Challenges in Teaching English Consonant Clusters to Non-Native Speakers: A Phonological Approach

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ABSTRACT
This study explores how non-native English speakers, especially Indonesian learners, pronounce consonant clusters. Differences in their native phonological systems often cause these difficulties, leading to the addition of vowels or the omission of consonants, which impacts communication. The purpose of this study is to understand non-native speakers' challenges when pronouncing consonant clusters in English. In addition, it also aims to find effective methods to address these issues. This qualitative descriptive study explored the phonological issues of consonant clusters taught by English teachers to non-native speakers. The data were collected through an online Google Forms survey that asked teachers about their experiences, opinions, and teaching methods. Only half of the twenty English teachers had received specific phonological training, and the majority had limited teaching experience, according to the survey. The results suggested that to improve pronunciation, more targeted teaching strategies such as phonetic drills and the use of multimedia tools are needed. Slow sound repetition and audio or video examples, which were the teaching methods evaluated, were found effective. Sound repetition was slightly preferred because of its active practice approach. This study emphasizes the importance of instruction tailored to students' needs and suggests the use of technology to improve the quality. Through a flexible and adaptive approach, it is hoped that students' English language skills can improve significantly.

Keywords: consonant clusters, English language learning, pronunciation, teaching strategies

INTRODUCTION

Teaching English is increasingly becoming a priority in a globalized world as it acts as a lingua franca in fields such as business, technology, and science. Not only do English language skills support more effective communication, but they also open up opportunities for advancement in the academic and professional fields. For non-native speakers, learning English presents its own challenges, especially in the aspects of phonetics and phonology, in which the complexity of sounds can significantly impact comprehension and fluency. Thus, teachers must be aware of these challenges in order to create teaching methods that are efficient and appropriate to the needs of diverse students (Istiqomah & Suprayogi, 2023).

A consonant cluster is a grouping of several consonants found at the beginning or end of a word or syllable (Sari, 2021). Many students who learn English, especially those coming from a language like Indonesian, often have difficulty pronouncing consonant combinations due to differences in the basic sound system of their native language (Situmorang et al., 2023). This difficulty often results in errors when they speak, such as adding vowels between consonants or leaving out some consonants in the cluster.

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When learning English, non-native learners often face challenges in sounding out consonant clusters. This is because their pronunciation of the sounds is different from that of native English speakers. For example, Indonesian does not have complex consonant clusters such as /sk/ or /st/, so students often have difficulty pronouncing them correctly. In addition, students often replace consonant sounds with sounds that are more familiar to them, which can result in vagueness. They also have difficulty in distinguishing word stress and rhythmic patterns, impacting their ability to pronounce and understand. Therefore, a detailed understanding of these differences is essential to help students overcome pronunciation difficulties.

Zhang's (2019) research shows that students who come from language backgrounds without consonant clusters often have difficulty applying sound combinations such as /str/ or /spl/, which do not occur in their native language. On the other hand, Lee and Kuo (2020) argue that it is important to implement more efficient teaching methods to help students overcome these phonological problems. In the past, this problem was only considered a challenge in students' oral communication. Thus, this study aims to develop more suitable teaching methods to improve non-native students' speaking skills through understanding and addressing the challenges.

In English phonology, elements such as pitch, stress, rhythm, and intonation are essential for successful communication. English teachers have a relevant role in supporting students in facing phonological challenges with systematic phonics teaching methods. Many students experience difficulties with English sounds due to the impact of their first language (Safitri et al., 2023). Research shows that regular phonological practice can improve students' ability to recognize and pronounce English sounds correctly (Tiwari, 2024). Teachers can assist by showing examples from native speakers, utilizing audio or video resources, and providing useful feedback.

Teaching consonant clusters poses certain challenges for non-native speakers, often resulting in mispronunciations that can interfere with clarity in communication (Noorzaida, 2023). Despite previous studies highlighting the effectiveness of repetition techniques in improving pronunciation (Umam, 2022), there is still a lack of research focusing on how specific phonological challenges impact non-native learners, particularly Indonesian EFL students. The absence of structured phonetic instruction and phonological awareness among teachers further exacerbates this issue. This study aims to fill this research gap by exploring non-native speakers' difficulties in pronouncing consonant clusters and identifying effective pedagogical strategies to address these challenges. The research is guided by the following questions: (1) What are the common pronunciation difficulties faced by non-native English learners regarding consonant clusters? (2) What teaching strategies can effectively improve students' pronunciation of consonant clusters? Addressing these questions is crucial as it provides insights into the role of phonological instruction in language learning. The findings of this study will contribute to the development of targeted teaching methods, emphasizing phonetic drills and multimedia tools, to enhance students' pronunciation and overall communicative competence. Additionally, this study has pedagogical implications for English language educators, highlighting the importance of integrating phonological approaches into teaching strategies to improve students' accuracy and fluency.

METHOD

This study employed a qualitative descriptive research design to explore phonological challenges related to consonant clusters in English language teaching for non-native speakers. The research framework is based on theories of second language acquisition (SLA) and phonological transfer (Derwing & Munro, 2015; Zhang, 2019), which emphasize how native language influences the pronunciation of a foreign language.

The study involved 20 English teachers from various schools and educational institutions across Indonesia. Participants were selected using purposive sampling to ensure their experience in teaching English pronunciation was relevant to the study's objectives. Of the respondents, 63.6% had less than one year of teaching experience, 31.8% had one to three years of experience, and only 4.5% had four to six years of experience.

The data were collected using an online questionnaire administered through Google Forms. The questionnaire consisted of both closed-ended and open-ended questions designed to capture teachers' experiences, opinions, and methods used to teach consonant clusters. The questions were adapted from previous studies on phonological instruction (Tiwari, 2024; Tsang & Wong, 2019). The survey focused on teachers' experience with phonological instruction, common difficulties students face with consonant clusters, strategies used to teach consonant clusters, and the effectiveness of different instructional approaches. To enhance reliability, a pilot test was conducted with five teachers before full implementation. Feedback was used to refine the questionnaire.

The data collection and data analysis procedures started with the distribution of the questionnaire by sharing the survey link with teachers through email and professional networks. All participants provided informed consent before answering the questionnaire. The responses were collected over two weeks to ensure maximum participation. The collected data were then summarized and analyzed thematically to identify common patterns in teaching strategies and phonological difficulties. Descriptive statistics (percentages, mean scores) were used to quantify key trends in the teachers' responses. Additionally, qualitative responses were coded to extract insights on pedagogical challenges and potential solutions. This methodology ensures that the findings accurately reflect the challenges faced by English teachers in teaching consonant clusters while providing actionable recommendations for improved instructional strategies.

FINDINGS AND DISCUSSION

The structured questionnaire through Google Forms successfully collected data from twenty respondents. The purpose of the respondent profile in this study is to provide examples of sample characteristics present in the study.

Teaching experience in English language education

The survey findings show that most respondents (63.6%) have been teaching English for less than one year. A total of 31.8% had between one and three years of experience, only 4.5% had four to six years, and no respondents had more than six years. This shows that most of the people who responded are new teachers who may still be in the process of adapting to effective teaching approaches.

The qualitative analysis suggests that the teachers' ability to teach complex phonological aspects such as consonant pronunciation and grouping may be significantly affected by their limited teaching experience. Novice teachers, in particular, may struggle with confidence, strategy variation, and error identification, which are essential for effective phonological teaching. On the other hand, the small number of respondents with more than three years of experience suggests that these findings may not reflect the views of more experienced educators. As a result, there may still be limited awareness of next-level teaching methods (see Figure 1).

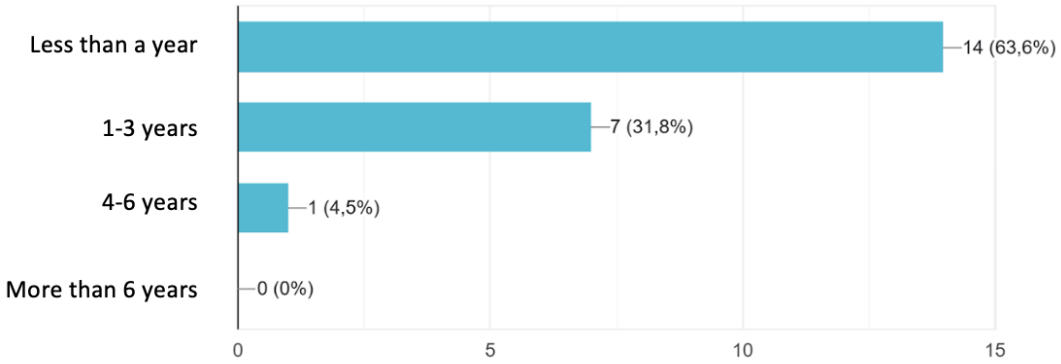


Figure 1. Experience in teaching English

According to research conducted by Tsang and Wong (2019), teaching experience has a significant impact on student learning outcomes. They found that language skills, such as pronunciation and phoneme awareness, tended to be more effectively delivered by teachers with more than three years of experience. This finding is in line with survey results that show that the majority of respondents are teachers who are new to their field. This may indicate that their lack of experience impacts their views on various learning strategies. In addition, Liu (2020) emphasized that professional training is very crucial for new teachers so they can improve the quality of their teaching. With adequate training, novice teachers can overcome the challenges of teaching English, especially in more complex areas such as phonology, according to Liu. Therefore, the findings of this survey indicate that training and guidance programs for novice teachers are essential to improve their teaching quality, especially in dealing with students' phonological problems.

Student age groups taught by respondents

The survey results showed that 81.8 percent of teachers or educators said they mostly taught children, while 45.5 percent also said they often taught adolescents. No respondents specifically stated that they teach adults or all age groups, so the percentage of both categories is 0%. The data shows that the focus of respondents' teaching is on the children's group. This suggests that most respondents have more experience in dealing with early childhood learning. It may be related to curriculum needs or the high demand for children's education in certain situations. However, several teachers also teach adolescents; this suggests that educators can handle more complex ages well. The absence of respondents who teach adults or all age groups may be due to limitations in the scope of their work or specialization in the education system they are in. For educators, this discussion can provide insight into the development of more diverse programs or training (see Figure 2).

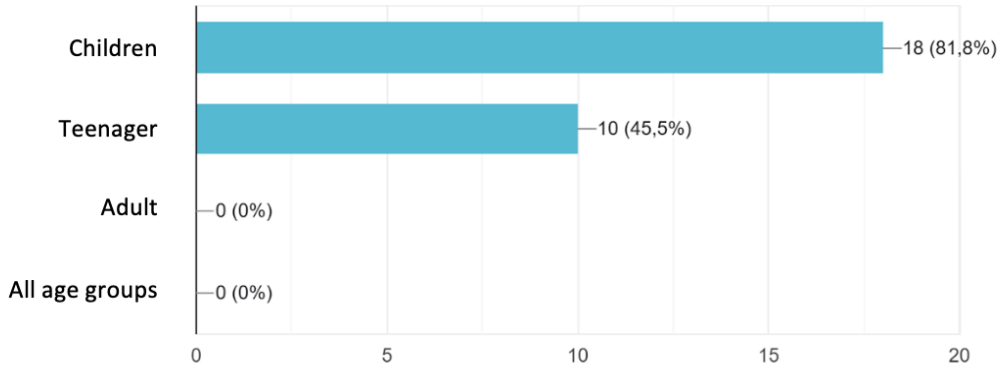


Figure 2. Students' levels taught by participants

According to research conducted by Pianta et al. (2017), early childhood education has a significant influence on children's social and cognitive development since early experiences are essential for shaping future learning abilities. This is in line with the survey results, which show that most respondents have experience teaching children, which can be defined as an effort to meet the urgent educational needs at this level. Additionally, research conducted by McCoy et al. (2017) suggests that, while many educators teach adolescents, having a strong background in early childhood education can help educators deal with a more complex age group. The study found that participation in a high-quality early childhood education program was associated with significant decreases in special education placement and grade repetition as well as increased high school graduation rates. As a result, a strong educational background is beneficial to early childhood education because it not only helps with a child's early development but also equips educators with the skills necessary to support the social and academic development of adolescents. This is in accordance with the article by Kulic et al. (2019), which shows the success of early childhood education and care (ECEC) programs in improving the cognitive and non-cognitive skills of children who face poor environmental conditions in their parents' homes.

Respondents' specialized training in phonology and pronunciation

The survey results show that half of the respondents received specialized training in teaching phonology or pronunciation, while the other half did not. This finding shows that there is a balance between respondents who have specialized training backgrounds and those who do not. The background characteristics of the teachers' competence in phonology and pronunciation are indicated by this finding. 50% of the respondents who received specialized training indicate that some of them have prepared themselves to teach technical elements of language, which are important for improving students' language skills, especially in pronunciation.

In contrast, the other half of the respondents who have not received specialized training may require professional development programs to enhance their ability to teach phonology effectively, as their limited training could impact their instructional competence. This balance also implies that phonology instruction might not always be a primary focus in language teaching, as curriculum structures and learning objectives may place greater emphasis on other linguistic components (see Figure 3).

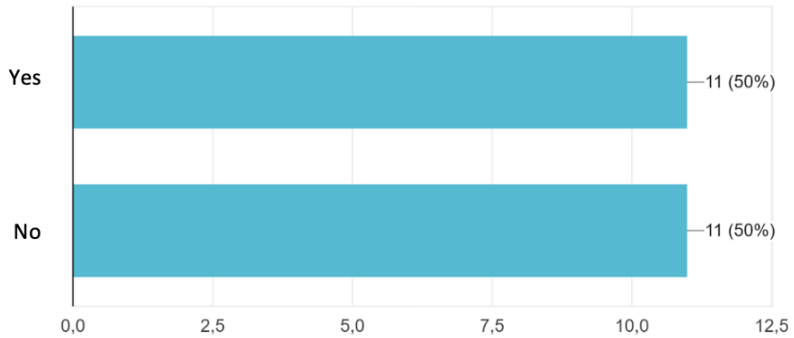


Figure 3. Phonology or pronunciation training background

According to Derwing and Munro (2015), teaching pronunciation correctly can improve students' ability to communicate in a second language. Additionally, they note that teaching phonology through an evidence-based method can yield superior outcomes, particularly if teachers possess a thorough understanding of the technical components of pronunciation. They add that teachers cannot fully comprehend the best methods and strategies for teaching pronunciation if they are not properly trained. Furthermore, the balance results in Figure 3 suggest that some curricula or particular learning objectives may not place a high

focus on teaching phonology. In some circumstances, other language components, such as vocabulary or grammar, could be preferable. In order to provide pupils with a more comprehensive language education, educational institutions should reconsider their curricula and think about delving deeper into the phonological components.

Students' difficulties in pronouncing consonant clusters

From all the respondents, 63.6% of them reported that their students frequently experience difficulty pronouncing consonant clusters such as spr, str, and bl. This suggests that the sound characteristics of the language are a major barrier to their learning. Only 9.1% of participants considered this issue a frequent problem, and 22.7% stated that this problem rarely occurs. Interestingly, 4.5% of participants said that they had never seen such a problem in their class. Pronouncing consonants turns out to be the most difficult part of English pronunciation to teach. To address this issue, teachers may need to use certain approaches or techniques, such as phonetic drills or exercises. The phonological background of the students and their exposure to English sounds is indicated by the relatively low number of respondents who reported "rarely" or "never" (Figure 4).

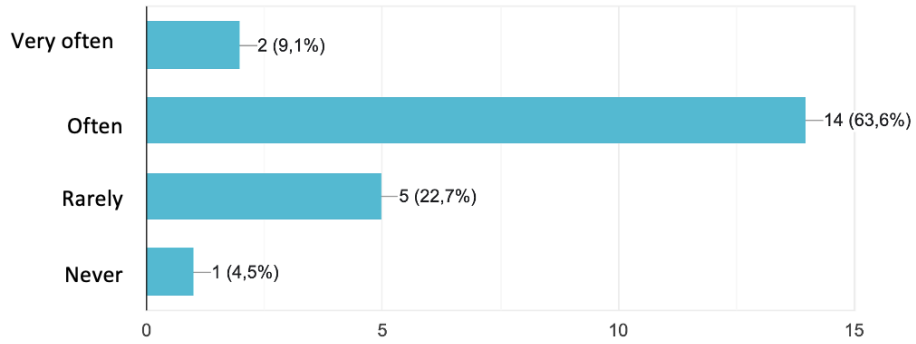


Figure 4. Students' difficulty in pronouncing consonant clusters (e.g. /spr/, /str/, /bl/)

Previous research results are in line with these findings in Figure 4. Fitriyah and Widiati (2021) emphasize that effective language assessment is essential to finding students' problems, including difficulties in pronouncing certain sounds. The survey results showed that many students had difficulties pronouncing consonant clusters. In addition, research conducted by Muñoz and Cadierno (2021) found that the level of exposure to English significantly affected students' ability to understand and produce the language. Because there are no consonant clusters in their learning environment, many students find it difficult to pronounce them, according to the survey's findings. This finding may help to understand why certain students struggle with consonant clusters in their classrooms. Therefore, English teachers should take this into consideration when teaching. Teachers should make appropriate teaching strategies to deal with this issue. Students' pronunciation can also be improved by exposing them to more English through a variety of activities, including viewing movies, listening to sound recordings, and engaging with English-speaking people.

Challenges faced by teachers in teaching consonant clusters

The findings in Figure 5 show that 59.1% of respondents said that teachers most often face problems teaching students the consonant cluster because they are not used to performing the sound pattern. In addition, 54.5% of respondents said that students often insert vowels between consonants, and 40.9% said that students often omit one of the consonant sounds. These findings suggest that the main obstacle was unfamiliarity with consonant clusters, which are less common in some students' native languages. The desire to add vowels may be the result of students' attempts to simplify complex sound patterns to fit into a linguistic territory they

are comfortable with. Similarly, difficulties pronouncing groups as a unit may arise when consonants are omitted. These challenges show how important structured drills and practice are to help students become more confident and accurate when producing consonant clusters, with particular emphasis on phonetic training and auditory discrimination. (see Figure 5).

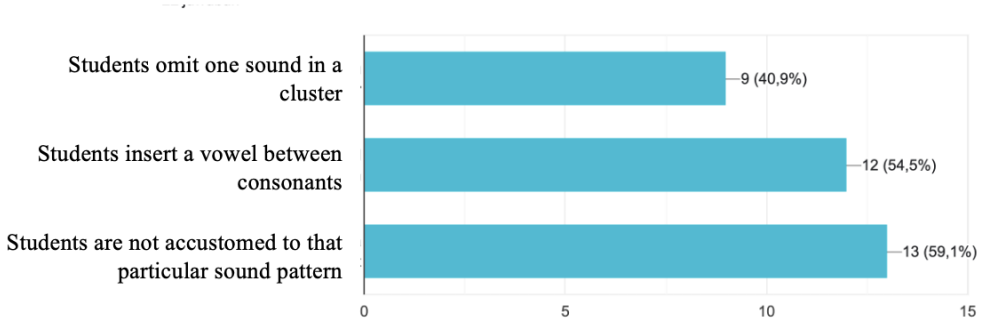


Figure 5. Challenges of teaching consonant clusters to students

Mauludin (2015) found that non-native English teachers have an important role in learning English as a foreign language. Non-native teachers who have also gone through the process of learning English can better understand the problems faced by students when learning English sound patterns, including consonant clusters. Therefore, they can develop a more humanistic and efficient teaching approach to overcome these problems.

Teaching methods for improving consonant clusters pronunciation

The results of the questionnaire on the main method used to understand consonant clusters, answered by twenty respondents, showed that the "drilling" technique repetition of pronunciation and listening is the main approach to understanding "consonant clusters". Most respondents said that to improve their understanding, they rely on listening to correct pronunciation either from native speakers or from audio recordings and repeating it regularly. This method is considered effective as it exercises the speech muscles directly and increases sensitivity to sound patterns in consonant clusters. Some respondents also combined drilling with phonetic, visual, or sound pattern analysis methods to support their learning. As it is considered beneficial for improving speaking skills, drilling remains the top choice. These results show that drilling is a popular method due to its practical nature. It allows students to learn consonant group patterns through repeated practice, which has a direct impact on their pronunciation ability.

Effectiveness of different pronunciation teaching techniques

The findings are consistent with the principles of auditory learning that highlight the importance of repetitive auditory input in the development of language skills. However, the drill-based approach has limitations in accommodating various learning styles. To achieve optimal learning outcomes, it is necessary to consider the integration of audio-based exercises with phonetic and visual approaches, especially for students who need visual representations or deeper conceptual understanding. The implications of these findings are very relevant for the teaching of English pronunciation, especially in the context of teaching vowel groups. They emphasize the importance of having high-quality audio sources and an environment that supports repeated practice. The "drilling" strategy dramatically improves students' speaking abilities, according to several studies. According to Nizza and Athena (2024), students' average scores increased from 52.27 on pre-tests to 70.90 on post-tests after employing the drilling strategy. According to another study, students' pronunciation, vocabulary, and fluency significantly improved when they used YouTube for drilling (Putri, 2022). Furthermore,

research with two drilling cycles showed that mean scores increased from 60.67 to 80.56, with 97% of students reaching the required level (Atmi & Pharhyuna, 2018).

According to the survey involving 20 participants, two teaching methods were considered effective: (1) teaching sound repetition slowly and (2) providing audio and video examples. Among the respondents, 15 people rated these methods as very effective, 4 people rated them as quite effective, and 1 person rated them as less effective. Specifically, for the method of teaching sound repetition slowly, 15 people found it very effective, while the remaining 5 people considered it less effective. The survey results showed that most respondents considered both methods very effective, with practicing sound repetition being slightly better than providing audio and video examples. This may be due to the characteristics of the repetition technique, which allows students to actively practice pronunciation. This helps them remember the sound patterns of vowel groups more easily. According to Zamzami et al.'s (2023) research, poetry is also an example of a tool to strengthen students' memory of sound patterns, making it easier to identify and use a wider group of vowels.

However, it is important to remember that both methods work well with each other. Audio and video examples provide real sound models and help students understand the context of using vowel groups in real communication. In contrast, gradual repetition exercises allow students to correct their pronunciation mistakes, leading to more accurate pronunciation. Based on this information, teachers should combine both approaches in the learning process. Students can achieve better results in learning if they combine active practice and listening to authentic models. In addition, this combination can help them overcome the challenges they face in mastering vocal groups (Figure 6).

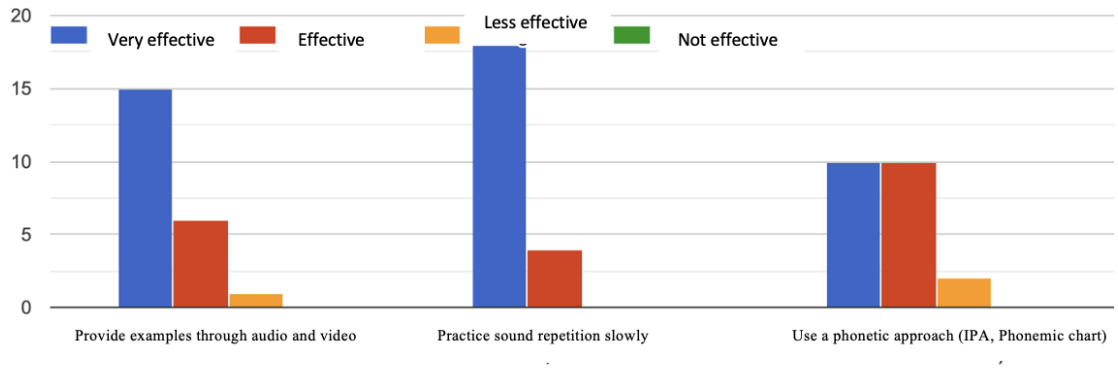


Figure 6. Techniques for overcoming pronunciation problems in consonant clusters

The survey's findings are consistent with other research highlighting efficient techniques for teaching consonant clusters. Practice and drilling are emphasized as crucial tactics, as studies show that ESL learners' pronunciation improves with repeated practice. Furthermore, learners of languages that normally insert vowels between consonants have found that specific instruction on the order of difficulty for consonant clusters is helpful. All things considered, these results demonstrate that practicing voice is more beneficial for learning consonant clusters than only using audio-visual examples (Khanbeiki & Rokni, 2015).

According to the analysis of twenty people surveyed, most of them think that the technique used to understand consonant clusters depends on students' ability to pronounce consonant clusters correctly. When students can imitate the correct pronunciation, either through direct feedback from the teacher or repeated practice, it is the main evidence of success. In addition, success can also be seen from the consistency of students' pronunciation in various situations, such as using new words or answering questions related to "consonant clusters". Some respondents also said that allowing students to practice more often helps achieve this

result. These results indicate that vowel cluster learning is highly dependent on the students' ability to speak correctly.

An outcome-based learning approach focuses on the mastery of practical skills, with assessments of success reflecting that achievement. This method is suitable for pronunciation that focuses on real communication. Although pronunciation is the primary measure, this method can be expanded by adding other evaluation tools, such as listening tests or assessing students' speaking patterns. To obtain a more complete picture of learning success, it is important to combine context-appropriate aspects of phonology and evaluation. Direct feedback from the teacher is very important so that students understand their mistakes and can improve their pronunciation. The result of this evaluation can serve as a guide for educators to focus on teaching activities that involve direct pronunciation practice and provide appropriate support to help students feel more confident in pronouncing consonant clusters.

Previous studies have highlighted the link between pronunciation ability and vowel cluster learning among learners of English as a second language. Al-Abdullah and Almutairi (2024) showed that Kuwaiti students often use vowel epenthesis when dealing with consonant clusters in English, indicating the influence of the phonological rules of their native language. Similarly, research by Zhang (2019) found that learners from language backgrounds without consonant clusters tend to insert vowels or simplify pronunciation, leading to deviations from native-like pronunciation patterns. Furthermore, a study by Lee and Kuo (2020) emphasizes the need for targeted teaching strategies to address these pronunciation challenges, particularly through phonetic training and increased exposure to authentic spoken English.

Among the twenty participants who provided answers regarding suggestions for other educators facing difficulties with consonant clusters, the majority recommended that educators adopt teaching methods that suit students' needs in dealing with vowel clusters. Considering that each individual has a different learning style, several participants emphasized the importance of understanding the most effective ways of learning for each student. In addition, they suggest that teachers recognize the specific problems students face so they can provide appropriate assistance. To support students optimally, the participants also emphasized the importance of creating teaching approaches that are adaptive and can meet various existing needs.

These results indicate that group vocal teaching techniques cannot be applied equally to all students. Instead, this approach must be tailored to each student's unique needs. This method reflects the principle of differential learning, which emphasizes the importance of understanding students' individual characteristics to determine the most appropriate teaching strategies. By recognizing the problems students face, teachers can design relevant materials, choose appropriate methods, and provide more focused guidance.

In addition, educators need to have the ability to adapt in teaching students. To help students understand the material, teachers are encouraged to utilize various techniques, such as interactive tools as well as visual and audio media. Not only can this approach increase students' confidence in communicating, but it can also help them deal with difficulties related to consonant groups. By implementing these strategies, educators can better overcome the challenges of teaching group vocals and create learning experiences that are more inclusive and appropriate to students' needs. In addition, this step also encourages educators to continuously evaluate and adapt their teaching methods to suit the diverse dynamics in the classroom.

Studies suggest that vocal group teaching approaches cannot be applied across the board and must be adapted to each student's unique needs. For example, Clanton Harpine (2013) found that vowel grouping significantly improved reading skills for at-risk students while emphasizing the need for approaches tailored to varying student characteristics. Research on EFL learners also shows that the phonological structure of the mother tongue influences their

pronunciation and learning strategies, which further strengthens the importance of using context-relevant teaching methods (Al-Abdullah & Almutairi, 2024).

Data from the questionnaire indicated a need to develop resources and training programs to enable teachers to overcome the challenges of teaching voice clusters. Most respondents suggested the need for specific training in pronunciation as well as the application of interactive methods to support teachers in dealing with this issue. They also emphasized the essence of training designed to deepen teachers' understanding of sound pronunciation. In addition, interactive resources such as digital applications, audio-based phonics guides, online training modules, and video demonstrations are considered very useful for improving students' understanding and teachers' teaching skills. This training can also help teachers adapt their teaching methods to suit the needs of diverse students.

The results of this study indicated that pronunciation training that uses technology in depth can be an effective solution to overcome the pedagogical problems associated with teaching consonant groups. With a focus on phonetic elements and physical demonstrations, this program gives teachers a deeper understanding of how language sounds are produced. The use of interactive technology in this training not only increases student participation but also supports more personalized and detailed feedback. The combination of live training and digital resources has proven to be relevant to meet various needs in the learning process.

Recent studies consistently show that the application of technology in pronunciation training for teachers, especially related to the teaching of cluster consonants, has a great influence on improving pedagogical skills. Mobile applications such as ELSA Speak, for example, have proven powerful in supporting independent learning and providing immediate feedback, allowing teachers to improve their pronunciation skills. These findings are in line with previous research results that emphasize the potential of technology in improving the quality of language teaching (Miladiyenti et al., 2022). In addition, various studies highlight that the use of automatic speech recognition and artificial intelligence plays an important role in supporting pronunciation learning (Vančová, 2021).

CONCLUSION

This research shows that students who are not native English speakers, especially those from Indonesia, face significant difficulties pronouncing consonant clusters. This problem is mainly caused by differences in the sound system between their mother tongue and English, which often results in phenomena such as the addition of vowels or the deletion of consonants. From the survey taken by 20 English teachers, it was revealed that many of them had limited experience in teaching aspects of phonology, and only half of them had had special training in this area. These results indicate the need for more appropriate and efficient teaching methods. Methods such as using audio or video recordings and repeating pronunciations at a slow speed have proven effective in the learning process. Among these various techniques, sound repetition is recognized as the most successful because it involves direct practice. This research recommends the use of technology to improve the quality of teaching and emphasizes the importance of approaches that suit student needs. Therefore, adaptive and flexible teaching regarding consonant clusters is very important to improve students' pronunciation and communication skills in English.

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