

O’SPEAK FOR ENGLISH PHONETIC AND PHONOLOGY CLASS: WHAT’S ON STUDENTS’ MIND?

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Abstract

In the era of Education 5.0, mobile applications for the teaching-learning process are proliferating. The mobile application also exists in English Phonetics and Phonology Classes. Its name is O’Speak. The use of O’Speak in English Phonetic and Phonology Class derives from the idea of technological development in this digital era. Virtues and hurdles of using O’Speak come out in students’ viewpoints. Therefore, this study is conducted to know the students’ perceptions toward the use of O’Speak in English Phonetic and Phonology Classes. The research method used in this study is a case study that focuses on the phenomenon of O’Speak. English Phonetics and Phonology students are the participants in this study. The finding shows that the students have several overviews toward O’Speak, such as students’ concept of O’Speak, O’Speak designs, and O’Speak comments.

Keywords: hybrid learning; artificial intelligence, speaking; mobile application

INTRODUCTION

The development of technology in the era of Education 5.0 contributes to the use of technology in the teaching and learning process. This notion proposes many ways in triggering teachers to find alternative media or mobile applications to teach or to know students’ skill development. Besides, the use of technology to support the learning process, or called hybrid learning, becomes a new trend in teaching and learning process. Rizal (2018, p. 195) views that “hybrid learning refers to the intentional use of networked information and communication technology in teaching and learning.” (Wijayanto & Siradj, 2017) mention that the use of technology in the education field in the form of graphics, charts, sounds, real-time video and audio, and electronic games is growing rapidly and can be more entertaining and enjoyable. In line with it, Liu (2019) proposes that the development of technology can be seen vividly from the electricity to computers to the Internet then to the World Wide Web.

In the teaching and learning process, the use of technology must be accompanied by the teachers' guidance and students' awareness that technology is a tool; it is not the main focus of the education. Olesen (2014) states that three technology domains consist of technology in use, technology strategy, and technology nature. Moreover, in applying technology in an educational setting, teachers and education stakeholders must acquire the concept of those technology domains so that there will be positive impacts of using technology in the education field, particularly in the teaching-learning process.

The varieties of application show the development of technology. It has a vital role in the students' learning environment. Fabre-Merchan et al. (2017, p.83) contend

“ICT resources and the development of phonemic awareness become imperative to support students in order to enhance their English pronunciation and communicative skills. Technology helps teachers create learning conditions that promote phonemic awareness through real exposure and interaction with native English speakers and real English sounds.”

The use of technology in the teaching-learning process needs to pay attention to the standard that ISTE (International Society for Technology in Education) has. The standard can be seen particularly for the students. As it is mentioned by Morgan (2020) who contends that ISTE has made seven standards for students and for teachers in coping with high-tech society, especially in the educational field. The seven standards for students to cover must be empowered learners, digital citizens, knowledge constructors, innovative designers, computational thinkers, creative communicators, and global collaborators. Furthermore, the seven standards for teachers to cover must be learner, leader, citizen, collaborator, designer, facilitator, and analyst. Moreover, Trust (2018, p.54) reveals

“Technology can be a powerful tool for transforming learning. It can help affirm and advance relationships between educators and students reinvent our approaches to learning and collaboration, shrink longstanding equity and accessibility gaps, and adapt learning experiences to meet all learners' needs.”

It cannot be avoided that technology plays an important role in supporting the teaching and learning process. Many applications exist to be used as learning media to improve students' English pronunciation and speaking or communicative skill. Instead of using a supporting application in the learning process, students need to acquire English phonetic and phonology materials.

Turkle (in Howery, 2018) reveals that students mostly use their smartphone or electronic devices and commonly engage in texting with their friends. Considering this situation, it is a good idea to use students' smartphones to support the hybrid learning process, particularly in English phonetic and phonology class that supports students' speaking proficiency. Cong-Lem (2018) adds that the use of technology in a second language or foreign language classroom can assist learners' speaking acquisition.

Furthermore, software is defined as data processing system in a computer or any other devices that performed any tasks (Cipta et al., 2016). Therefore, software functions as a command

translator for hard disk to perform any commands that are required by computer users. The rapid development of software is marked by four revolutionary eras: pioneer era, stable era, micro era, and modern era (Widodo, 2016). According to its types, software is categorized into two: system software and application software (Rahman & Alfaizi, 2014). A system software configures computer to receive basic commands that are given as input and covers a set of programs to facilitate other programs, for example MS-DOS, LINUX, UNIX, FREE BSD, SUN OS, WINDOWS, MACINTOSH, NOVELL, and others (Rahman & Alfaizi, 2014). Meanwhile, application software is used in any field that may help user to work more effectively and efficiently such as business and office applications, database applications, graphic design, antivirus and utility tools, development tools, communication applications (Rahman & Alfaizi, 2014). Therefore, software development may have a positive contribution in education as a means or media in the teaching and learning process.

Aldahdouh et al. (2015) and Aldahdouh et al. (2020) contend technology development with the wide spectrum and includes learning management systems, blogging tools, discussion forums, bookmarking sites, wikis, social networking sites, and devices cloud computing services, augmented reality, virtual reality, and robot technology. It can be inferred that many varieties of technology can be used as supporting teaching and learning tools. In conducting the teaching-learning process, it cannot be separated from the term of assessment.

In assessing students' skills, teachers need to explore students' needs in learning certain courses that may reflect the core of content and knowledge. Bachman and Palmer (in Bøhn, 2015) view that the aspects of language ability relate to the construction of language assessment in which they relate to content and topical knowledge. Huang et al. (2018) share the term of topical knowledge derives from the knowledge repertoire that the individuals produce and interpret a language. This notion matches the learning atmosphere in this study in which the teachers focus on the students' process in producing and interpreting language use.

The result of students' need might guide the teachers to decide the teaching media or mobile applications to be used in the teaching-learning process. One of the ways of using mobile applications is reflected in this study. This study focuses on using O' Speak in English Phonetic and Phonology class. O' Speak is an application developed by the writers. This application is applied to check students' speaking, especially in pronouncing English words. This study also has academic and practical importance in supporting English phonetic and phonology materials for teaching-learning process. This academic importance is to add variety in the concept of English phonetic and phonology theories; therefore, there will be many academic discussions about the materials. Besides, this study's practical importance is students can use this application easily and can check their speaking skill in the term of English phonetic and phonology.

Regarding the previous study, two studies show the use of technology to measure EFL learners' ability to pronounce English words (Hönig et al., 2012; Pellom, 2012). Pellom (2012) gave an overview of the use of Rosetta Stone ReFLEX that might recognize the user's utterances and detect the pronunciation errors. Rosetta Stone ReFLEX was featured with games and some speaking activities that run by one-on-one live human interaction. Not to mention, this application was advanced with 24 languages in the current version Rosetta Stone Version 4 TOTALE. Even though the application seems to persuade, Rosetta Stone ReFLEX wrote the algorithm and determined the scores based on the direct differences between Korean and English. This

study could be used only for Korean Learners of English and could not be widely used for other Non-Native English/Korean Speakers. The second related article that was done by Hönig et al. (2012) discusses C-AuDiT application as an automatic assessment tool to measure non-native prosodies such as annotation, modeling, and evaluation. In this study, they gathered the English utterances as uttered by different L1 backgrounds to see the distinctive rhythm and prosodic features. These quantitative data were analyzed with the regression procedures and resulted in a good result of C-AuDiT, but it is less applicable due to the cost expense.

Those previous studies contribute to general overviews for the writers to conduct this research. There are similarities and differences between this study and previous studies. The similarity is in this study's general topic, in which it focuses on the use of automated pronunciation evaluation tools for assessing non-native English pronunciation. The difference is the use of applications because this study uses O'Speak application in which it was developed by the writers (Kusumaningrum et al., 2020) by integrating Feuerstein's Mediated Learning Experience principles. O'Speak can be stated as one of Artificial Intelligence (AI) products in the educational field. The term AI is defined as a system that eases people to do something. Russel & Norvig (2012) proposes

“Artificial intelligence determines the future of computer systems and became a part of daily life. Thus, both software and hardware innovations are introduced with increasing computer intelligence, and robots, smart homes, self-driving vehicles, and numerous software are included in daily life.”

Moreover, speaking as one of the language skills also plays an essential role in helping the students to implement their communication skill. Burns (2019) proposes that the teaching and learning process of speaking are important aspects of education classroom for the media as classroom communication and a vital part of the learning outcomes. It indicates that teachers and students must collaborate to create an excellent learning atmosphere of speaking class by considering many aspects such as materials, students' needs, instructional method or media, etc. In addition, Hamad et al. (2019) view that there is a challenge for teachers to teach speaking skills in English as a foreign language context due to students' needs to struggle to learn the appropriate style of speaking. In addition, Albino (2017, p.1) proposes that “EFL learners' speaking fluency, therefore, needs to be the focus of attention in the EFL teaching contexts.” Speaking features need to be mastered by the students, especially in the term of correct pronunciation according to American and British standards. The correct pronunciation is the output of English phonetic and phonology materials. Furthermore, there are many ways to help students learn English phonetics and phonology, particularly in this era. Many applications are existed to support students' learning process.

Since this study used a new application in which it is developed by the writers (Kusumaningrum et al., 2020), its research problem is to investigate the students' perceptions toward the use of O'Speak in speaking assessment, especially in the component of English Phonetics and Phonology materials. The context of this study is in English as a Foreign Language classroom at a university. The unit of analysis in this study is the students' viewpoints toward O'Speak.

METHODS

As the continuation of the prior study on the development of O'Speak (Kusumaningrum et al., 2020), this study explored the students' views and perceptions on the constructed O'Speak under a qualitative research design with a case study procedure (Gall, et al., 2003). This study was carried out in late November to December 2019. The study's context was in English as a foreign language country in which it focuses on an English Phonetic and Phonology classroom. The participants in this study were thirty-five (35) students of English Phonetic and Phonology class, due to the fact that they have already tried to use O'Speak in their class. The data collection procedures applied seven steps in which consist of identifying the case of study, exploring the aims of doing a case study, deciding the participants of study, deciding the instrument of data collection, collecting the data, analyzing and interpreting the data, and getting the results.

Furthermore, the instrument of data collection used was an open-ended questionnaire that was distributed in Google Form. The participants must complete the Google Form in a week. There were ten questions and statements that covered as follows.

Table 1. Questions/Statements for Questionnaire

Questions/Statements
1. What do you know about O'Speak?
2. O'Speak helps me to check pronunciation ability.
3. O'Speak helps me to know my pronunciation level.
4. O'Speak helps me to know my pronunciation score directly.
5. O'Speak helps me to improve my speaking ability.
6. O'Speak is a user-friendly application.
7. O'Speak design is attractive.
8. What is good about O'Speak?
9. What is missing from O'Speak?
10. What is your suggestion for O'Speak?

The responses of the questionnaire showed the students' perspectives toward O'Speak. The questionnaire covers the students' understanding of O'Speak, O'Speak function, O'Speak design, O'Speak plus and minus, and suggestion for O'Speak developers. After getting the data, the writers analyzed the data qualitatively. The writers created themes as the results of the study and developed them for the discussion part. Then, the writers concluded the study.

FINDINGS AND DISCUSSION

In this study, the implementation of AI is showed in the product of O'Speak in which it eases students and teachers to access students' speaking skills in the form of pronunciation. Based on the data analysis, there are five main findings of this study that cover students' understanding of O'Speak, O'Speak function, O'Speak design, O'Speak strengths and weaknesses, and suggestion for the betterment of O'Speak. These findings give specific overviews toward O'Speak application. The results are stated as follows.

Students' understanding of O'Speak

The result of the questionnaire shows that students have a good concept of O'Speak when they use it in their class. They can share their viewpoints clearly about O'Speak. All students view

that O'Speak is an application that helps them improve their speaking skills, especially pronunciation. The samples of data can be seen in Table 2.

Table 2. Students' understanding of O'Speak

Students	Concept of O'Speak
A	O'Speak is an application that can improve our pronunciation skill.
B	O'Speak is to measure our ability in pronunciation of English words. From this application, we can know in which level we are.
C	O'Speak has a function to help users in speaking, especially at pronunciation.
D	This application that can practice our pronunciation with interesting exercises.
E	O'Speak is an application that can help us practice the pronunciation of a word properly and correctly.
F	O'Speak is an application to practice English pronunciation.
G	O'Speak is an application to check the pronunciation.
H	O'Speak is an application that likes a game about pronunciation.
I	O'Speak is an application to improve our pronunciation.
J	O'Speak is an application that helps us to study pronunciation in interesting way.

Table 1 in the methods part infers that students have a positive perspective toward O'Speak in which it is an application to help students check or learn pronunciation. It can be used as an additional or alternative way to measure students' speaking skill.

O'Speak functions

Based on students' viewpoints after using O'Speak, it has four functions in supporting students' English phonetics and phonology learning. The functions are summarized as follows.

1. O'Speak helps students to check pronunciation ability.
2. O'Speak helps students to know their pronunciation level.
3. O'Speak helps students to know their pronunciation scores directly.
4. O'Speak helps students to improve their speaking ability.

These functions derive to the idea that O'Speak is a proper application to be used as a platform to help students improve their speaking skill, particularly in their pronunciation.

O'Speak design

Regarding the students' perspectives, O'Speak application's design contributes to the students' interest in accessing the application. Therefore, the user interface of O'Speak plays an important role in attracting the students. The students view that O'Speak design is user-friendly, and it is an attractive application. The user interface of O'Speak application can be seen below.



Figure 1. O'Speak logo

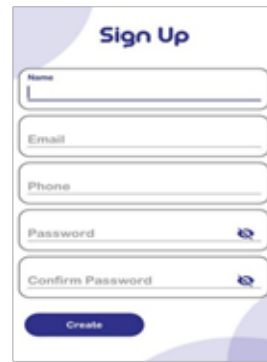


Figure 2. Sign Up page



Figure 3. Sign in page

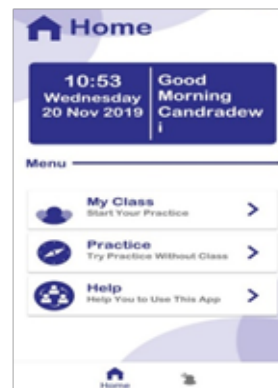


Figure 4. Home page



Figure 5. Practice page

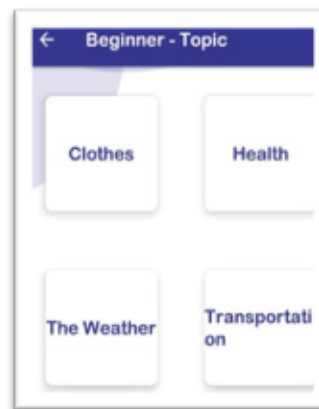


Figure 6. Level and Topics page



Figure 7. Checking page

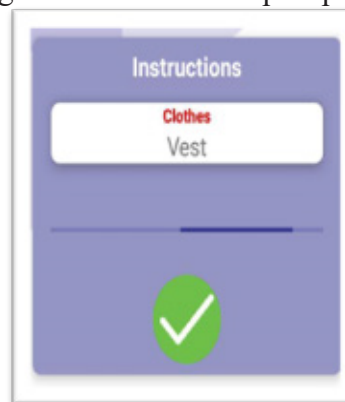


Figure 8. Result page

Those figures give a general overview of O'Speak. Students view that the color and the look of O'Speak are attractive because the chosen design is simple and easy to use. Therefore, it makes students enthusiastic in accessing the application. It is proved by the responses of students who show that thirty-three (33) out of thirty-five (35) students choose both agree and strongly agree statement for the statement in the questionnaire O'Speak is a user-friendly application. The application can be installed easily on students' mobile phones. Furthermore, there are twenty-five (25) out of thirty-five (35) students stated that O'Speak design is attractive. It means that O'Speak's design is interesting.

O'Speak Strengths and Weaknesses

In the era of Education 5.0, students have already had the skill of being 21st century learners. It can be seen from how they give their higher order critical thinking toward the plus and minus of using O'Speak. The plus and minus of O'Speak help the writers to identify the aspects that will be improved. The samples of students' viewpoints can be seen in Table 3.

Table 3. O' Speak Strengths

Students	O' Speak Strengths
A	It is simpler than the other speaking application. How to use it is very simple.
B	The application is simple and easy to use.
C	We can know that our pronunciation is good enough or not.
D	O' Speak is so challenging. It's great!
E	We can know our score directly, and we shouldn't pay to use the application.
F	In O' Speak, there are some activities that help us improve our pronunciation and it is easy to be used.
G	It can give us a score for our pronunciation.
H	It directly checks our pronunciation. I ever used an application about speaking, but it just shows me about the phonetic transcription and the word; without let the users input their voice to be corrected.
I	We can know about our skill in pronouncing a word /phrase.
J	There will be a score after we complete the test. It looks simply that is user friendly.

Table 3 shows that the students get advantages in accessing O'Speak. Generally, the students are comfortable in using the application. It can be reflected from the way the students 'responses.

Table 4. O' Speak Weaknesses

Students	O' Speak Weaknesses
A	When I clicked the audio button to start to input my voice, it suddenly moved to the other word before I finished inputting my voice.
B	There is still no phonetic transcription.
C	Some files are missing so the application can't run well.
D	There is not enough sensitivity in capturing sound. There are still a few empty levels.
E	unstable because in development
F	When we try to do exercise, suddenly the display is too long, and we did not push the button, but the button already push, and we have not done the exercise.
G	The key answer to correct pronunciation is not available.
H	There aren't new vocabularies in the practice menu.

I	The suitability for checking pronunciation is still low. And not all gadgets can in stall it
J	When I try to use this application, sometimes I have not pushed the button, but suddenly the word is changed.

Table 4 shows that the students view several aspects that need to be improved in O'Speak application. These views help the writers to upgrade O' Speak. The plus and minus points will be used as the improvement and betterment of O'Speak application since the writers of this study develop this application.

Suggestion for the improvement of O'Speak

The suggestions for O'Speak from the students guide the writers to improve O'Speak application. The recommendations can be seen as follows:

1. Giving an evaluation of the correct word's pronunciation after the last question, so that we can know which pronunciation is wrong.
2. Improving O' Speak to be better application and add more variants in quiz.
3. Adding a rating 1-5. After the users try to say it, the users will know how much stars we get 0 star for worst pronunciation, 1 to very less, 2 for less, and so on until 5 that means the best answer. So, the users will know which words we are good or bad pronunciation.
4. Adding some more words and adding a tool that can show us where our mistakes in pronounce word, so later we can learn the right pronunciation from that word.
5. Adding the variety of activity to make it more attractive
6. Adding the correct answer, so the user can know the correct answer and they will also know where their mistakes are.
7. Creating some exercises and features
8. Improving the quality of application to be better
9. Developing the sensitivity to voice input.
10. Adding more topics for each section and also after knowing the score hopefully there are the correct way (maybe the phonetic transcription) about how to pronounce the words correctly.

Based on the findings in the theme of O' Speak strengths, it can be concluded that O'Speak application is a good application to be used in English phonetic and phonology class, but it needs many improvements. By considering the students' perceptions, O'Speak is particularly ready to be used in a wide range of users, especially for the students who want to improve their pronunciation skills. This application facilitates the students to check the level of their pronunciations of English words. This concept helps the students be autonomous learners who can learn anywhere and anytime by using their gadgets. Therefore, gadgets can be seen as a positive tool to be used wisely and in a good way.

In the era of internet wave, being autonomous learners in English phonetic and phonology class are a must due to students' need to explore their proficiency in pronouncing words outside the classroom. It is in line with Mehdiyev's viewpoint (2020); she shares recent developments in educational technology, internet and virtual learning environments provide an effective basis for the application of modern approaches such as the learning autonomy in the fields of foreign language learning and teaching. This study's results also match with the theory stated by Fabre-Merchan et al. (2017). They contend that many ICT resources can be used as a way to improve students' English pronunciation and communicative skills. It means that O'Speak, as

one of the ICT resources, is ready to be used as the ICT resource to help students explore their pronunciation ability.

The results reveal the students' perceptions toward the strengths of O'Speak' on a concept, the function, the design, and the comments of O'Speak. Meanwhile, not all of the students perceived and agreed with the statements that O'Speak is a user-friendly application, and O'Speak design is attractive. This phenomenon is normal due to each student has his or her own perception of O'Speak. They cannot be judged that they are wrong since their perceptions are different from one another.

The plus and minus of O'Speak application are also needed to make O'Speak become a user-friendly application. The samples of plus and minus points of O'Speak derive to the idea of adding several features in O'Speak application such as phonetic transcription, the use of attractive design, sensitivity in recording the voice, and etc. In addition, the suggestions for the betterment of O'Speak have a significant effect on the improvement of O'Speak in the future.

CONCLUSION

This study gives a general overview of the students' perceptions toward the use of O'Speak in learning pronunciation especially in English phonetic and phonology class. Generally, O'Speak application is a useful application for users who want to check their pronunciation level. This implication of study for the students and teachers are it helps them find an alternative application that can be used in speaking class generally and English phonetic and phonology class particularly. Besides, this study's limitation is captured from application itself in which it still provides several words that are tested. In addition, many improvements and betterments are needed to make O'Speak become a user-friendly application for the Gen Z generation in this Education 5.0 era. In this era, the development of technology for supporting language learning needs to be explored by considering the existing of many learning applications such as O'Speak. It cannot be separated that O'Speak will be an alternative application from many other applications that help the users or students to improve their speaking or communicative skill, particularly in producing correct pronunciation. Furthermore, it is suggested that there will be possible prospective research toward the use of O'Speak or another platform to enhance technology in language learning.

This study gives three significances theoretically, practically, and pedagogically. Theoretically, this study contributes to prove and add several theories of students' perceptions toward using the application in supporting the teaching-learning process in this era. As Curwood (2014, p.11) mentions "professional learning communities may enhance the fidelity of educational reforms and promote teachers' adoption of new literacies and new technologies." It means that the use of technology in the form of application plays an important role in teaching and learning process. Practically, this study can be conducted easily by the students and teachers toward designing or developing learning application by considering students 'needs, exploring students' perceptions toward the use of the application. Pedagogically, this study gives contributions to the academic field and it can be used as a reference for the next researchers who are interested in conducting the study about students' perceptions of using learning applications in the form of O'Speak or another application.

REFERENCES

- Albino, G. (2017). Improving Speaking Fluency in a Task-Based Language Teaching Approach: The Case of EFL Learners at PUNIV-Cazenga. *SAGE Open*, 7(2), 1–11. <https://doi.org/10.1177/2158244017691077>
- Aldahdouh, A. A., Osório, A. J., & Caires, S. (2015). Understanding knowledge network, learning and connectivism. *International Journal of Instructional Technology and Distance Learning*, 12(10), 3–21. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3063495%0Ahttp://www.itdl.org/Journal/Oct_15/Oct15.pdf#page=7
- Aldahdouh, T. Z., Nokelainen, P., & Korhonen, V. (2020). Technology and Social Media Usage in Higher Education: The Influence of Individual Innovativeness. *SAGE Open*, 10(1), 1–20. <https://doi.org/10.1177/2158244019899441>
- Bøhn, H. (2015). Assessing Spoken EFL Without a Common Rating Scale: Norwegian EFL Teachers' Conceptions of Construct. *SAGE Open*, 5(4), 1–12. <https://doi.org/10.1177/2158244015621956>
- Burns, A. (2019). Concepts for Teaching Speaking in the English Language Classroom1. *LEARN Journal: Language Education and Acquisition Research Network*, 12(1), 1–11.
- Cipta, H., Indonesia, M., Hasugian, A. H., & Indonesia, M. (2016). *Perancangan Perangkat Lunak Pembelajaran Bermain Gitar*. October, 243–250.
- Cong-Lem, N. (2018). Web-Based Language Learning (WBLL) for Enhancing L2 Speaking Performance: A Review. *Advances in Language and Literary Studies*, 9(4), 143–152. <https://doi.org/10.7575/aiac.all.v.9n.4p.143>
- Curwood, J.S. (2014). English Teachers' Cultural Models about Technology: A Microethnographic Perspective on Professional Development. *Journal of Literacy Research*, 46 (1), 9–38.
- Fabre-Merchan, P., Torres-Jara, G., Andrade-Dominguez, F., Ortiz-Zurita, M. J., & Alvarez-Munoz, P. (2017). A Phenomenological Study: The Impacts of Developing Phonetic Awareness through Technological Resources on English Language Learners' (ELL) Communicative Competences. *English Language Teaching*, 10(12), 83–87. <https://doi.org/10.5539/elt.v10n12p83>
- Gall, M. D., Gall, J. P., & Borg, W. R. (2003). *Educational research: An introduction* (7th ed.). In Boston, MA: A & B Publications.
- Hamad, M. M., Metwally, A. A., & Alfuruque, S. Y. (2019). The Impact of Using YouTubes and Audio Tracks Imitation YATI on Improving Speaking Skills of EFL Learners. *English Language Teaching*, 12(6), 191–198. <https://doi.org/10.5539/elt.v12n6p191>
- Hönig, F., Batliner, A., & Nöth, E. (2012). Automatic Assessment of Non-Native Prosody — Annotation, Modelling and Evaluation. *Proceedings of the International Symposium on Automatic Detection of Errors in Pronunciation Training (IS ADEPT)*, January 2020, 21–30.
- Howery, K. L. (2018). Out of Time: The Experience of Speech-Generating Device Users. *Communication Disorders Quarterly*, 40(1), 40–49. <https://doi.org/10.1177/1525740118766480>
- Huang, H. T. D., Hung, S. T. A., & Plakans, L. (2018). Topical knowledge in L2 speaking assessment: Comparing independent and integrated speaking test tasks. *Language Testing*, 35(1), 27–49. <https://doi.org/10.1177/0265532216677106>
- Kusumaningrum, W., Anggraeni, C., & Asmara, R. (2020). *Envisaging the Needs for Designing L2 Pronunciation Assessment*. <https://doi.org/10.4108/eai.12-10-2019.2292208>

- Liu, C. K. W. (2019). A holistic approach to flipped classroom: A conceptual framework using e-platform. *International Journal of Engineering Business Management*, 11, 1–9. <https://doi.org/10.1177/1847979019855205>
- Mehdiyev, E. (2020). Opinions of EFL Students Regarding Autonomous Learning in Language Teaching. *Journal of Language and Linguistic Studies*, 16 (2), 521-536.
- Morgan, H. (2020). Best Practices for Implementing Remote Learning during a Pandemic. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 93(3), 135–141. <https://doi.org/10.1080/00098655.2020.1751480>
- Olesen, K. (2014). Technological Frames. *SAGE Open*, 4(1), 215824401452672. <https://doi.org/10.1177/2158244014526720>
- Pellom, B. (2012). Rosetta Stone ReFLEX : Toward Improving English Conversational Fluency in Asia. *Proceedings of the International Symposium on Automatic Detection of Errors in Pronunciation Training (IS ADEPT)*, 15–20.
- Rahman, W., & Alfaizi, F. (2014). Mengenal Berbagai Macam Software. *Surya University*, 100.
- Rizal, D. (2018). Hybrid Learning of Daviq.com in the Subject of Teaching Listening and Speaking. *Vision: Journal for Language and Foreign Language Learning*, 6(2), 177–191. <https://doi.org/10.21580/vjv6i21980>
- Russel, S., & Norvig, P. (2012). Artificial Intelligence: A Modern Approach 3rd Edition. In *The Knowledge Engineering Review*. <https://doi.org/10.1017/S0269888900007724>
- Trust, T. (2018). Why Do We Need Technology in Education? In *Journal of Digital Learning in Teacher Education* (Vol. 34, Issue 2, pp. 54–55). <https://doi.org/10.1080/21532974.2018.1442073>
- Widodo, W. (2016). Evaluasi Proses Pengembangan Perangkat Lunak pada Virtual Team Development Menggunakan CMMI Versi 1.3. *Jurnal Informatika*, 10(1), 1140–1148. <https://doi.org/10.26555/jifo.v10i1.a3345>
- Wijayanto, P. W., & Siradj, Y. (2017). The Educational Game “Indonesian Tribes” for the Kindergarten Students. *IJPTE : International Journal of Pedagogy and Teacher Education*, 1(1), 29–45. <https://doi.org/10.20961/ijpte.v1i1.8456>