

## Utilizing the International Phonetic Alphabet to Improve Pronunciation of English Education Students

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***Abstract.** This paper aimed to discover the effects of the International Phonetic Alphabet (IPA) symbols, consisting of 44 sounds, on pronunciation, the challenges that the English education students face in learning phonetic symbols and the causes of such challenges and students' steps to improve their pronunciation. The data of this survey study were collected using Google Forms containing an eight-item questionnaire and involved 23 English education students of Sanata Dharma University, Yogyakarta. The results showed the IPA had effects and played an important role in learning phonetics to improve pronunciation, some consonant, vowel and diphthong sounds, such as /θ/, /dʒ/, /ð/, /ɜː/, and /əʊ/, were challenging to pronounce and the causes included rarely paying attention to the IPA and lacking IPA knowledge. To conclude, it is feasible for the students to learn the IPA to improve their English pronunciation.*

**Key words:** *english education, ipa, phonetic symbol, pronunciation*

### A. INTRODUCTION

Since English is one of the essential things for this era, it certainly makes people adjust to learning that language properly. In Indonesia, English is learned and used as the second language through digital and physical media platforms. English is essential because it is one of the requirements for self-improvement in professional work. In addition, Rini (2014) states that English is regarded as necessary because people can have a higher salary and have better opportunities by mastering English. For this reason, this makes many universities in Indonesia

compete with each other to open the English department or study program to train and shape students to master the English language well.

According to Janu (2020), speaking (in English) is a skill that can effectively show how well a learner performs his or her second language learning. For sure, students who want to improve their English speaking skills must have proper pronunciation. Gilakjani (2016) states that understandable pronunciation is one of the basic requirements of learners' competence, and it is also one of the most important features of language instruction. Moreover, Varasarin (2007) states that pronunciation is crucial for learning oral skills in a second language. Therefore, by having excellent pronunciation or correct sound of the English words, others can understand our thoughts, ideas, and so on (ASC English, 2020). However, like a building, students have to set up a foundation that can help them understand the material they want to achieve. In this case, when students want to produce the correct sounds of English words, they have to learn the International Phonetics Alphabet (IPA).

Szcześniak and Porzuczek (2019) state that apart from learning to use the International Phonetics Alphabet to transcribe the sounds of English, students will also benefit by improving their pronunciation. In other words, students have to learn and must be able to use the IPA to produce proper pronunciation. Moreover, students cannot improve their pronunciation if there is no awareness of this necessity. In this respect, it is in line with the researchers' finding that several PBI students still face obstacles or problems, such as forgetting how to use several symbols, lack of motivation, lack of knowledge, and seem to underestimate the IPA, for example.

Thus, by realizing those problems and obstacles, the researchers arrange this study which aims to understand and analyze the factors that probably bring out the difficulties of the English education students in pronouncing the English words.

Several questions will be discussed, such as what kind of the IPA types (the consonants, vowels, and diphthongs) make the students hard to produce, then they will explain the reasons why they feel difficulty in those parts, as well as their plans for the future to be able to pronounce all the IPA correctly to improve their pronunciation.

Therefore, hopefully, the results of this research will help the students to acquire the knowledge and make them realize the importance of learning the International Phonetics Alphabet (IPA) to improve their pronunciation. Moreover, it can be beneficial and sustainable information for educators to precisely teach the students pronunciation.

### ***The Importance of Learning Pronunciation***

Yates (2014) states that ‘Pronunciation’ is a lay term widely used in language learning and teaching to describe how utterances are articulated. As Indonesian students who want to acquire English as a second language, it is a must that we have to learn the pronunciation properly so that we can understand how the English word is pronounced. Based on the importance of pronunciation, Burns (2003), it is more critical than speakers of English can achieve intelligibility (the speaker produces sound patterns that are recognizable as English), comprehensibility (the listener can understand the meaning of what is said), and interpretability (the listener can understand the purpose of what is said). Moreover, expressing our opinions and accepting the ideas of other English speakers clearly can increase our confidence (Emma, 2016). On the other hand, because pronunciation is an essential part of communication, it can raise wrong impressions and misunderstandings with others, even foreigners, if we mispronounce the English word (Astuti, n.d.).

Since pronunciation has a lot to do with speaking and communication, this becomes a severe matter for English students because they will encounter English

daily conversation with lecturers and peers. Therefore, pronunciation is very influential for the success of speaking. The communication is carried out so that the English students will truly understand what is happening in the classroom through all the conversations. Maslow (2020) claims that many scholars have suggested and strongly recommend that students of language and communication studies learn the phonetic alphabet, the different symbols and code words that represent each letter and speech sound of the English alphabet, and those of the International Phonetics Alphabet. In this respect, by learning the International Phonetics Alphabet (IPA), students can understand how their speech organs, such as vocal cords, tongue, and lips, contribute to producing different sounds (Julian, 2020). Moreover, IPA can also help the students improve and develop their pronunciation. Setiyono (2019) mentions that teaching pronunciation using the IPA phonemic transcript can help learners memorize the correct pronunciation.

### ***International Phonetic Alphabet (IPA)***

Brown (2012) stated that the International Phonetic Alphabet (IPA) is a set of symbols designed to represent speech sounds of languages of the world. Britannica insists that Otto Jespersen is the first person who set out the concept of IPA that was sent in the form of a letter to Paul Passy of the International Phonetics Association and, after that, A. J. Ellis, Henry Sweet, Daniel Jones, and Passy continued this project in the late 19th century. Creating the IPA concept intends to make people avoid the mistake or confusion caused by the uncertain conventional spellings used in every language by making a standard of the spoken language. Moreover, this concept aims to substitute the individual transcription system. In 1888, the International Phonetics Alphabet was launched for the first time, and in the 20th and 21st centuries, there were several improvements for making the IPA more perfect (Britannica, n.d.). The IPA consists of 44 symbols divided into three types, namely consonant, diphthong, and vowel sounds. Each type has different characteristics which play a role in producing the word sounds.

### ***Consonant Sounds***

According to the Cambridge Dictionary, “consonants are pronounced by stopping the air from flowing easily through the mouth, especially by closing the lips or touching the teeth with the tongue”. There are 24 symbols of consonant sounds in the IPA, which are divided into two types: voiced and voiceless pair consonants, and voiced consonants.

Harding (n.d.) states that a consonant pair is when the mouth position is required to make two sounds the same, but one sound is voiceless, and one sound is voiced. Harding (n.d.) also mentions if there is no vibration from the voice box when we pronounce the consonant such as /s/, /p/, and /t/, those consonants are called voiceless consonants, but if there is vibration from the voice box when we pronounce some consonants such as /g/, /b/, and /v/, those are called voiced consonants.

Below is the table that shows the voiceless and voiced consonant pairs. The consonant on the top is the voiceless consonant, and the bottom is its pair, the voiced consonant. Introduction title should be written in capital letter, 1.5 space and in bold. Introduction section should contain background of the problem, related theories, previous research (if any), hypothesis (if any), and objective of the research. Introduction refers to references, which become the underlying theories in conducting the research. (Times New Roman, 12pt, 1.5 space).

The manuscript derived from the result of the research and written in English will be prioritized. The manuscript(s), which discusses the possible development of theories or suggested ideas in English language, is considered to be accepted in this journal.

Table 1. Voiceless and Voiced Consonant Sounds

Consonants	/p/	/t/	/s/	/ʃ/	/tʃ/	/θ/	/k/	/f/
Word	put	tip	sue	shin	choke	thin	came	fine
IPA	/pʊt/	/tɪp/	/su:/	/ʃɪn/	/tʃəʊk/	/θɪn/	/keɪm/	/faɪn/
Consonants	/b/	/d/	/z/	/ʒ/	/dʒ/	/ð/	/g/	/v/
Word	bag	dip	zoo	vision	joke	then	game	vine
IPA	/bæg/	/dɪp/	/zu:/	/ˈvɪʒn/	/dʒəʊk/	/ðen/	/geɪm/	/vaɪn/

For the voiced consonants, it usually is called the nasal sound. Harding (n.d.) also says, “the consonant IPA symbols /m/, /n/ and /ŋ/ are all called nasal sounds because when we make them, the air passes through our nose, not out of the mouth. As we go through these sounds, we can check our /m/ and /n/ at the ends of words”.

Table 2. Nasal Sounds

Consonant	/r/	/j/	/w/	/h/	/n/	/m/	/l/	/ŋ/
Word	rush	you	we	how	now	man	leg	tongue
IPA	/rʌʃ/	/ju/	/wi/	/haʊ/	/naʊ/	/mæn/	/leg/	/tʌŋ/

### ***Vowel Sounds***

According to the Cambridge Dictionary, “vowels are a speech sound produced by humans when the breath flows out through the mouth without being blocked by the teeth, tongue, or lips.” Vowel sounds can be divided into two sorts as follows: Short vowels are vowel sounds pronounced in a short form. Seven IPA symbols include short vowels. The IPA for English short vowels are: /ɪ/, /e/, /æ/, /ʌ/, /ʊ/, /ɒ/, and /ə/.

Table 3. Short Vowel Sounds

Vowel	/ɪ/	/e/	/æ/	/ɒ/	/ʌ/	/ʊ/	/ə/
Word	hit	let	back	hot	cut	put	apart
IPA	/hɪt/	/let/	/bæk/	/hɒt/	/kʌt/	/pʊt/	/ə'pa:t/

Long vowels are vowel sounds pronounced longer than other vowels. There are five IPA symbols for English long vowels. The IPA for English long vowel sounds are: /i:/, /ɑ:/, /ɔ:/, /ɜ:/, and /u:/.

Table 4. Long Vowel Sounds

Vowel	/i:/	/ɑ:/	/u:/	/ɔ:/	/ɜ:/
Word	heat	start	suit	caught	hurt
IPA	/hi:t/	/sta:t/	/su:t/	/kɔ:t/	/hɜ:t/

### ***Diphthong Sounds***

Based on the Cambridge Dictionary, diphthongs are vowel sounds in which the tongue changes position to produce the sound of two vowels.

Table 5. Diphthong Sound

Diphthong	/aɪ/	/eɪ/	/əʊ/	/aʊ/	/eə/	/ɪə/	/ɔɪ/	/ʊə/
Word	cry	lay	go	how	pair	near	boy	sure
IPA	/kraɪ/	/leɪ/	/gəʊ/	/haʊ/	/peə(r)/	/nɪə(r)/	/bɔɪ/	/ʃʊə(r)/

In other words, diphthong vowels are two short vowels joined together, and they are also called double vowels. Ramelan (as cited in Suryatiningsih, 2015) notes that diphthong is divided into falling diphthong and raising diphthong. Suryatiningsih (2015) writes, “A diphthong in which the first element is louder than the second element is called a falling diphthong, and a diphthong in which the second element is syllabic is called a rising diphthong”.

## **B. RESEARCH METHOD**

The research method of this study was qualitative research. Qualitative research is used to discover direct perceptions of the topics discussed. This method concerns not only "what" people think but also "why" they think that way. Therefore, the qualitative research method allows further investigation by questioning participants in-depth and extensively. The qualitative data collection method focuses more on information that emphasizes insight and understanding of the reasons related to the participants' responses. This method was exploratory and digs deeper into the issues discussed (Question Pro, n.d.). The most common techniques used for qualitative data collection are individual interviews, qualitative surveys (paper surveys, online surveys), focus group discussions, and observation (Question Pro, n.d.). In this instrument, researchers use qualitative survey techniques through questionnaires by asking more open-ended questions to collect textual data so that participants can provide answers according to their personal experiences and views on the topics discussed.

The data sources that the researchers took were from participants who were English education students at Sanata Dharma University Yogyakarta. The total number of participants was 23 students from batch 2018, 2019, and 2020. The questionnaire, which was distributed using Google Forms, consisted of 8 questions in English which questioned what obstacles were faced by participants when studying IPA, why these problems could occur, and how the participants made efforts when trying to overcome these obstacles.

Several steps must be taken in carrying out the research. Ary, Jacobs, Sorensen (2010) present six steps that start by selecting problems. The problem in this research is how learning IPA can improve pronunciation for PBI students. The second step is reviewing the literature on the topics discussed (Ary, et al., 2010). Researchers use relevant literature to gain more understanding and insight into



problems as capital to determine research and formulate problems. The third step is designing research which in its implementation includes what methods are used, what data is collected, where, how, and from whom (Ary, et al., 2010). In this step, the researchers made a series of questions about the problem to present open-ended questions as described in the previous section with the following details:

- 1) Have you learned the IPA? (In this section, the researchers provide a table image containing all the phonetic symbols of IPA)
- 2) What kind of IPA types do you find difficult to pronounce correctly? \*The participants can choose more than 1 type
- 3) If you choose the consonant/diphthong/vowel, what is/are your obstacle(s) in pronouncing those sounds?
- 4) What kind of consonant/diphthong/vowel that you feel is difficult to pronounce? (In this section, the researchers provide all the phonetic symbols from IPA so the participants can choose directly)
- 5) By understanding your weaknesses in pronouncing those sounds, in your opinion, what makes you face those obstacles?
- 6) What have you done so far to face those obstacles?
- 7) What are your plans for the future to be able to pronounce all the IPA correctly?
- 8) In your opinion, is the IPA helpful in improving pronunciation skills as the PBI students? State your reason if you answer yes or no.

The fourth step was data collection (Ary, et al., 2010) which was carried out by distributing questionnaires online with a span of 14 days, starting on May 4, 2021, to May 18, 2021. The fifth step was analyzing the data (Ary, et al., 2010). The data that the researchers received was in the form of words. Then, from that data, the researchers processed the data without eliminating the participants' experiences, opinions, or original views. The sixth step was to conclude by

interpreting the findings concerning the research problem in a narrative form (Ary, et al., 2010).

### **C. FINDINGS AND DISCUSSION**

In this section, the researchers show presented the findings and discussed the survey results based on the questionnaires. In the survey, 23 English Education students participated. The findings and discussion in this study were divided into three sections: the effects of the IPA for the students' pronunciation skills, the difficulties and the factors that the students faced in learning the IPA, and the plans that the students would take to improve their pronunciation skills.

#### ***The Effects of the IPA on the Students' Pronunciation Skills***

The survey results showed that 22 of 23 participants (95.7%) already learned the International Phonetic Alphabet (IPA). It seemed that students already recognized the IPA symbols in their class and knew how to pronounce them, even though there were some mistakes in practice. Besides, the results also showed that 100% of participants agreed that the IPA could improve their pronunciation skills in the process of English learning. Furthermore, they gave their reason about it below.

Fifteen of 23 participants felt that the IPA helped the students to pronounce the word correctly. Riza and Kawakib (2021) stated that Phonetic transcription based on the IPA precisely shows how the word should be produced and pronounced in the correct pronunciation.

Eight of 23 participants felt that the IPA was the basis or foundation to know the sound of the words so that it directly affected their English pronunciation skills. This result was similar to the statement stated by The London School of English (2017), which said that the IPA was a system where each symbol was associated with a particular English sound.

### *The Difficulties and Factors that the Students Face*

Since the IPA affected their pronunciation skills, the students then realized that they must be able to identify and pronounce the IPA symbols if they wanted to have a proper pronunciation. However, it does not mean that they did not face obstacles. Based on the results in Figure 1, 12 of 23 participants (52.5%) faced difficulty pronouncing the consonant sounds, seven (30.4%) the vowel sounds, and 13 (56.5%) the diphthong sounds.

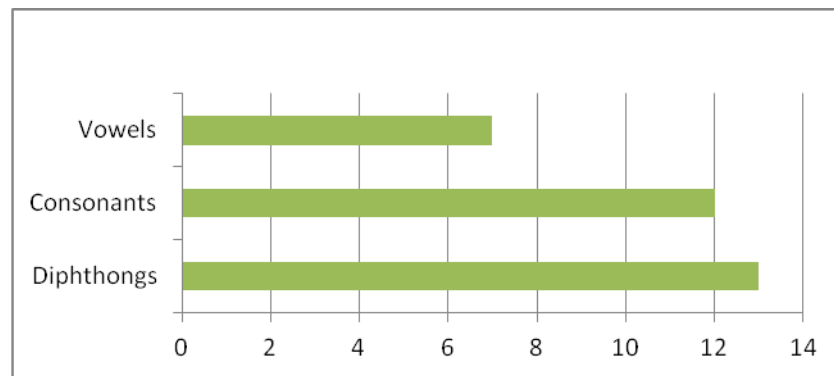


Figure 1. Challenging Sounds to Pronounce

Regarding challenging consonant sounds, Figure 2 showed that the research participants faced two major obstacles, namely confusion and forgetting how to pronounce consonant phonetic symbols. In this case, the researchers received 14 responses, but they did not match the number of participants who chose the consonants, only 12 participants. In addition, two responses did not correspond with the questions being asked.

Nine of 12 participants had difficulty pronouncing some consonant sounds and felt confused when they wanted to pronounce them. They reasoned that some consonant sounds looked unfamiliar compared to consonant sounds in Indonesian. They could hardly distinguish similar sounds, such as /θ/ and /ð/, and /t/ and /d/. The participants were also confused about voiceless/unvoiced and voiced

consonant sounds. Umantari, Laksmi and Putra (2016) said that consonant sounds occupy three places in English words, namely in word-initial, medial, and final positions.

Seven participants forgot how to pronounce the vowel sounds. Concerning the phonetic symbols, the participants gave various responses related to the most challenging sound symbols to pronounce.

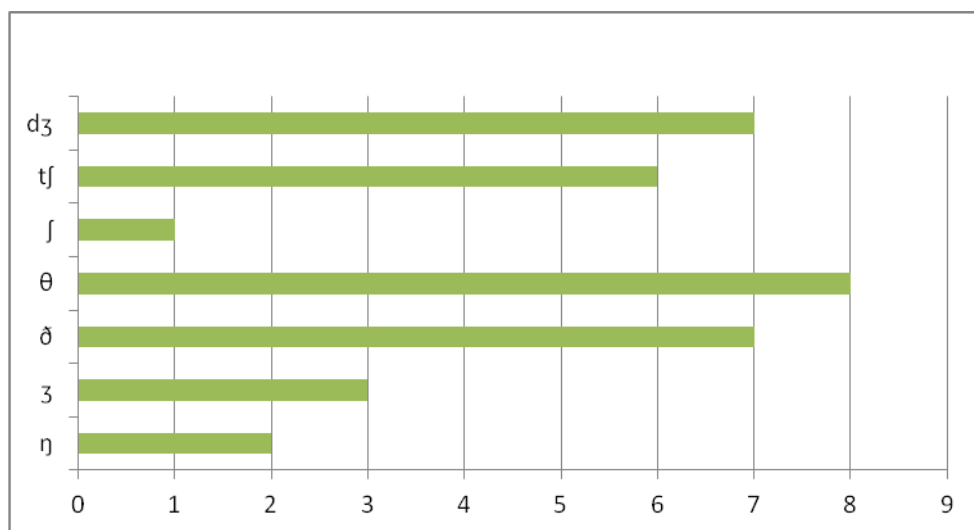


Figure 2. Challenging Consonant Sounds

Next, the survey results in Figure 2 showed that eight of 14 participants who gave responses (57.1%) faced difficulty pronouncing the /θ/ sound, both of /dʒ/ and /ð/ sounds were chosen by seven respondents (50%) of the participants, six (42.9%) with the /tʃ/ sound, three (21.4%) with the /ʒ/ sound, two (14.3%) with the /ŋ/ sound, and one (7.1%) with the /ʃ/ sound. Therefore, it can be concluded that the /θ/ sound was the most difficult consonant for all participants. It is also supported by Komariah (2019), who states that /θ/ is another consonantal sound that is typically an English sound and other languages including Indonesian do not have this consonant sound in their phonetic systems.

Furthermore, Figure 3 showed the survey results of vowel sounds. The participants faced two obstacles: confusion and forgetting how to pronounce the vowel sounds. In this case, the researchers received nine responses, but they did not match the participants who chose the vowels. Thus, two were excluded and only seven participants were included. In addition, of the nine responses about the obstacles faced by the participants, two of them gave responses that did not match with the questions being asked.

Five of 7 participants were confused about pronouncing the vowel sounds. They reasoned that some vowels looked similar, such as /æ/ and /e/ sounds. The /æ/ and /e/ sounds were quite similar to the participants and the /æ/ sound was spoken in some different ways by the speaker (Case, n.d.). The stress or emphasis of a vowel sound might confuse learners because the stress depends on the word which contains the sound (The Free Dictionary, n.d.). Two participants forgot how to pronounce the vowel sounds. The survey also showed that most participants faced difficulty pronouncing more than one vowel sound.

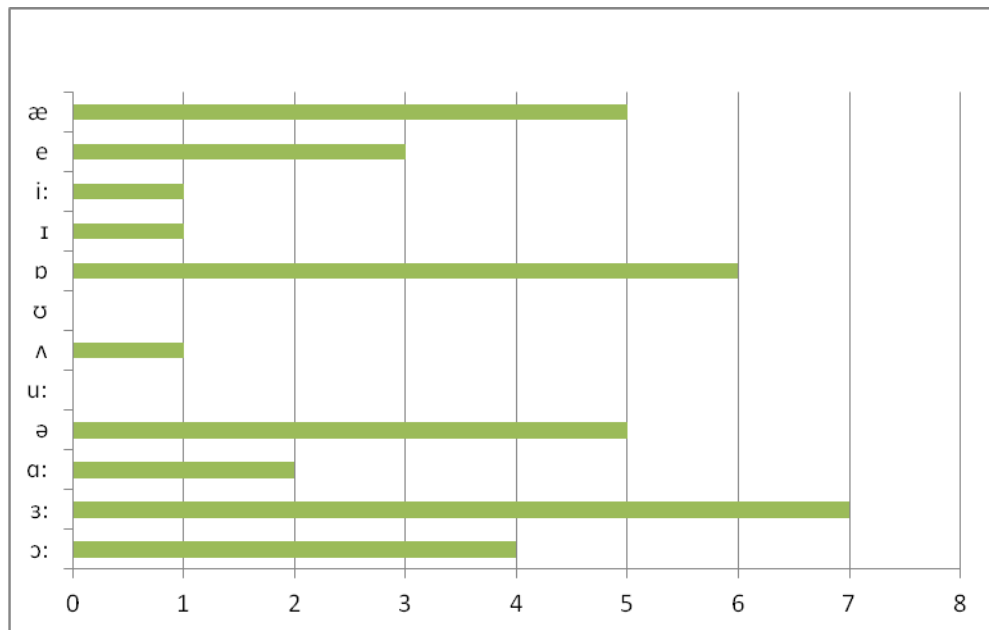


Figure 3. Challenging Vowel Sounds

Figure 3 showed some challenging or difficult vowel sounds for the participants to pronounce, such as /ɜ/ /ɒ/, /æ/, /ə/, /ɔ:/, /e/, /ɑ:/, /i:/, /ɪ/, and /ʌ/. In conclusion, most of the students faced difficulty pronouncing the /ɜ:/ sound, which is one of the long vowel sounds. This is line with Simarmata and Pardede's (2018) finding, which stated that students encountered difficulty producing the long vowel sound /ɜ:/.

Concerning challenging diphthong sounds, Figure 4 summarized the survey results. The participants stated two obstacles, namely unfamiliar or complex phonetic symbols and forgetting how to pronounce the diphthong sounds. In this case, the researchers received 11 responses to the obstacles faced by the participants. Note that the number of the responses did not match the number of participants who chose the diphthong symbols based on the IPA, that is 13 participants. In addition, of the 11 responses to the obstacles faced by the participants, three of them gave responses that did not match the questions being asked.

Seven participants faced difficulty because they were confused about the diphthong sound pronunciation. They found it difficult pronouncing diphthong sounds which consist of difficult and similar sounds, such as the /eə / sound. The participants were confused about the /e/ and /ə/ sounds. As a result, the participants often mispronounced the diphthong sound. The /e/ and /ə/ sound is two of five sounds of unrounded vowels which are produced by forming lips that are not rounded or not widely open (Jaya, 2019). The participants were also confused about producing the diphthong sounds because the vowel combination appeared complex. This situation is understandable to a certain extent because producing diphthong sounds is a motor skill that must be practiced continuously to get good results when pronouncing them (Learning British Accent, n.d.).

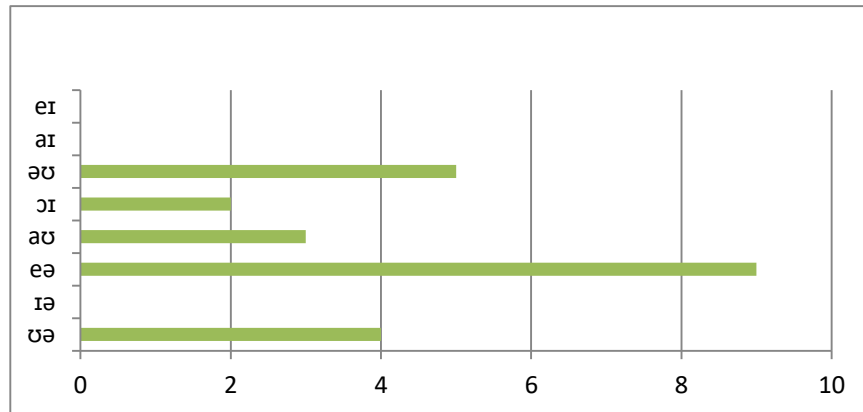


Figure 4. Challenging Diphthong Sounds

As shown in Figure 4, nine participants found the /eə/ sound challenging to pronounce and five with difficulty pronouncing the /əʊ/ sound, for example. It can be concluded that generally, the participants regarded /eə/ as the most difficult diphthong sound to pronounce. It is also in line with the participants' restlessness mentioned earlier that they were also confused about pronouncing the /eə/ sound.

#### ***Causes of Obstacles and Plans to Improve Pronunciation***

The survey results showed that the participants faced many obstacles in English pronunciation. All 23 participants expressed their experiences of why they could experience such barriers. The results showed that four causes existed based on the participants' responses. First, they rarely paid attention to the IPA and rarely consult the dictionary when they wanted to pronounce a word. Second, they lacked deep understanding of phonetic knowledge and practice in pronunciation of different words. Third, they had poor listening comprehension and pronunciation ability. Fourth, they lacked confidence in pronunciation practice which may results in errors and embarrassment.

Even though they faced many obstacles, the participant planned to overcome the obstacles to improve their pronunciation performance. The survey results showed three plans to improve their pronunciation: practicing a lot using several platforms

and resources, checking the IPA and listening/paying attention to word's pronunciation in the dictionary, and consulting with the lecturers about their pronunciation capabilities.

Twelve of 23 participants said that they had to practise more with the IPA focusing on the sounds of words to have proper pronunciation. Some participants may lack innovation in learning and are confused about when to practice good pronunciation. However, students nowadays can easily access various resources and platforms over the internet quickly. Through the internet, the students meet their needs. For example, they can use and learn from YouTube videos or download educational apps, especially International Phonetic Alphabet, to improve their pronunciation use in daily life.

Second, eight participants stated that they wanted to check the IPA and listen to the sounds of the words as provided in the dictionary. As we know, a dictionary is one of the most essential tools for English education students because it can be used as a reference in all aspects when learning a foreign language, for instance, English, and it is a credible source. Using a dictionary, we can check how to pronounce a word that uses the IPA as its base. Therefore, we can use it for training ourselves to improve our pronunciation skills. Utami (2017) argues that just like a grammar book, a dictionary is also a kind of guidance for language learners to obtain new knowledge and skills. Moreover, the development of technology in our lives also changes the dictionary initially in the form of a book to a digital form. Of course, this makes it easy for English education students to learn the correct pronunciation while learning how to interpret phonetic transcription correctly. It can be proven that several e-dictionaries provide the audio for every word that we want to search. Ibnu (2015) says that the learners can use the electronic dictionary to know the pronunciation of words stored in its database.



Third, one participant would like to consult her pronunciation with the lecturer to understand phonetics better. This can be an alternative to learning phonetics effectively, as Morley (1991) supported that the lecturer can be considered a pronunciation coach. In this respect, students can ask their lecturers how to pronounce the symbols, and the lecturers will help them with pleasure. Therefore, by asking the lecturers, students can train themselves and make themselves have proper pronunciation.

#### **D. CONCLUSION AND SUGGESTION**

In conclusion, pronunciation is essential for learners of English. To learn pronunciation, the IPA is a vital foundation. The participants agreed that IPA affected and helped them to improve their pronunciation. However, in practice, the respondents encountered many difficulties pronouncing English words because English was not their native language. They also lacked IPA knowledge, listening comprehension of the IPA, and self-confidence in pronouncing English words. These difficulties existed because of the participants' internal factors. By recognizing their obstacles, the students can try overcome them by themselves by practising the English sounds based on the IPA through some digital platforms, checking the IPA symbols of the words, and listening to the audio of the words in the dictionary, and consulting to the lecturers about English pronunciation based on the IPA.

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