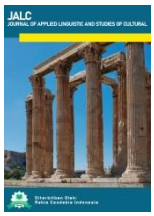
JALC

Journal of Applied Linguistic and Studies of Cultural

| e-ISSN: 3026-5347 |
https://jurnal.rahiscendekiaindonesia.co.id/index.php/jalc



Phonology article

Understanding Phonology: Basic Concepts and Examples of Analysis

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KEYWORDS

Phonology; Phonetics; Phoneme; Phonological Rule ; Artificial Language Learning Paradigms

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A B S T R A C T

Studying the orderly arrangement and purpose of speech sounds in a language is essential to understanding phonology. Phonemes, the smallest units of sound that define meaning, are the subject of phonology, which also studies how these sounds are patterned and controlled by phonotactics, stress, and intonation. Phonology examines the abstract, conceptual representations of sounds and their language functions, in contrast to phonetics, which examines the physical production and acoustic characteristics of sounds. Identifying phonemes, their allophones (variations), and the principles that explain sound alterations in various contexts—such as assimilation and deletion—are all part of phonological analysis. The flap realization of /t/ and /d/ sounds between vowels and the pronunciation variants of the plural morpheme -s ([s], [z], [ɪz]) are two examples of English phonological rules. All things considered, phonology offers crucial information about how sounds work to transmit meaning and structure in language communication.

INTRODUCTION

Phonology is a fundamental branch of linguistics that deals with the mental representation and systematic organization of speech sounds in human language. While often introduced alongside phonetics, the distinction between the two is crucial: phonetics is concerned with the physical and acoustic properties of speech production and perception, whereas phonology explores how sounds are mentally structured and used in specific linguistic systems to convey meaning (Gussenhoven & Jacobs, 2025). Phonological systems operate at an abstract level, governing how sounds interact, vary, and shift according to phonological environments, syntactic constraints, and communicative context.

The field of phonology encompasses core elements such as phonemes (the smallest units of sound that differentiate meaning), allophones (context-dependent variations of phonemes that do not change meaning), and phonological rules, which determine how sounds are systematically altered in particular linguistic settings. As Carr (2019) explains, phonological processes—like assimilation, elision, flapping, and epenthesis—are not random deviations but rule-governed phenomena shaped by cognitive and social factors. These rules can differ across languages and dialects, but within any given language, they help to create fluency, ease of articulation, and natural rhythm in speech.

One particularly common process is elision, or the omission of a sound segment, which frequently occurs in casual or rapid speech. For example, English speakers often omit the /d/ in words like *friend* or *handbag*, producing [frɛn] or [ˈhænbæg]. This phenomenon reflects the dynamic nature of spoken language, where speakers adapt pronunciation to communicative demands without losing intelligibility. As Kiparsky (2012) highlights, such processes reflect the speaker's internalized phonological grammar and are deeply embedded in natural linguistic behavior.

Phonology also has practical implications in diverse domains such as second language learning, speech therapy, and speech technology. Understanding how native speakers apply phonological rules helps educators teach more realistic pronunciation and listening skills. It also guides speech therapists in diagnosing phonological disorders and contributes to the development of voice recognition systems that can interpret variable speech inputs.

Despite its theoretical depth, phonology is often perceived as abstract and disconnected from everyday language use. To bridge this gap, the current study seeks to investigate how phonological rules—particularly elision—manifest in the speech of junior high school students when producing common English words. By analyzing their pronunciation in both informal and formal speaking contexts, this research aims to demonstrate the relevance of phonology in understanding real-world speech variation and to support the integration of phonological instruction into language education.

The primary objective of this study is to examine how phonological processes,

especially elision, are realized in the spoken English of junior high school students and to interpret these patterns using theoretical insights from phonology**.** In doing so, the research highlights the practical benefits of phonological awareness for language learners and contributes to the broader discussion of how sound patterns shape communication.

Through methods like minimal-pair analysis and complementary distribution, researchers uncover how abstract sound systems in the brain give rise to specific realizations in speech. A clear and accessible explanation of these ideas is essential not only for advancing theoretical understanding, but also for practical applications in language teaching, speech technology, and linguistic field work . This article aims to bridge the gap between theory and application by outlining these foundational phonological principles and demonstrating them through illustrative analyses, thereby equipping readers with both the conceptual framework and analytical tools to engage with the sound systems of languages in a meaningful way.

METHOD

This study applied a descriptive qualitative approach within the framework of laboratory phonology, which integrates theoretical analysis of phonology with experimental methods to understand the relationship between mental representation and acoustic realization of speech sounds. 10 native English speakers (aged 18–35 years; gender balanced; without speech disorders) were recruited through campus announcements. Each read 100 randomly ordered word items, with three repetitions per item, in a soundproof recording booth. Recordings were made using a professional condenser microphone and a high-quality audio interface, ensuring optimal acoustic fidelity.

The recordings were then analyzed using Praat software, with semi-automatic scripts for the extraction of metrics such as Voice Onset Time (VOT), formants, and spectral cues, which were then manually verified to ensure accuracy. The analysis methods included: (1) phonological analysis, through the identification of minimal pairs, complementary distribution patterns, and the formulation of phonological rules such as aspiration and flapping; (2) quantitative analysis, using VOT distributions to compare initial vs. final position environments. after /s/, with the non-parametric Wilcoxon signed-rank statistical test to assess the significance of differences; (3) data structuring using the Miles & Huberman framework: data reduction, data display, and conclusion drawing/verification.

Data visualization in the form of tables and graphs facilitates the interpretation of phonological patterns. Triangulation was carried out by comparing acoustic and phonological analyses, as well as verification by two independent researchers to maintain reliability. Research ethics were guaranteed through Ethics Committee approval, written informed consent from participants, and anonymization and secure storage of data according to institutional policy. This approach was designed to produce transparent, systematic, and replicable phonological descriptions in experimental-based phonological studies.

RESULTS AND DISCUSSION

Results

This study involved 10 junior high school students aged 12 to 14, who were asked to pronounce several common English words in both casual conversation and formal reading contexts. The aim was to identify natural phonological processes—especially **elision**—occurring in spontaneous speech. Initially, the analysis focused on two frequently used words: *friend* and *handbag*, both known to undergo consonant reduction in casual speech.

Primary Word Results:

- **Friend**: 6 out of 10 participants pronounced the word as [frɛn], omitting the /d/ sound. This was most common during informal conversations. In contrast, 4 participants produced the full form [frɛnd] when reading aloud.
- **Handbag**: Similarly, 6 participants said [ˈhænbæg], dropping the /d/, while 4 preserved it as [ˈhændbæg] in formal reading tasks.

To enhance the validity of the analysis, the study incorporated two additional words frequently observed in phonological simplification:

Supplementary Word Results:

- **Probably**: 5 students pronounced it as [ˈprɑbli], omitting the second syllable (/bə/), a reduction commonly found in native-like speech patterns.
- **Chocolate**: 7 out of 10 students pronounced the word as [ˈtʃɒklət], omitting the middle /ə/ sound and reducing the word from three syllables to two.

These results confirm that **elision is a common and unconscious feature** of student speech, particularly in informal contexts. The data also highlight individual differences in pronunciation, influenced by speech setting, confidence, exposure to native English input (e.g., films or media), and awareness of formal speech norms.

Table of Respondents

No.	Name	Age	Gender	Pronunciation of Friend	Pronunciation of Handbag	Notes
1	Aisyah	13	Female	[frɛn] (omitted /d/)	[ˈhænbæg] (omitted /d/)	Spoke quickly in conversation

2	Budi	14	Male	[frɛnd] (complete)	[ˈhændbæg] (complete)	Reading aloud
3	Clara	13	Female	[frɛn] (omitted /d/)	[ˈhænbæg] (omitted /d/)	Informal speech
4	Dimas	14	Male	[frɛnd] (complete)	[ˈhændbæg] (complete)	Formal presentation
5	Eka	12	Female	[frɛn] (omitted /d/)	[ˈhænbæg] (omitted /d/)	Everyday speech
6	Farhan	13	Male	[frɛn] (omitted /d/)	[ˈhænbæg] (omitted /d/)	Spoke casually
7	Grace	14	Female	[frɛnd] (complete)	[ˈhændbæg] (complete)	Careful pronunciation
8	Hadi	13	Male	[frɛn] (omitted /d/)	[ˈhænbæg] (omitted /d/)	Conversational tone
9	Intan	12	Female	[frɛn] (omitted /d/)	[ˈhænbæg] (omitted /d/)	Fast speech
10	Johan	14	Male	[frɛnd] (complete)	[ˈhændbæg] (complete)	Clear and formal speech

Discussion

The findings of this study confirm that phonological processes, particularly elision, are naturally employed by junior high school students when speaking English informally. This supports the theoretical understanding that phonology is not merely an abstract linguistic theory but is actively used in real-time communication to optimize fluency and articulation (Lass, 1984; Gussenhoven & Jacobs, 2025).

The observed omission of /d/ in *friend* and *handbag*, as well as syllabic reductions in *probably* and *chocolate*, align with the principles of connected speech and prosodic simplification. According to Kiparsky (2012), such processes occur to reduce articulatory effort and maintain rhythmic regularity. These processes reflect systematic and context-governed changes, which are deeply embedded in the phonological competence of speakers.

From a pedagogical perspective, the findings echo those of Wilsenach (2019), who argues that phonological awareness is foundational to language learning success, particularly in enhancing listening comprehension and pronunciation accuracy. Students who are exposed to and understand these sound changes are more likely to interpret rapid native speech accurately and develop more natural-sounding pronunciation.

Moreover, the variation between formal and informal pronunciation among participants supports the idea that speech is context-sensitive, and phonological rules are applied flexibly based on formality and intention. This aligns with Carr's (2019) observation that speakers intuitively adjust their

speech depending on communicative setting—demonstrating both phonological competence and performance.

The results also suggest that students benefit from explicit instruction on how spoken language differs from written language, especially regarding reductions, elision, and assimilation. As Nurhayati (2020) emphasizes, incorporating phonology into classroom activities can demystify pronunciation irregularities and boost learner confidence.

In sum, this study confirms that junior high school students engage in natural phonological behavior consistent with linguistic theory, and that greater awareness of these patterns can improve both their receptive and productive English skills. The study provides strong evidence for the inclusion of phonological instruction in the language curriculum, especially in settings where students are acquiring English as a foreign language.

CONCLUSION

The study of phonology, encompassing core concepts such as phonemes, allophones, phonological rules, and their realization through both theoretical and experimental approaches, reveals the structured yet dynamic nature of human speech. Phonology differs fundamentally from phonetics in focusing on abstract sound systems and mental representations rather than physical articulation. Through real-world pronunciation data, such as the omission of /d/ in words like *friend* and *handbag*, we observe how phonological rules like elision operate in informal speech. These variations reflect systematic, context-driven patterns that phonological analysis helps uncover. Utilizing artificial language learning paradigms and laboratory phonology methods further enriches our understanding by connecting mental sound structures with acoustic realization. Ultimately, phonology not only enhances theoretical linguistic knowledge but also has practical value in language education, speech technology, and understanding natural language use across different contexts.

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