

THE CORRELATION BETWEEN STUDENTS' KNOWLEDGE OF PHONETIC SYMBOLS AND ENGLISH PRONUNCIATION ACCURACY

(A Correlational Study of Fifth-Semester Students of the English Education Study Program at Fatmawati Sukarno State Islamic University of Bengkulu)

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ABSTRACT

The knowledge of phonetic symbols is often underutilized in English pronunciation learning, despite being a fundamental tool for understanding and producing speech sounds accurately. This study aimed to determine whether there is a significant correlation between students' knowledge of English consonant phonetic symbols and their English pronunciation accuracy among fifth-semester students of the English Education Study Program at State Islamic University of Fatmawati Sukarno Bengkulu. A quantitative correlational approach was applied with 20 participants selected through purposive sampling. Data were collected using a 50-item multiple-choice Knowledge of Phonetic Symbols Test and an oral Pronunciation Accuracy Test assessed by two independent raters. Data were analyzed using Pearson Product-Moment Correlation through SPSS, preceded by Shapiro-Wilk normality and linearity tests. Results showed a correlation coefficient of $r = 0.762$ with a significance value of 0.000 ($p < 0.05$), indicating a statistically significant strong positive correlation. The coefficient of determination ($r^2 = 0.581$) revealed that 58.1% of the variance in pronunciation accuracy was explained by phonetic symbol knowledge. It can be concluded that students with greater knowledge of IPA consonant symbols tend to demonstrate higher pronunciation accuracy, highlighting the importance of systematic phonetic symbol instruction in English Education programs.

Keywords: Phonetic symbols, IPA, pronunciation accuracy, consonant sounds, EFL learners.

ABSTRAK

Pengetahuan tentang simbol fonetik sering kurang dimanfaatkan dalam pembelajaran pengucapan bahasa Inggris, padahal simbol fonetik merupakan alat dasar yang penting untuk memahami dan memproduksi bunyi bahasa secara akurat. Penelitian ini bertujuan untuk mengetahui apakah terdapat korelasi yang signifikan antara pengetahuan mahasiswa tentang simbol fonetik konsonan bahasa Inggris dan akurasi pengucapan bahasa Inggris mereka pada mahasiswa semester lima Program Studi Pendidikan Bahasa Inggris Universitas Islam Negeri Fatmawati Sukarno Bengkulu. Penelitian ini menggunakan pendekatan kuantitatif korelasional dengan 20 partisipan yang dipilih melalui purposive sampling. Data dikumpulkan menggunakan tes pilihan ganda Pengetahuan Simbol Fonetik yang terdiri dari 50 butir soal dan tes lisan Akurasi Pengucapan yang dinilai oleh dua rater independen. Data dianalisis menggunakan Pearson Product-Moment Correlation melalui SPSS,

yang didahului oleh uji normalitas Shapiro-Wilk dan uji linearitas. Hasil penelitian menunjukkan koefisien korelasi $r = 0,762$ dengan nilai signifikansi $0,000$ ($p < 0,05$), yang mengindikasikan adanya korelasi positif kuat yang signifikan secara statistik. Koefisien determinasi ($r^2 = 0,581$) mengungkapkan bahwa 58,1% variansi akurasi pengucapan dijelaskan oleh pengetahuan simbol fonetik. Disimpulkan bahwa mahasiswa dengan pengetahuan simbol fonetik IPA yang lebih baik cenderung menunjukkan akurasi pengucapan yang lebih tinggi, sehingga menekankan pentingnya pembelajaran simbol fonetik yang sistematis dalam program pendidikan bahasa Inggris.

Kata Kunci: Simbol fonetik, IPA, akurasi pengucapan, bunyi konsonan, pembelajaran bahasa Inggris sebagai bahasa asing.

A. Introduction

English plays a significant role as an international language used in education, science, technology, business, and global communication. In Indonesia, English is taught from elementary school to higher education, emphasizing the importance of developing students' English proficiency. For students of the English Education Study Program, mastery of English is particularly important because they are expected not only to communicate effectively in English but also to become future English teachers and language practitioners.

Among the various components of English proficiency, pronunciation is one of the most essential yet challenging skills for English as a Foreign Language (EFL) learners. Accurate pronunciation enables speakers to convey messages clearly

and avoid misunderstandings, whereas inaccurate pronunciation may reduce intelligibility and lead to communication breakdowns. For Indonesian learners, pronunciation difficulties frequently occur because the English sound system differs considerably from that of the Indonesian language.

One of the most problematic areas in English pronunciation is the production of consonant sounds. Several English consonants, such as /θ/, /ð/, /ʃ/, /ʒ/, and /tʃ/, do not exist in the Indonesian sound system. Consequently, Indonesian learners often substitute these sounds with familiar native-language sounds, for example pronouncing think /θɪŋk/ as tink or this /ðɪs/ as dis. This tendency is aggravated by the inconsistency between English spelling and pronunciation, as learners often depend on written forms when pronouncing unfamiliar words.

To overcome this problem, learners need a system that accurately represents English sounds independent of spelling, namely the International Phonetic Alphabet (IPA). Through IPA, learners can identify how sounds are produced and distinguish between sounds that may appear similar in written form. Knowledge of phonetic symbols is considered an important foundation in pronunciation learning because it helps learners recognize the correct pronunciation of words and understand the articulatory characteristics of individual sounds. This study focuses specifically on English consonant phonetic symbols because consonant sounds are among the most challenging aspects of pronunciation for Indonesian EFL learners.

Several previous studies have reported positive outcomes regarding the use of phonetic symbols in pronunciation learning. Dandee and Pornwiriyaakit (2022) found that phonetic alphabet practice improved learners' pronunciation of difficult sounds. Almoayidi (2025) reported that phonetic training enhanced learners' transcription awareness and pronunciation accuracy. Danga (2023)

revealed that IPA-based pronunciation applications helped learners reduce pronunciation errors, while Riza (2021) found that IPA transcription assisted students in distinguishing problematic English consonants, and Sitanggang et al. (2023) concluded that phonetic symbols facilitated more accurate pronunciation among EFL learners.

Although these studies have demonstrated the benefits of phonetic symbols in pronunciation instruction, most of them focused on the effectiveness of phonetic training or IPA-based learning media, while research specifically examining the relationship between students' knowledge of phonetic symbols and their pronunciation accuracy, particularly among English Education students in the Indonesian higher education context, remains limited.

A preliminary observation conducted among fifth-semester students of the English Education Study Program at State Islamic University of Fatmawati Sukarno Bengkulu indicated that many students still experienced difficulties in pronouncing several English consonant sounds accurately and rarely referred

to phonetic transcription when learning new vocabulary. This condition suggests that students' knowledge of phonetic symbols may influence their pronunciation performance. Considering that fifth-semester students have completed courses in phonetics, phonology, and pronunciation, they are considered appropriate participants for investigating this issue.

Based on the above discussion, this study aims to examine whether there is a significant correlation between students' knowledge of English consonant phonetic symbols and their English pronunciation accuracy among fifth-semester students of the English Education Study Program at State Islamic University of Fatmawati Sukarno Bengkulu.

B. Research Method

This study employed a quantitative approach with a correlational design to examine the relationship between students' knowledge of English consonant phonetic symbols (Variable X) and their English pronunciation accuracy (Variable Y), without imposing any

treatment or intervention on the participants (Creswell, 2014; Sugiyono, 2022). The study was conducted at the English Education Study Program (Tadris Bahasa Inggris), Faculty of Tarbiyah and Tadris, State Islamic University of Fatmawati Sukarno Bengkulu, during the odd semester of the 2025/2026 academic year.

The population of this study consisted of all fifth-semester students of the English Education Study Program, totaling 66 students across four classes. A sample of 20 students was selected using purposive sampling, based on the consideration that fifth-semester students had completed courses in phonetics, phonology, and English pronunciation.

Data were collected using two instruments. First, a 50-item multiple-choice written test measured students' knowledge of English consonant phonetic symbols (IPA). Second, an oral paragraph-reading test measured students' English pronunciation accuracy, assessed by two independent raters based on three aspects: accuracy of consonant pronunciation, correct articulatory placement, and consistency in

producing consonant sounds. Both instruments were validated through expert judgment by two lecturers with expertise in phonetics, pronunciation teaching, and language assessment.

The reliability of the Knowledge of Phonetic Symbols Test was established using Cronbach's Alpha, while the reliability of the Pronunciation Accuracy Test was established through inter-rater reliability. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 27 through the following stages: (1) descriptive statistics; (2) the Shapiro-Wilk normality test, as the sample size was smaller than 30; (3) a linearity test; and (4) Pearson Product-Moment Correlation to determine the strength and significance of the relationship between Variable X and Variable Y. The hypothesis was tested at a significance level of $\alpha = 0.05$; H_0 was rejected when the significance value (p) was below 0.05.

C. Results and Discussion

The research data were obtained from 20 fifth-semester students of the English Education Study Program at UIN Fatmawati Sukarno Bengkulu through two

instruments: the Knowledge of Phonetic Symbols Test (Variable X) and the Pronunciation Accuracy Test (Variable Y). All data were processed using SPSS version 27.

1. Descriptive Statistics

The descriptive analysis showed that the mean score of Variable X was 62.50 with a standard deviation of 17.349, while the mean score of Variable Y was 60.00 with a standard deviation of 19.104 (Table 1). These results indicate a moderate level of variability in both variables.

Table 1 Descriptive Statistics of Variable X and Y

Variable	N	Mean	SD
X (Phonetic Symbol Knowledge)	20	62.50	17.349
Y (Pronunciation Accuracy)	20	60.00	19.104

Based on a five-level categorization, most students fell into the moderate-to-high category for both phonetic symbol knowledge (25.0% very high, 30.0% high, 35.0% moderate, and 10.0% low) and pronunciation accuracy (20.0% very high, 20.0% high, 35.0% moderate, and 25.0% low).

2. Prerequisite Analysis Tests

The reliability test of the Knowledge of Phonetic Symbols Test using Cronbach's Alpha yielded a coefficient of 0.872 for 50 items, indicating high internal consistency (Sugiyono, 2022). The Shapiro-Wilk normality test showed significance values of 0.348 for Variable X and 0.249 for Variable Y, both greater than 0.05, indicating that the data for both variables were normally distributed. The linearity test showed a Deviation from Linearity value of $F = 0.342$ with a significance greater than 0.05, indicating that the relationship between Variable X and Variable Y was linear. As the assumptions of normality and linearity were satisfied, Pearson Product-Moment Correlation could be applied.

3. Pearson Product-Moment Correlation Test

Table 2 Results of Pearson Product-Moment Correlation

Statistic	Value
Correlation Coefficient (r)	0.762
Significance (Sig. 2-tailed)	0.000
Coefficient of Determination (r^2)	0.581

The results of the Pearson Product-Moment Correlation analysis

showed a correlation coefficient of $r = 0.762$ with a significance value (p) of 0.000 ($p < 0.05$), so H_0 was rejected and H_1 was accepted. This indicates a statistically significant strong positive correlation between students' knowledge of phonetic symbols and their English pronunciation accuracy (Sugiyono, 2022). The coefficient of determination (r^2) of 0.581 shows that 58.1% of the variance in pronunciation accuracy can be explained by phonetic symbol knowledge, while the remaining 41.9% is influenced by other factors outside this study.

4. Discussion

These findings indicate that students with better knowledge of phonetic symbols tend to produce more accurate English pronunciation, while students with lower phonetic symbol knowledge tend to show less accurate pronunciation. This is consistent with Roach (2009), who argues that knowledge of phonetic symbols plays an important role in helping learners recognize and produce sounds that do not exist in their first language. In the context of Indonesian EFL learners, English contains many phonemes that do not exist in Indonesian, such as the

dental fricatives /θ/ and /ð/, so without adequate understanding of IPA symbols, learners tend to rely on orthographic representations, which often leads to mispronunciation.

These results are also consistent with previous research. Maulina (2019) found a significant correlation between phonetic transcription ability and pronunciation accuracy among Indonesian EFL learners, with a correlation coefficient of 0.74. Similarly, Hasan and Yunus (2021) showed that explicit phonetics instruction, including the use of IPA charts and symbol-sound matching exercises, significantly improved students' pronunciation performance. The present study reinforces these findings in a different institutional context, namely the English Education Study Program at UIN Fatmawati Sukarno Bengkulu.

Although the correlation found is strong, it is not perfect, indicating that knowledge of phonetic symbols is a necessary but not sufficient condition for achieving accurate pronunciation. Students also need adequate oral practice and corrective feedback so that their phonetic knowledge can be translated into consistent and accurate

sound production. This finding has important implications for English pronunciation learning, particularly in study programs that offer explicit phonetics courses.

D. Conclusion

Based on the results of the data analysis and discussion, it can be concluded that there is a statistically significant strong positive correlation between students' knowledge of English consonant phonetic symbols and their English pronunciation accuracy among fifth-semester students of the English Education Study Program at UIN Fatmawati Sukarno Bengkulu ($r = 0.762$; $p = 0.000 < 0.05$; $r^2 = 0.581$). These findings indicate that students with better knowledge of phonetic symbols tend to have higher pronunciation accuracy, confirming the importance of systematic phonetic symbol (IPA) instruction in phonetics, phonology, and pronunciation courses. Lecturers are encouraged to integrate phonetic transcription practice into pronunciation learning activities, students are encouraged to make use of phonetic symbols in dictionaries as a self-learning aid, and future researchers are

encouraged to examine other factors influencing pronunciation accuracy using larger sample sizes.

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