Phonological Articulation Disorder Analysis in Elementary School Students: A Case Study Focusing on Impaired Communication

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ABSTRACT

Phonological articulation disorders may limit children's ability to communicate clearly, especially during learning activities at school. This study was conducted to describe the articulation difficulties experienced by a fourth-grade elementary school student and to understand their impact on speech clarity. This research used a descriptive qualitative method with a case study approach. The data were obtained through direct observation, video recording, and interviews with the classroom teacher. The results showed that the student experienced recurring errors in pronouncing several speech sounds. The most noticeable errors appeared in the omission of certain consonants, particularly /r/ and /k/. These omissions affected word pronunciation, changed the intended meaning, and sometimes made the student's speech difficult to understand. The study also found that articulation problems may be related to several aspects, such as biological factors, the child's age, and the quality of interaction in the surrounding environment. These findings show that articulation disorders need to be identified as early as possible so that appropriate support can be provided. Teacher involvement, family support, and a communicative learning environment are important in helping students improve their language ability and reduce communication difficulties in daily interactions

Introduction

Language acquisition is an important part of child development because it helps children express ideas, understand messages, and interact with other people. One important part of language acquisition is phonology, which deals with speech sounds and how children learn to use them in words. In real development, children do not always acquire speech sounds in the same way or at the same speed. Some children can pronounce certain sounds earlier, while others need more time to produce them clearly (Sum, 2022).

Phonology is closely related to articulation because children need to produce speech sounds clearly when they speak. Articulation problems usually appear in the production of individual sounds, while phonological problems are related to repeated sound patterns, such as omitting or replacing sounds. When these sound patterns continue beyond the expected age, they can be considered part of a phonological disorder. This condition may affect how clearly a child's speech can be understood by others (Lühring, 2021).

Phonological articulation problems are also found in elementary school students. In classroom communication, unclear pronunciation can make it difficult for students to answer questions, read aloud, or talk with teachers and friends. A recent study on early-grade elementary students showed that pronunciation errors may appear in the form of substitution, distortion, and sound omission. These errors can occur when students read phonemes, words, phrases, and sentences (Muthmainnah, 2025).

One common sign of phonological difficulty is the child's tendency to change or remove certain sounds. For example, some children may replace /k/ with /t/, change /r/ into /l/, or have difficulty pronouncing specific sounds. These errors can change the meaning of words and make communication less clear. Such problems may be related to limited phonological memory, lack of verbal stimulation, or possible difficulties in coordinating speech organs (F. T. Maulida, 2025).

Biological factors can also influence children's speech development. Speech production requires coordination between the jaw, lips, and tongue. When speech motor control is still developing or does not

work well, children may show error patterns such as final consonant deletion, cluster reduction, stopping, or gliding. This means that articulation problems are not only related to language knowledge, but also to the physical and motor ability needed to produce sounds (Aravind. Namasivayam, 2025).

Besides biological factors, the environment also has an important role in phonological development. Children need enough verbal input, response, and interaction from people around them. A rich language environment can help children hear different words, practice speech sounds, and build better phonological awareness. When children receive limited verbal stimulation, their language and sound development may be slower (Cychosz, 2021).

Based on these conditions, early identification of phonological articulation disorders is important, especially at the elementary school level. If the problem is not recognized early, the child may face difficulties in learning activities and social interaction. This study aims to analyze the phonological articulation disorder experienced by an elementary school student, with a focus on how the disorder affects daily communication. This study uses a descriptive qualitative approach through direct observation, video documentation, and teacher interviews to identify the student's articulation error patterns and the factors that may influence them (Harding, 2024).

Theoretical Review

Language acquisition in children is a gradual process that involves listening, understanding, remembering, and producing language. In phonological development, children learn how speech sounds work in their language and how these sounds are used to form meaningful words. This process is not only about copying sounds from adults, but also about building sound knowledge, storing it in memory, and using it when speaking. Because of this, phonological acquisition becomes an important foundation for children's communication development (Siemons-Lühring & Harald A., 2021).

Phonological development is closely connected to articulation. Children need to recognize speech sounds and also learn how to move their speech organs, such as the lips, tongue, and jaw, to produce those sounds correctly. When children are still developing, they may not yet have full control of their articulatory movements. This condition can make some sounds difficult to pronounce clearly, especially sounds that require more precise tongue or mouth movement (Syahwaliana, 2026b).

Phonological articulation disorder refers to a condition when children have difficulty producing certain speech sounds or sound patterns. The problem may appear in the form of sound substitution, sound omission, word shortening, or unclear pronunciation. For example, a child may change /k/ into /t/ or /r/ into /l/. These errors can make the child's speech difficult to understand and may disturb daily communication with teachers, friends, or family members (F. Maulida, 2025).

The impact of speech sound disorder is not only seen from how many sounds are pronounced incorrectly, but also from how much the disorder affects communication. A child with unclear speech may experience communication breakdown because listeners need more effort to understand the message. In school, this condition can make the child less confident when answering questions, reading aloud, or joining classroom discussions. For this reason, speech clarity and communication participation should be considered when discussing phonological articulation problems (Doornik, 2025).

The social environment also has an important role in children's language and phonological development. Children need verbal input, response, and interaction from adults around them. When parents, teachers, or peers often invite children to talk, children get more chances to hear words, practice sounds, and correct their pronunciation naturally. A supportive language environment can help children develop better speech and language skills, while limited interaction may slow down this process (Witteloostuijn, 2025).

Phonological awareness is another important part of phonological development. It refers to children's ability to recognize and think about sounds in spoken words. This skill helps children understand that words are made up of smaller sound units. Good phonological awareness can support children's reading and writing development because they learn the relationship between sounds and letters. Children with speech sound difficulties may need more support to develop this skill so that their language and literacy development can improve (Farag, 2024).

Based on the theories and previous studies, phonological acquisition in children is influenced by both internal and external factors. Internal factors include speech motor ability, memory, and the child's readiness to produce sounds, while external factors include family support, school environment, and the amount of language stimulation received by the child. Early identification is important because phonological articulation problems can affect communication, learning, and social interaction. Therefore, teachers and

parents need to provide a supportive environment so that children can practice speaking more confidently and improve their language ability (Nag et al., 2024).

Research Method

This study used a descriptive qualitative approach with a case study design. This approach was chosen because the research focused on one student who experienced phonological articulation difficulties in real classroom communication. Through this design, the researcher could describe the student's speech problems in detail based on natural interaction, not only from test results. A qualitative descriptive case study is suitable for examining children's communication problems because it allows data to be collected through observation, interviews, and documentation in the child's learning environment (Fitri et al., 2025).

The subject of this study was one fourth-grade elementary school student in Indonesia who had difficulty communicating verbally. The student's real name was not used in this research and was replaced with the initial "S" to protect the student's identity. The student was around nine years old and showed problems in pronouncing several Indonesian phonemes, especially certain consonants and vowels. A study on children's speech problems also shows that articulation disorders can appear through unclear phoneme production and the omission of certain sounds (Syahwaliana, 2026a).

The data were collected through direct observation, teacher interviews, and video documentation. Direct observation was used to see how the student spoke during classroom activities and daily interaction with friends. The teacher interview was used to obtain additional information about the student's language development, learning behavior, and communication difficulties in class. Video documentation helped the researcher replay the student's speech and identify articulation errors more carefully. Observation and interviews are often used in qualitative studies on speech problems because they help researchers understand the participant's real communication behavior (Fadhly & Rahmatunisa, 2021).

The research procedure was conducted in several steps. First, the researcher observed the student's verbal interaction during learning activities and informal communication. Second, the researcher recorded selected speech situations using audio and video tools. Third, the researcher interviewed the classroom teacher to gain information about the student's speaking habits and learning process. After that, the recorded data were transcribed into written form so that the student's pronunciation could be examined more clearly. Transcription is important in qualitative analysis because it helps researchers become familiar with the data before coding and interpretation (Naeem & Howell, 2023).

The data analysis used thematic analysis. In this study, the researcher read the transcription several times, marked words that showed articulation errors, grouped similar errors, and then interpreted the patterns. The main focus of the analysis was the types of phonological articulation errors, such as sound omission, sound substitution, and unclear pronunciation. The researcher also compared the student's pronunciation with the standard phonological form of Indonesian words to understand how the errors affected speech clarity. Thematic analysis is useful in qualitative research because it helps researchers identify and interpret repeated patterns in the data (Ahmed & Mohammed, 2025).

To make the findings more credible, this study used triangulation. The researcher compared the data from observation, teacher interview, and video documentation. This step was done to see whether the same articulation problems appeared in different data sources. If the same error patterns were found in classroom observation, teacher explanation, and video recording, the data were considered more consistent. Triangulation is important in case study research because it helps strengthen the trustworthiness of findings by using more than one source of data (Schlunegger & Shaha, 2024).

Video documentation was used carefully because the research involved a child participant. The video was only used for research needs, especially to check the student's pronunciation and communication behavior. The recording was not shared publicly, and the student's identity was kept confidential. In qualitative research, video recording can provide detailed information about interaction, but it must be used with attention to ethical protection and participant privacy (Karlsen, 2025).

This study also followed ethical principles in educational research. Before collecting data, permission was obtained from the school and the student's parents. The teacher was informed about the purpose of the study, and the student's privacy was protected throughout the research process. The researcher did not mention the real name of the student, teacher, or school in the report. Research involving children in school settings must protect children from harm, respect their participation, and keep their personal information confidential (Robinson, 2025).

Observation Results

The observation was conducted in two cycles. During the observation, S often spoke in a very low voice and needed more time before answering questions. Some words were pronounced incompletely, especially words containing consonants such as /r/ and /k/. For example, the word "bermain" was heard as "bemain" because the sound /r/ was omitted. The word "pakai" was also sometimes pronounced unclearly because the /k/ sound was not produced strongly. This condition shows that S's speech development did not fully follow the expected speech pattern for his age (To et al., 2022).

Table 1. Comparison of Expected and Produced Phonemes by the Subject

Expected Word	Expected Phonemes	Student's Production	Type of Error
Ayam	/a/, /y/, /a/, /m/	"a...yam" / very soft	Weak initial production and low voice
Pakai	/p/, /a/, /k/, /a/, /i/	"pa...i"	Omission of /k/
Motor	/m/, /o/, /t/, /o/, /r/	"motol"	Substitution of /r/ into /l/
Bedak	/b/, /e/, /d/, /a/, /k/	"dak"	Omission of initial syllable /be-/

Table 1 shows that S's articulation errors mostly appeared in the form of sound omission and sound substitution. The omission of /k/ in "pakai" and the omission of the first syllable in "bedak" made the words less complete. In the word "motor," the error is better understood as substitution because the /r/ sound changed into /l/, not completely disappeared. These patterns are related to phonological error patterns because the child simplifies or changes sounds that are difficult to produce (A. K. Namasivayam & Li-Han, 2025).

Conversation 1

Researcher **:** "S, makanan kesukaan kamu apa?"
S **:** "Pa... pa... ayam."
Researcher **:** "Ayam goreng atau ayam bakar?"
S **:** "Ayam... goreng."
Researcher **:** "Siapa yang masak ayam goreng itu?"
S **:** "Bubu."

In the first conversation, S showed hesitation before answering. The word "ayam" could finally be produced, but it was spoken softly and slowly. The word "goreng" also sounded unclear because the final sound was not produced strongly. This shows that the problem was not only about one sound, but also about how S organized and produced the sounds in connected speech. Children with speech sound disorders may have difficulty when speech production and phonological processing must work together during communication (Roepke, 2024).

Conversation 2

Researcher **:** "S, biasanya kamu diantar ke sekolah sama siapa?"
S **:** "Bapa."
Researcher **:** "Setiap hari, ya?"
S **:** "Iya, bapak bawa motor."
Researcher **:** "Motor apa yang bapak pakai?"
S **:** "Motol... motor besar."

In the second conversation, the word "motor" was first pronounced as "motol." This indicates a substitution error because the /r/ sound was replaced by /l/. S also repeated the word again as "motor," but the pronunciation was still soft. This means that S might already know the target word, but still had difficulty producing it clearly. Similar articulation errors in children can appear as substitution, omission, distortion, or addition, and these errors may affect the clarity of spoken words (Nurjanah & Indriyani, 2024).

Based on the observation and interview results, S showed phonological articulation difficulties that affected several consonant sounds. The most visible errors were omission and substitution. These errors made some words sound different from the expected form and caused listeners to need more effort to understand the message. This condition is in line with the idea that speech sound disorders may involve both speech production problems and phonological pattern problems (Siemons-Lühring & Harald A., 2021).

The soft voice produced by S also became an important finding. In this study, the low voice was not directly diagnosed as a medical problem, but it was observed as part of S's communication difficulty. When S spoke too softly, the listener could not hear the sounds clearly, so the articulation errors became more difficult to understand. Speech accuracy is important because unclear sound production can affect how well a child's speech is understood in daily communication (Andriyani et al., 2026).

These findings show that S needs support from both the classroom and home environment. The support can be given through simple speaking practice, repetition of difficult words, teacher modeling, and positive feedback when S tries to speak more clearly. The teacher should not force S to speak loudly in a way that makes him uncomfortable, but can guide him slowly through communicative activities. Speech intervention for children can be supported through small-group activities, individual exercises, and consistent practice in learning situations (Machmud & Abidin, 2023).

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