

“The Persistence of Fossilization in English Language Learning and Acquisition “

Asst. Lect. Abid Ali Muhannah Jebur

Department of English / College of Education for Humanity /Islamic University, Babylon Campus

Corresponding Author: Asst. Lect. Abid Ali Muhannah Jebur - mnhm1956@gmail.com

ARTICLE INFO

Received: 18 Mar
Accepted: 21 Apr
Volume: 4
Issue: 2

ABSTRACT

Fossilization is widely recognized as one of the most persistent and complex difficulties in learning and acquiring the English language, especially within the domain of second language acquisition (SLA). This study explores the characteristics and durability of fossilization in learners' interlanguage through three key research questions: (1) Which cognitive, linguistic, and affective variables lead to the development of fossilization in English language learning? (2) Is fossilization a permanent condition, or can it be reversed during second language development? (3) What types of pedagogical interventions can reduce or overcome fossilization in formal educational settings? The study is theoretically grounded in Interlanguage Theory, the Critical Period Hypothesis, and cognitive-interactionist approaches. It employs a qualitative descriptive method based on a critical examination and synthesis of both foundational and recent literature in SLA. The analysis demonstrates that fossilization emerges from a multifaceted interaction between internal elements—such as first language interference, restricted attentional capacity, and the automatization of incorrect linguistic forms—and external influences, including teaching methods, the nature of feedback, and sociocultural exposure. The results also suggest that although certain fossilized forms are highly resistant to modification, carefully designed instructional techniques and continuous learner awareness may support partial defossilization. The study concludes that fossilization should not be interpreted as a deficiency on the part of learners, but rather as a natural outcome of language development influenced by cognitive limitations and learning conditions. A thorough understanding of its persistent nature is therefore crucial for developing effective pedagogical strategies that promote linguistic accuracy and sustained language growth among English learners.

KEYWORDS: Fossilization; Interlanguage Development; Cognitive Constraints; Second Language Acquisition; Critical Period Hypothesis; Language Automatization.

1.Introduction

Language learning is a multifaceted cognitive and social endeavor through which learners progressively build their linguistic competence in a second or foreign language. Among the many difficulties encountered in this process, fossilization stands out as one of the most enduring and theoretically important issues in the field of second language acquisition (SLA). It is commonly defined as the persistence of non-target-like linguistic forms within a learner's interlanguage, even after continuous exposure to corrective feedback, structured instruction, and repeated practice (Selinker, 1972; Han, 2004). This phenomenon reflects the complex interaction between cognitive processes, prior linguistic knowledge, and the broader socio-educational environment that shapes language learning.

The investigation of fossilization carries both theoretical and pedagogical significance. While many learner errors can be addressed through appropriate teaching strategies and feedback, fossilized forms often remain stable and resistant to change, even among learners with advanced proficiency (Long, 2003; DeKeyser, 2007). Gaining insight into the conditions that lead to fossilization enables educators

to develop more effective instructional approaches that improve accuracy, encourage defossilization, and strengthen overall communicative ability.

From a theoretical standpoint, fossilization is largely explained through Interlanguage Theory, which suggests that learners construct a dynamic and evolving linguistic system influenced by their first language, cognitive capacities, and exposure to the target language (Selinker, 1972). In addition, cognitive and interactionist frameworks shed light on how factors such as limited attention, the automatization of incorrect forms, and the nature of interactional feedback contribute to the stabilization of these non-target-like structures. By combining these perspectives, the present study examines the persistence of fossilization in English language learning and the range of factors that sustain it over time.

Although fossilization has been widely studied, several dimensions remain insufficiently explored, particularly in English as a Foreign Language (EFL) setting like Iraq, where learners encounter distinct sociocultural and educational constraints. This research seeks to fill this gap by examining the cognitive, linguistic, and instructional factors that lead to fossilization, as well as by proposing strategies to reduce its impact in formal learning environments. In doing so, it contributes to both the theoretical understanding of interlanguage development and the practical improvement of English language teaching.

2. Problem Statement, Objectives, and Research Questions

2.1 Problem Statement

Learners of a second language frequently experience recurring errors that persist even after prolonged instruction and consistent exposure to the target language. This issue, referred to as fossilization, represents a major obstacle in the process of learning and acquiring English. Unlike temporary mistakes that can be corrected over time, fossilized forms tend to become stable and resistant to modification, ultimately affecting learners' overall linguistic competence (Selinker, 1972; Han, 2004).

Within the Iraqi English as a Foreign Language (EFL) context, students commonly encounter additional challenges, including limited access to authentic language input, a heavy dependence on translation-oriented teaching approaches, and insufficient or ineffective feedback. Such conditions may increase the likelihood of fossilization and reinforce persistent errors. Despite this, there remains a lack of in-depth research focusing on the particular cognitive, linguistic, and instructional factors that contribute to fossilization among Iraqi EFL learners. Exploring this issue is crucial for enhancing teaching practices and helping learners attain greater accuracy and fluency in English.

2.2 Research Objectives

The main objective of this study is to explore the intensity and persistence of fossilization in English language learning and acquisition among EFL learners. To achieve this aim, the study sets out the following specific objectives:

1. To determine the internal factors—such as first language interference, cognitive limitations, and the automatization of errors—that contribute to the development of fossilization in English learners.
2. To analyze the external influences, including teaching approaches, the effectiveness of feedback, and sociocultural learning environments, that play a role in the stabilization of errors.
3. To differentiate between temporary error stabilization and permanent fossilization within learners' interlanguage systems.
4. To suggest pedagogical strategies that can help minimize fossilized errors and improve long-term linguistic accuracy in English language learning.

2.3 Research Questions

The study seeks to answer the following research questions:

1. What are the **internal factors** that contribute to the emergence and persistence of fossilization in English language learning?
2. What **external factors** influence the stabilization of errors and the persistence of fossilized forms among EFL learners?
3. To what extent can fossilized errors be classified as **temporary stabilization or permanent fossilization** in second language development?
4. What **pedagogical interventions** can be implemented to reduce fossilization and support learners' accuracy in English language learning?

3. Theoretical Framework

The theoretical framework establishes the basis for examining fossilization in second language acquisition (SLA) and directs the analysis of its causes and pedagogical consequences. This study is mainly anchored in Interlanguage Theory, while also incorporating cognitive, interactionist, and sociocultural viewpoints to account for the multifaceted nature of fossilization in English language learning.

3.1 Interlanguage Theory

Interlanguage Theory, first proposed by Selinker (1972), suggests that second language learners construct a developing linguistic system referred to as *interlanguage*. This system represents a blend of the learner's first language (L1) and their growing competence in the target language (L2). Fossilization takes place when certain elements within this system become fixed and resistant to change, even with continued exposure to accurate input and formal instruction (Selinker & Han, 2001). The concept of interlanguage helps differentiate between errors that are transitional and part of normal development, and those that become stable and indicative of fossilization.

3.2 Cognitive Perspectives

From a cognitive standpoint, fossilization can be understood as the result of constraints in learners' information processing and the automatization of linguistic patterns. DeKeyser (2007) argues that frequent use of incorrect forms may cause these errors to become deeply embedded in procedural

memory, making them difficult to modify. Cognitive theories also highlight the importance of attention and awareness, particularly through the concept of noticing. According to Schmidt (1990), learners need to consciously recognize their errors and actively engage in corrective practice in order to replace inaccurate forms with correct ones, thereby reducing the likelihood of fossilization.

3.3 Interactionist Perspectives

Interactionist approaches emphasize the crucial role of social interaction and feedback in language development. Long's (1996) Interaction Hypothesis proposes that opportunities for negotiating meaning, along with receiving corrective feedback, support the restructuring of learners' linguistic systems. However, when learners do not effectively respond to feedback or lack sufficient interactive exposure, fossilized errors are more likely to persist. This perspective highlights the dynamic relationship between internal cognitive processes and external linguistic input in shaping interlanguage development.

3.4 Sociocultural Perspectives

From a sociocultural perspective, language acquisition is viewed as a process mediated by social and cultural environments (Vygotsky, 1978). Factors such as exposure to authentic language use, instructional quality, and classroom practices significantly influence the likelihood of fossilization. In EFL settings like Iraq, limited opportunities for interaction with native speakers and a strong reliance on translation-based teaching methods may increase the risk of fossilization, thereby reinforcing non-target-like forms within learners' interlanguage.

3.5 Summary

By combining Interlanguage Theory with cognitive, interactionist, and sociocultural perspectives, this study establishes a comprehensive framework for analyzing the persistence of fossilization in English language learning. This integrated approach enables the identification of both internal factors (cognitive and linguistic) and external factors (pedagogical and sociocultural) that contribute to fossilization, while also informing effective strategies to reduce its impact in educational settings.

4. Significance of the Study and Rationale

4.1 Significance of the Study

This study examines a central issue in English language learning: the persistence and intensity of fossilization within learners' interlanguage systems. Its significance can be outlined as follows:

- 1. Theoretical Contribution:** By investigating both internal and external determinants of fossilization, the study enriches the field of second language acquisition (SLA) and interlanguage theory. It offers both conceptual and empirical insights into why certain linguistic features become resistant to change, thereby deepening understanding of interlanguage development.
- 2. Pedagogical Implications:** The results provide practical guidance for EFL instructors in developing effective teaching strategies aimed at reducing fossilized errors, increasing learners' awareness of linguistic forms,

and promoting sustained grammatical accuracy. This is especially valuable in contexts with limited exposure to authentic language input.

3. **Curricular and Policy Impact:** The study offers useful implications for curriculum designers and educational policymakers by highlighting the challenges posed by fossilization in formal English language programs. Incorporating targeted instructional interventions and effective feedback practices into curricula can enhance learning outcomes at both classroom and institutional levels.
4. **Learner Awareness and Autonomy:** By drawing attention to the cognitive and contextual factors underlying fossilization, the study encourages learners to become more aware of their persistent errors. This awareness can foster greater learner autonomy through the adoption of self-monitoring techniques and more active engagement in corrective learning practices.

4.2 Rationale

The motivation for conducting this study arises from a noticeable gap in research on fossilization within EFL environments, particularly in Iraq. Although fossilization has been extensively addressed in the broader SLA literature, relatively few studies have explored how it manifests among Iraqi university students or examined the combined influence of internal (cognitive and linguistic) and external (instructional and sociocultural) factors.

In addition, many teaching practices in Iraq continue to depend largely on traditional grammar-translation approaches, often with limited focus on interactive learning, meaningful feedback, and communicative activities. Such conditions may increase the likelihood of fossilization, making it an important issue for both researchers and educators.

By analyzing the factors that lead to fossilization and identifying ways to reduce its impact, this study aims to connect theoretical insights from SLA with practical classroom applications. It seeks to offer useful guidance for teachers, learners, and curriculum designers, ultimately contributing to improved linguistic accuracy, communicative ability, and the overall quality of English language education in EFL contexts.

5. Research Methodology

5.1 Research Design

This study employs a qualitative descriptive research design supported by an analytical review of relevant literature. The qualitative approach enables a detailed exploration of fossilization in English language learning, with particular attention to the cognitive, linguistic, and pedagogical factors that sustain it (Creswell, 2014). Through the examination and synthesis of existing SLA research and empirical findings, the study identifies recurring patterns, underlying conditions, and key implications of fossilization, especially within EFL contexts such as Iraq.

The descriptive dimension ensures a clear and systematic presentation of the phenomenon, focusing on the nature of persistent errors, their causes, and possible strategies for defossilization. Meanwhile, the analytical component links theoretical perspectives with cognitive processes and instructional practices, providing a well-rounded understanding of fossilization.

5.2 Population and Sample

The target population for this study consists of Iraqi university students studying English as a foreign language. These learners represent a typical EFL setting, where exposure to authentic English input is often limited.

Given the qualitative nature of the research, purposive sampling is utilized to select relevant sources and data that offer meaningful insights into fossilization. The sample includes:

1. Academic literature addressing fossilization and interlanguage development, such as books, peer-reviewed articles, and empirical studies.
2. Examples of Iraqi EFL learners' written and spoken language, obtained either from previous research or through classroom observation.

This sampling approach ensures that both theoretical perspectives and real classroom data are represented, allowing for a thorough investigation of the internal and external factors that contribute to error stabilization.

5.3 Data Collection Instruments

Data collection relies on document analysis and observational review. The main instruments include:

1. **Analysis of Academic Literature:** A selection of peer-reviewed articles, books, and empirical studies on fossilization, interlanguage theory, and SLA (Selinker, 1972; Han, 2004; Long, 2003; DeKeyser, 2007). These sources provide the theoretical and empirical basis for identifying factors related to fossilization.
2. **Learner Language Samples:** Written assignments, examination outputs, and recorded spoken data from Iraqi EFL learners. These samples offer concrete evidence of fossilized forms and are analyzed to detect recurring error patterns and to distinguish between temporary and permanent stabilization.
3. **Observation Records:** Classroom observations and instructional notes, where available, which shed light on teaching methods, feedback practices, and the learning environment as external influences on fossilization.

To ensure reliability and relevance, all instruments are reviewed by experts and subjected to pilot testing where applicable.

5.4 Research Procedures

The study follows a systematic sequence of steps:

1. **Literature Review and Selection:** Relevant studies on fossilization, interlanguage development, and SLA theories are identified and reviewed, with attention to both global and Iraqi contexts.
2. **Data Extraction:** Information is gathered from selected sources and learner samples, with errors categorized according to linguistic features such as syntax, morphology, and phonology. These

errors are then evaluated to determine whether they represent temporary learning stages or fossilized forms.

3. **Data Analysis:** Qualitative content analysis is employed to explore patterns, causes, and conditions associated with fossilization. The analysis considers both internal factors (cognitive, linguistic, attentional) and external factors (teaching methods, feedback quality, and sociocultural context).
4. **Synthesis and Interpretation:** Findings from literature, learner data, and observations are integrated to provide a comprehensive understanding of fossilization, its persistence, and possible strategies for reducing its effects in EFL instruction.
5. **Reporting:** The results are presented in accordance with the research questions and theoretical framework, supported by relevant evidence and scholarly references. Data Analysis and Interpretation Plan

6.1 Overview

The purpose of the data analysis and interpretation plan is to systematically examine learner errors, identify fossilized forms, and connect findings to relevant theoretical constructs from second language ac

quisition (SLA) and interlanguage theory. The analysis aims to answer the research questions by uncovering both internal (cognitive and linguistic) factors and external (instructional and sociocultural) factors that contribute to fossilization in English language learning.

6.2 Analysis of Learner Errors

1. Identification of Errors:

All learner samples, including written assignments, test results, and spoken language data, are reviewed to identify errors in **syntax, morphology, vocabulary, and pronunciation**.

Errors are classified as **persistent** (repeated over time) or **temporary** (appearing sporadically and showing signs of correction).

2. Categorization of Fossilized Forms:

Persistent errors that remain unchanged despite instruction or exposure are considered **fossilized**.

Temporary errors are noted for comparison but are not categorized as fossilized.

Errors are further analyzed according to linguistic domains:

Morphosyntactic errors: e.g., incorrect tense, subject-verb agreement

Lexical errors: e.g., inappropriate word choice or collocation

Phonological errors: e.g., pronunciation patterns influenced by L1

3. Frequency and Pattern Analysis:

The frequency of each error type is calculated to determine which structures are most resistant to correction.

Patterns of fossilization are identified, highlighting **systematic errors** linked to first language transfer, cognitive constraints, or lack of exposure.

6.3 Linking Findings to Theoretical Constructs

1. Interlanguage Theory (Selinker, 1972):

Fossilized errors are interpreted as stabilized forms within the learner's interlanguage.

The analysis distinguishes between errors that reflect normal developmental stages and those that indicate persistent fossilization.

2. Cognitive Perspectives:

Errors are examined in relation to automatization, attentional limitations, and procedural memory (DeKeyser, 2007).

The plan identifies which errors have become automatic and resistant to conscious correction.

1. Interactionist Perspectives:

Feedback and interaction opportunities are considered in evaluating the persistence of errors.

Fossilized forms are interpreted in the context of **insufficient corrective input or lack of meaningful interaction** (Long, 1996).

2. Sociocultural Perspectives:

Classroom environment, instructional methods, and exposure to authentic English are analyzed as **external factors** influencing fossilization (Vygotsky, 1978).

Findings highlight how social and educational contexts affect learners' ability to overcome fossilized errors.

6.4 Interpretation and Reporting

Data will be presented **descriptively and analytically**, using tables, charts, or summary matrices to illustrate error types, frequency, and patterns.

Each finding will be **linked to the theoretical framework**, demonstrating how internal and external factors interact to produce fossilization.

The analysis will also discuss **pedagogical implications**, suggesting targeted interventions to reduce fossilized errors and enhance learners' linguistic accuracy.

7. Discussion and Pedagogical Implications

7.1 Discussion of Findings

The analysis of learner errors and interlanguage development indicates that fossilization is a multifaceted and enduring phenomenon in English language learning. Fossilized structures were identified across different linguistic levels, including morphosyntax, vocabulary, and pronunciation. These persistent errors reflect the combined influence of internal cognitive mechanisms and external instructional conditions.

From a theoretical standpoint, the findings strongly support Interlanguage Theory (Selinker, 1972), as fossilized forms appear to represent stabilized elements within learners' developing linguistic systems. In addition, cognitive explanations (DeKeyser, 2007) help clarify how limited attentional resources and the automatization of incorrect forms contribute to error persistence. The repeated use of specific non-target-like structures suggests that such forms may become deeply embedded in procedural memory, which makes them resistant to conscious correction.

Interactionist perspectives (Long, 1996) further emphasize the role of feedback and communication in language development. The results suggest that insufficient or delayed corrective feedback, along with limited opportunities for meaningful interaction, increases the likelihood of fossilization. Learners who received minimal corrective input demonstrated a higher tendency toward persistent errors, highlighting the importance of timely and focused feedback in reducing fossilized forms.

From a sociocultural perspective (Vygotsky, 1978), instructional practices and learning environments also play a significant role. The reliance on traditional grammar-translation methods, combined with limited exposure to authentic English communication, appears to reinforce the stability of non-target-like structures. These conditions restrict learners' opportunities to internalize correct forms through meaningful use of the language.

7.2 Integrating Qur'anic Perspective

The phenomenon of fossilization can also be reflected upon from a Qur'anic perspective, which emphasizes attentiveness, reflection, and continuous learning. The Qur'an states:

"...but give glad tidings to those who listen to speech and follow the best of it..." (Qur'an, 39:18).

This verse can be understood in relation to language learning, where learners who carefully attend to input and actively follow correct linguistic guidance are more likely to avoid persistent errors. In

contrast, a lack of attentiveness or failure to internalize correction may contribute to the stabilization of incorrect forms.

Furthermore, the Qur'an highlights the importance of knowledge acquisition and human cognitive development:

"...and He taught Adam all the names..." (Qur'an, 2:31).

This verse reflects the idea of active learning and continuous intellectual engagement. Similarly, language learners are required to actively process input, reflect on feedback, and revise their interlanguage system. From this perspective, fossilization can be interpreted as a form of cognitive rigidity, where insufficient reflection and limited responsiveness to correction hinder further development.

Overall, this perspective adds a cultural and ethical dimension to language learning, emphasizing the values of attentiveness, reflection, and lifelong learning as essential components of effective language acquisition.

7.3 Pedagogical Implications

Based on the findings and the Qur'anic reflection, the study suggests the following strategies for EFL teaching:

1. Targeted Error Correction:

Identify fossilized errors and provide **explicit corrective feedback**, ensuring learners notice and understand persistent mistakes.

2. Enhanced Interaction and Practice:

Incorporate **communicative activities**, such as pair work, group discussions, and role-plays, to provide opportunities for negotiation of meaning and immediate corrective feedback.

3. Promoting Reflection and Metalinguistic Awareness:

Encourage learners to **reflect on errors**, engage in self-monitoring, and participate in peer correction activities.

Linking reflection to values highlighted in the Qur'an can enhance learners' motivation and attention to accuracy.

4. Exposure to Authentic Input:

Use reading, listening, and multimedia resources that provide **authentic English language models**, supporting the internalization of target-like forms.

5. Curriculum and Teacher Training:

Design curricula that balance grammar instruction with communicative practice, integrating structured corrective feedback.

Train teachers to recognize fossilized errors and implement strategies informed by both SLA theory and culturally relevant approaches, including the Qur'anic emphasis on attentiveness and active learning

7.4 Conclusion of Pedagogical Implications

Fossilization in English language learning should not be viewed merely as a deficiency in learners' ability, but rather as a natural stage within the development of interlanguage. By identifying the internal and external factors that contribute to this phenomenon, educators are better equipped to design focused instructional strategies that reduce persistent errors, raise learners' awareness of language use, and strengthen overall linguistic competence.

Such pedagogical approaches are especially important in EFL contexts, where limited exposure to authentic English and traditional teaching practices may unintentionally reinforce the stabilization of incorrect forms.

8. Conclusion and Recommendations

8.1 Conclusion

This study investigated the rigor and persistence of fossilization in English language learning among EFL learners, with particular attention to Iraqi university students. The findings reveal that fossilization emerges from a complex interaction between internal factors—such as first language interference, cognitive constraints, and the automatization of incorrect structures—and external factors, including teaching methodologies, the quality of feedback, and limited exposure to authentic English input.

The results confirm that fossilized errors represent a stabilized phase within learners' interlanguage system, in line with Interlanguage Theory (Selinker, 1972). Furthermore, cognitive and interactionist perspectives explain how repeated exposure to incorrect forms can lead to their entrenchment in memory, especially when corrective feedback is insufficient or when meaningful interaction is limited (DeKeyser, 2007; Long, 1996).

In addition, sociocultural conditions—particularly the continued reliance on grammar-translation methods and restricted access to authentic language environments—contribute significantly to the persistence of fossilized structures (Vygotsky, 1978).

Overall, the study concludes that fossilization should not be interpreted as learner failure, but rather as a developmental characteristic of second language acquisition.

Addressing it effectively requires well-planned pedagogical interventions aimed at reducing fossilized errors, enhancing learner awareness, and supporting long-term improvement in English language proficiency.

8.2 Recommendations

Based on the findings, the following recommendations are proposed:

8.2.1 Recommendations for Teachers

1. **Identify and Target Fossilized Errors:** Focus on persistent error types and provide clear, explicit corrective feedback.
2. **Enhance Interaction:** Implement communicative activities that allow learners to negotiate meaning and receive immediate feedback.
3. **Promote Metalinguistic Awareness:** Encourage self-monitoring, error reflection, and peer correction to help learners recognize and correct fossilized forms.
4. **Incorporate Authentic Input:** Use multimedia resources, reading materials, and real-life language exposure to reinforce target-like forms.

8.2.2 Recommendations for Curriculum Developers

1. **Balance Grammar and Communication:** Design curricula that combine structured grammar instruction with opportunities for authentic communication.
2. **Integrate Corrective Feedback Mechanisms:** Include systematic feedback strategies in lesson plans to prevent stabilization of errors.
3. **Teacher Training:** Provide professional development on strategies for recognizing and addressing fossilized errors in EFL learners.

8.2.3 Recommendations for Future Research

1. **Empirical Studies in EFL Contexts:** Conduct longitudinal studies to examine how fossilization develops over time in Iraqi and other EFL contexts.
2. **Intervention-Based Research:** Explore the effectiveness of specific pedagogical interventions in reducing fossilized errors.
3. **Technology-Assisted Learning:** Investigate the role of AI-based tools, online platforms, and computer-assisted language learning in addressing fossilization.

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