use language strategically to complete objectives. In this sense, the children in this study are not only acquiring morphemes, but also deploying them with intentional communicative purpose, which is a strong indicator of active linguistic development.

CONCLUSION

The findings indicate that children predominantly use free morphemes, especially concrete nouns and action verbs that are directly related to game mechanics and player interaction. In addition, children showed early exposure to derivational and inflectional affixes, though mostly in fixed and frequently encountered forms. Function words were present but often appeared in formulaic phrases rather than flexible syntactic use. Importantly, bound morphemes and infixes were absent, suggesting that children acquire these more complex forms at later stages of development or through more structured educational contexts. The study also identified the use of code-mixing, with children attaching Indonesian grammatical elements to English lexical roots, reflecting pragmatic and creative strategies for meaning-making.

These results reinforce existing literature on morphology and second language acquisition, particularly the role of frequency, semantic transparency, and context in early morpheme development (Katamba, 1993; Rankin et al., 2021). They also support the view that game-based interaction provides a meaningful, task-oriented

setting in which children can experiment with language and internalize new morphemes through real-time communication.

Practically, it highlights the potential of digital games as supplementary tools for language acquisition, particularly for vocabulary and morphological awareness. Theoretically, it contributes to a growing body of work advocating for informal learning environments in SLA research, especially those involving technology and child learners.

For future research, it is recommended to expand the participant sample to include children from varied linguistic and educational backgrounds, examine the longitudinal development of morphological competence in game-based learning, and explore more advanced or less frequent morphemes through controlled experimental designs. Additionally, further studies could integrate multimodal analysis, including visual, auditory, and interactional elements of gaming, to better understand how morphology is reinforced through multiple input channels.

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