

Lesson study and the pronunciation of -ed endings of regular verbs

Cristian Fernando Romero Labanda
cristianro1118@gmail.com
Universidad Nacional de Loja
Loja - Ecuador
<https://orcid.org/0009-0009-0972-050X>

Miriam Eucevia Troya Sánchez
miriam.troya@unl.edu.ec
Universidad Nacional de Loja
Loja - Ecuador
<https://orcid.org/0000-0001-7798-8684>

ABSTRACT

This study aims to improve the pronunciation of -ed endings of regular verbs among 35 ninth-graders through the implementation of lesson study at a public school in the city of Loja, Ecuador during the 2021-2022 school year. This study employed a mixed method with a quasi-experimental design. Data were collected through a pretest and posttest, a questionnaire, and field notes which were registered by the researcher as a participant observer and three collaborators as non-participant observers. After an eight-week period of time, results demonstrated that lesson study helped ninth-graders to improve their pronunciation knowledge related to -ed ending sounds (/d/, /t/, /id/) as they moved from ineffective or partially effective pronunciation to good pronunciation. Additionally, among the four strategies used for pronunciation instruction, students expressed that “songs” were the most effective for their pronunciation improvement. Furthermore, it was beneficial for the researcher as it contributed to his openness to reflect upon his collaborators’ observations, which helped him to develop more effective lesson plans.

Palabras clave: -ed ending sounds; lesson plans; lesson study; pronunciation; regular verbs.

El estudio de clase y la pronunciación de las terminaciones -ed en los verbos regulares

RESUMEN

Este estudio tiene como objetivo mejorar la pronunciación de las terminaciones -ed de los verbos regulares en 35 estudiantes de noveno grado a través de la implementación del estudio de clase en una escuela pública de la ciudad de Loja, Ecuador durante el año escolar 2021-2022. Este estudio empleó un método mixto con un diseño cuasi-experimental. Los datos fueron recolectados a través de un pretest y posttest, un cuestionario y notas de campo que fueron registradas por el investigador como observador participante y tres colaboradores como observadores no participantes. Tras un periodo de ocho semanas, los resultados demostraron que el estudio de clase ayudó a los alumnos de noveno grado a mejorar sus conocimientos de pronunciación relacionados con las terminaciones -ed (/d/, /t/, /id/), ya que pasaron de una pronunciación ineficaz o parcialmente eficaz a una buena pronunciación. Además, entre las cuatro estrategias utilizadas para la enseñanza de la pronunciación, los alumnos manifestaron que las "canciones" eran las más eficaces para mejorar su pronunciación. Así mismo, fue beneficioso para el investigador, ya que contribuyó a que se muestre más entusiasta a reflexionar sobre las observaciones de sus colaboradores, lo que le ayudó a desarrollar planes de lecciones más eficaces.

***Palabras clave:** estudio de clase; planes de lecciones; pronunciación; terminaciones -ed; verbos regulares.*

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INTRODUCTION

One of the fundamental components of language proficiency is pronunciation. Thus, it is also one of the most critical aspects of language training (Pourhosein, 2016). The Ministry of Education (2016) points out that Ecuadorian students in the 9th year of primary education are expected to have intelligible pronunciation to produce and recognize individual words and short phrases vividly enough to be clearly and easily understood. However, the pronunciation of past tense regular verbs seems to be difficult for Spanish speakers due to the negative transference of the Spanish language, which holds students back from achieving a native-like pronunciation (Correa et al., 2020).

Ecuadorian students struggle to pronounce -ed endings of regular verbs in context and in isolation because, for Spanish native speakers, it is difficult to produce two voiced consonant sounds (consonant clusters) together (Correa et al., 2020; Rodríguez, 2017). Furthermore, what makes it an issue in the Ecuadorian context is the limited emphasis on pronunciation teaching and the phonetic simplicity of the Spanish language in contrast to the English language. Thus, the lack of pronunciation teaching makes students' pronunciation inadequate, and they fail to pronounce words accurately. Therefore, the purpose of this study was to implement lesson study to improve the pronunciation of -ed endings of regular verbs among ninth-graders at a public school in the city of Loja, Ecuador during the 2021-2022 school year.

Previous studies conducted in lesson study and pronunciation of -ed endings of regular verbs concluded that lesson study is beneficial for improving students' language skills and teachers' practices. Uştuk and De Costa (2021) define lesson study as a process for collaborative professional development for peer observation and teaching reflection. Regarding pronunciation, researchers agree that pronunciation is a subskill that must not be neglected in teaching practices because it helps students develop different skills, such as listening, speaking, reading, and writing. Pronunciation is the usage of the speech organs for articulating sounds to produce words and meanings (Correa et al., 2020; Hendrawaty et al., 2017; Thayyib & Syam, 2015).

Even though these studies have worked on pronunciation and lesson study, there has been no research that has used both as their main variables. Therefore, it can be stated that the application of this research study helped ninth graders enhance their pronunciation knowledge related to -ed endings of regular

verbs. Thus, it contributed to students achieving the goal established by the Ministry of Education (2016), which expects that students should develop clear pronunciation and recognition of individual words and short phrases for personal interests and routine contexts.

Furthermore, it is worth mentioning that the application of this study may be helpful especially for both novice and experienced teachers as it contributes to their professional development in a real classroom context. Moreover, this investigation can be a starting point for future inquiries into pronunciation improvement through lesson study. Teachers can learn from their practices, verify their effectiveness, and tailor proper teaching lessons according to the students' needs, level, age, etc. instead of relying on others to prove what works (Hendrawaty et al., 2017; Satriani et al., 2020; Thayyib & Syam, 2015).

Wahman et al. (2020) and Stepanek et al. (2007), point out that lesson study encourages teachers to reflect on students' learning goals and learning needs, which leads them to refine their lessons, which eventually, develop learners' skills. Thus, the general question for this research is: How does lesson study influence English pronunciation of -ed endings of regular verbs among ninth-graders at a public school in the city of Loja, Ecuador during the 2021-2022 school year? and the sub questions are: How effective is the application of pronunciation strategies through lesson study to improve the pronunciation of -ed endings of regular verbs? What are the most suitable pronunciation strategies through lesson study to improve the pronunciation of -ed endings of regular verbs? What are the teacher's and students' perceptions about lesson study to improve the pronunciation of -ed endings of regular verbs?

This research is grounded in the theory of lesson study which is summarized by Soto and Pérez (2015) as a cycling process where teachers cooperatively design, implement, observe, analyze and revise a lesson plan. In this cyclic process, teachers get together to create lessons based on their experiences or knowledge and then refine the lessons by considering 'the information gathered through classroom observations. Additionally, every group member takes it, in turn, to teach the lesson while the others observe to continue collecting valuable data. Moreover, the classes are modified and taught as many times as necessary.

On the other hand, we also have that one of the basis of this study is the pronunciation of the -ed endings. According to Holguín (2019) it is widely believed that the -ed endings pronunciation is not common in Spanish since it requires the pronunciation of two consonants together, Thus, native Spanish speakers

struggle when pronouncing the -ed rule for the past and past participle of regular verbs. There are three ways in which the -ed endings can be pronounced (/ɪd/, /t/, and /d/). The correct pronunciation of each sound in a verb mainly depends on the ending sounds. The first -ed ending sound is /ɪd/ it is produced in regular verbs that end in the voiceless /t/ and the voiced /d/ sound. Example: Wanted /'wɑ:n.tɪd/. The second -ed sound is /t/, and it is pronounced in regular verbs that end in voiceless sounds like /p/, /k/, /f/, /s/, /tʃ/, /ʃ/, etc. Example: Fixed /fɪkst/. Finally, the third -ed sound is /d/ which is pronounced in verbs that end in voiced sounds such as; /b/, /v/, /g/, /z/, /j/, /ð/, /l/, /m/, /n/, /r/, /l/, etc. Example: Closed /kloʊzd/ (Celce-Murcia et al., 2010 as cited in Correa et al., 2020).

Regarding to previous studies developed in lesson study and pronunciation, a mixed method research conducted by Benitez et al. (2020), had as its primary objective the implementation of Audacity as a means to improve the past tense pronunciation of regular verbs of 30 EFL undergraduate students in Ecuador. For qualitative and quantitative data collection, surveys, tests, and audio recordings were used. The posttest results revealed a significant improvement in students' pronunciation of -ed endings of regular verbs compared to the pretest results.

An action research study conducted by Thayyib and Syam (2015), studied the development of learning activities in pronunciation practice class through lesson study in two students in the sixth semester of the English education study program. Observation sheets were used to measure students' learning activities and documentation to show the performance of students and teachers through some photos and videos. After data analysis, researchers concluded that the implementation of lesson study was beneficial for helping students to improve pronunciation during practice activities during the lesson. Moreover, it could make the teachers understand learners' problems and innovate their teaching to enhance students' learning activities.

Hendrawaty et al. (2017), carried out a qualitative research work in order to study the use of the Protatik application (phonetic table program) along with lesson study to improve students' pronunciation. An observation sheet about lesson study (plan, do, and see) was implemented to collect information about the practices for a further reflection which allowed them to decide for the lessons. Moreover, documentation comprising recordings and photos taken of the class was used for the same purpose. The

findings demonstrated that the lesson study ran well and helped researchers improve learning activity from the observations.

Portillo et al. (2019) conducted research to improve ninth-graders pronunciation of -ed endings in simple past regular verbs through the Audiolingual method in El Salvador. Observation checklists were used to evaluate the class environment before and during the whole intervention process. An interview addressed to the teacher helped researchers have vast knowledge about students' pronunciation problems. A questionnaire, and a pretest and posttest directed to the students determined the level of improvement of students' pronunciation. At the end of the intervention, it was concluded that the implementation of the audiolingual method helped students gradually improve the pronunciation of -ed endings in past regular verbs.

Satriani et al. (2020) carried out a study for improving pedagogical skills, especially in teaching English for public speaking, with the help of lesson study. Classroom observation was used to see the students' behavior and the teacher's strategy in teaching. After data analysis, it was concluded that lesson study in teaching English for public speaking positively impacted both teacher and students.

Kıncal et al. (2019) conducted a mix-research in order to increase English as a foreign language learning level with the help of lesson study and twenty-four students in the 9th year. A pretest and posttest defined students' starting point along with improvement, and a semi-structured interview showed teachers' perspectives about lesson study practice. Results revealed that students significantly improved their English language level, and lesson study implementation was highly beneficial, and positively affected teachers' professional development.

METHODOLOGY

This research implemented a mixed method which is a combination of the quantitative and qualitative data to dig deeper into phenomena to fully understand it (Gay et al., 2011). It was a quasi-experimental research design since there was not a control group nor a random selection of participants (Rose and McKinley, 2020). There was a manipulation of the independent variable, which in this case was lesson study to improve pronunciation of -ed endings of regular verbs. Quantitative information was gathered through pretest and posttests applied by the researcher to students aimed to determine learners'

knowledge of pronunciation of -ed endings of regular verbs. Also, a questionnaire was applied to see the students' perceptions of the teaching and learning of pronunciation. On the other hand, the qualitative data was collected by field notes to get the teacher's perceptions about the lessons.

The participants for this research were a group of 35 students (16 men and 19 women) between the ages of 13-15 who were in the ninth grade at a public school located in the city of Loja, Ecuador during the 2021-2022 school year. The participants were selected by using a convenience sampling because of the availability of the participants (Gay et al., 2011). Additionally, collaborators actively took part in this research work during the entire intervention process to design, refine and observe lesson plans for improving pronunciation.

For the quantitative data, the researcher used a paper and pencil method to elaborate a pretest and posttest in order to recognize students' weaknesses and strengths on the pronunciation of ed-endings of past tense verbs at the beginning and at the end of the intervention plan. Moreover, a questionnaire was administered to students to evaluate their perceptions of the teaching and learning process during the intervention plan. Additionally, field notes were registered during the lessons by non-participative observers (collaborators), and the researcher, as participant-observer in order to capture students' reactions and the teacher's performance towards the application of lesson or research plans aimed to improve students' pronunciation.

The data analysis was done with the aid of descriptive statistics. Thus, data from the pretest and posttest were tabulated and presented in a bar graph where the grades were compared to the educational Ecuadorian quantitative and qualitative grading scale to determine students' proficiency level on pronunciation. Moreover, inferential statistics through the Wilcoxon test was used, which provided a simple summary of the sample and the pretest and posttest scores to determine whether the change was statistically significant.

For the data collected through the open ended and closed-ended questionnaires, the researcher used a thematic analysis, which is a mere identification of patterns derived from the answers to determine shared experiences from the participants (Gay et al., 2011). Graphs with scales were used to present the results gathered from close ended questions. Finally, for the field notes, the researcher described a narrative about his experiences during the application of lesson study.

RESULTS

Pretest and Posttest Results

Sub question 1: How effective is the application of pronunciation strategies through lesson study to improve the pronunciation of -ed endings of regular verbs among ninth-graders at a public school in the city of Loja during the 2021-2022 school year?

Figure 1. *Pretest and Posttest Comparison*

Pretest and Posttest Results Compared to the National Grading Scale

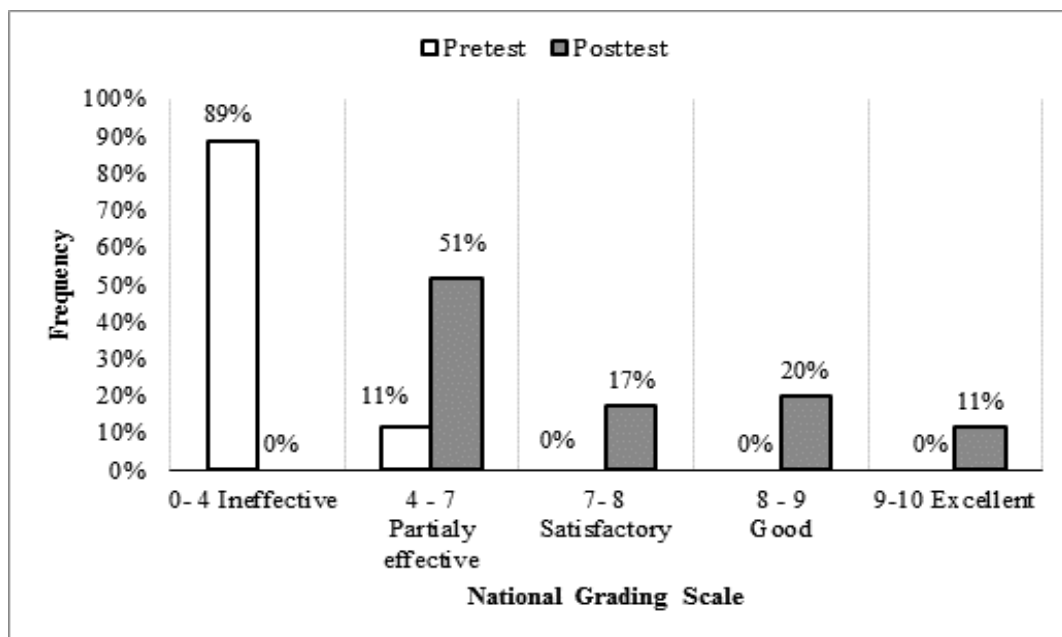


Figure 1 illustrates the results of the pretest, which was administered to ninth-grade students prior to the intervention plan in order to establish a baseline about their skills on the pronunciation of the -ed endings of regular verbs. On the whole, 100% of the population could not reach the average score (7/10) proposed by the Ministry of Education on the national grading scale. That showed that all students could not reach the necessary learning components related to pronunciation and recognition of the -ed endings sounds (/ɪd/, /t/, and /d/) in regular verbs.

In regard to “comprehensibility”, students’ recognition of the -ed endings in regular verbs was not as effective. Students could not comprehend the speaker's utterances. Moreover, in the case of “word stress”, students’ production and recognition of regular verbs in the -ed form were partially effective. When pronouncing, students performed intonation with many pauses and/or hesitations based on the syllables and stress/unstressed parts of words. During the pronunciation, students put more emphasis on

the -ed endings, thus failing to pronounce verbs accurately.

As for “connected speech”, students’ recognition and pronunciation of -ed sounds from consonants to consonants, and consonants to vowel sounds were partially effective. Thus, when pronouncing, students had an inaccurate pronunciation of the -ed form of regular verbs, and a lack of connection in pronunciation with the preceding words. Besides, learners made too many pauses and/or hesitations, which interfered with comprehensibility.

Finally, in terms of “intelligibility”, students’ production of regular verbs in the -ed form was ineffective. Students produced major inaccuracies with the pronunciation of individual sounds, which caused significant problems in intelligibility. Furthermore, students made significant pauses or hesitations, which interfered significantly with comprehensibility.

Consequently, it can be said that students’ pronunciation severely impeded communication. It was observed that the poor pronunciation of the -ed ending sounds was mostly for the negative interference of the Spanish language spoken in Ecuador, as students were not accustomed to pronouncing consonant clusters similar to the final -ed of the regular verbs. Therefore, students pronounced the -ed endings as /ed/ and not as /t/, /d/, or /id/.

To sum it up, students’ lowest performance was seen in “intelligibility”, which refers to the correct production of sounds. On the other hand, the highest performance was seen in “comprehensibility”, which stands for accurate recognition of sounds. Thus, it can be deduced that students could somewhat understand or recognize sounds. As a consequence, the pronunciation of the sounds was the real issue that helped the researcher to decide to carry out the intervention plan in this population.

On the other hand, after an eight-week period of intervention, a posttest was applied to students to measure their pronunciation knowledge of the final -ed of regular verbs. Accordingly, from the Figure 1 above, 48% of students reached and exceeded the average score of the national grading scale. Furthermore, it can be seen that 52% of students were about to reach the necessary learning components in comparison to the pretest, where they did not reach them.

Regarding “comprehensibility”, after the intervention plan, students could identify more accurately the -ed ending final sounds. Thus, this time, the speaker’s production was understood by the students. Even

though students had improved their recognition of sounds, they still needed to master it, especially the /t/ and /d/ sounds.

Respecting “word stress”, learners’ production and recognition of sounds passed from partially effective to good pronunciation level. Consequently, when pronouncing, students performed intonation based on the syllables and stress/unstressed part of words, which helped students understand and make their utterances more comprehensible.

Concerning “connected speech”, students showed significant improvement in the production and recognition of the connection of the -ed ending sounds, whether with consonants or vowels. Thus, students passed from partially effective to good pronunciation level, which showed that learners had a clear pronunciation of the -ed forms of regular verbs, and a clear connection in pronunciation with the preceding word. Besides, students produced occasional pauses and/or hesitations that did not interfere with comprehensibility.

Last but not least, regarding “intelligibility”, students significantly improved their production of sounds. Thus, students passed from ineffective to good pronunciation, which demonstrated that learners had a clear pronunciation of individual sounds and produced occasional pauses and/or hesitations that did not interfere with comprehensibility; therefore, pronunciation rarely impeded communication.

Overall, students’ pronunciation improved in the four components of pronunciation under study: comprehensibility, intelligibility, word stress, and connected speech. However, students still needed more training to master the pronunciation to become active language users.

Table 1. *Pretest and Posttest Comparison Through the Wilcoxon Test*

	Rank	N	Sum of ranks
Pretest scores	Negative rank	35	630
Posttest scores	Positive rank	0	0
	Ties	0	
	Total population	35	
	Critic value	195	

$p \leq 0,05$

Wilcoxon Ranks offer important details regarding the overall findings about the performance of ninth-graders before and after implementing an intervention plan based on lesson study to help students pronounce accurately the past tense of regular verbs. The whole population (35 students) had a higher level of pronunciation skills after the action plan. Thus, there was a statistically significant ($p \leq 0.05$) improvement in students' pronunciation. Such effectiveness is corroborated with the questionnaire and field notes, which show teachers' and students' perceptions towards lesson study to improve the pronunciation of -ed endings in regular verbs.

Questionnaire Results

Sub question 2: What are the most suitable pronunciation strategies through lesson study to improve the pronunciation of -ed endings of regular verbs?

Table 2

Practice Activities

Questions	A lot	Enough	A little	Not at all
2. Do you think that the constant practice of pronunciation (drillings) helped you to improve this skill?	34%	49%	17%	0%
3. Did you like the use of dialogues in the classroom?	31%	40%	29%	0%
6. How useful was the use of the list of verbs in differentiating the pronunciation of -ed in regular verbs?	49%	43%	9%	0%

As an overall trend, Table 4 demonstrates that all the activities (repetition/drillings, dialogues, list of verbs) carried out during the intervention were helpful for students. The “list of verbs” appeared to be the most exciting and valuable, as 49% of them selected “a lot” expressing their preferences. Additionally, 34% and 31% of students asserted that “drillings” and “dialogues” were also useful for their pronunciation improvement.

Table 3*Teaching-Learning Sources*

Questions	A lot	Enough	A little	Not at all
1. Did you like the use of audios in class?	17%	60%	23%	0%
4. Did songs helped you to pronounce the ed- endings of regular verbs?	46%	37%	17%	0%
8. Do you think that the topics covered in class about holidays were relevant to your daily life?	37%	43%	17%	3%

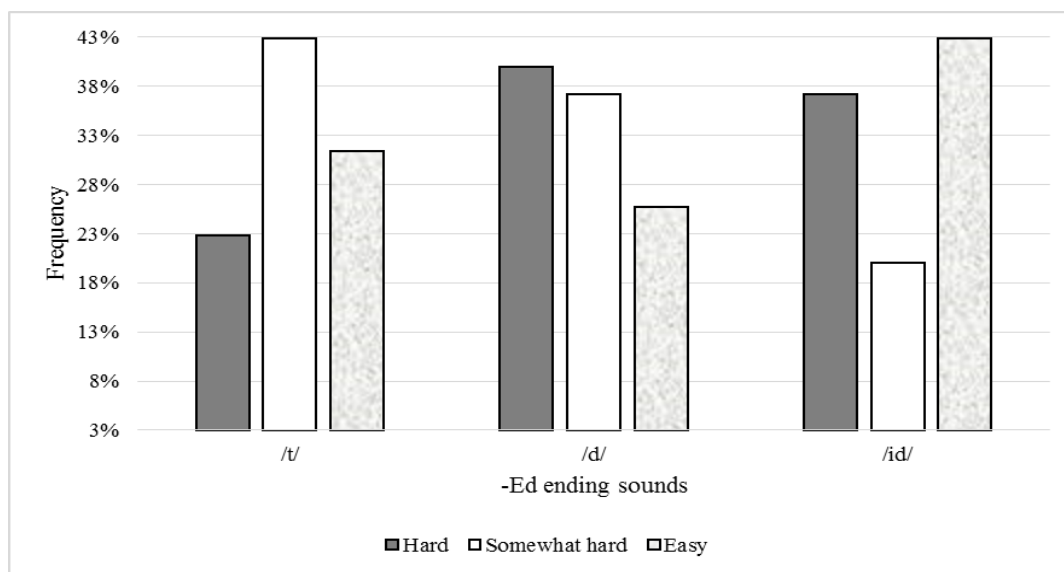
As shown in Table 5, the highest percentage of students (46%) answered that they liked “songs” “a lot”. Accordingly, songs seemed to be the most favorite teaching-learning source for students; whereas, audios were the least preferred since only 17% of students expressed that they liked them a lot. Similarly, the topics covered in classes were relevant to students’ daily life as 37% of them designated “a lot” for this question.

From the open-ended questions, students expressed their support for their selection by stating that songs were interesting as they relaxed and helped them to pay more attention to the classes. The repetition/drilling of the songs helped them to improve their pronunciation of single words and even long paragraphs. From the researcher’s field notes, students mentioned that they liked English songs even though they did not understand the lyrics. In contrast, a few participants felt frustrated with the songs. On the other hand, the researcher, as a participant observer, discovered that songs helped him to create a better classroom environment, and facilitated students’ pronunciation especially when connected speech was needed.

Similarly, students expressed that audios were useful because they learned the correct pronunciation of words. Furthermore, they expressed that listening to audios was a great activity as they could self-correct their pronunciation. However, students who selected “enough” or “a little” mentioned that it was hard for them to listen to the audios because their classmates were making noise. Furthermore, it seemed that the speed of the audios was too fast.

Figure 2

Level of Difficulty Regarding -ed Ending Sounds



As can be seen in Figure 2, 40% of students selected that the most complex sound to pronounce was the /d/ sound, whereas 43% of learners agreed that the easiest was the /id/ sound. This can be validated with the observations during the intervention and the pretest results. Accordingly, students presented problems pronouncing the /d/ sound, as in some verbs, they used to avoid the pronunciation of this consonant cluster since it was difficult for them. On the other hand, the /id/ sound was the most accessible for students, as this sound combination resembles sounds produced in some Spanish words like the verb “*comido*”. In fact, students used to pronounce the sound /id/ as a safe alternative for those verbs that they did not know the exact ending sound.

Table 4

Students’ Perceptions Towards Teacher’s Practices

	Excellent	Good	Regular	Bad
7. How useful were the lessons for differentiating the pronunciation of -ed in regular verbs with the sounds /t/ /d/ /id/?	74%	20%	6%	0%

As shown in Table 7, 74% of students considered that lessons were useful for them to differentiate the -ed ending sounds. Indeed, 74% of the learners classified the researcher’s practices as excellent. Thus, the results showed that the teacher’s assistance and execution of the activities planned for the

intervention were carried out efficiently to help students overcome their weaknesses in the pronunciation of -ed ending sounds in regular verbs.

Field notes and classroom observation findings

sub question 3: What are the teachers and students' perceptions about lesson study to improve the pronunciation of -ed endings of regular verbs?

The lesson study process can bring many benefits for teachers and students. This is why I decided to implement lesson study as a means for my professional development and to help learners improve their pronunciation skills. The lesson study process was carried out with the help of 4 collaborators composed by three novice teachers, and one experienced teacher, who contributed to this research with theoretical and practical knowledge for mastering and applying the theories behind lesson plans.

Thus, the five stages of lesson study (setting goals; planning the lesson; teaching, observing, and debriefing; revising and reteaching; reflecting and sharing results) were developed. In the stage of setting goals, I worked with the four collaborators on realistic goals for the enhancement of the pronunciation of night-graders. The different topics, such as past simple, present perfect, and the pronunciation skill were considered for a proper settlement of learning goals.

After that, in the stage for planning the lesson, the collaborators and I brainstormed the most suitable methods and teaching activities that can be used to improve the learners' pronunciation. Thus, songs, drillings, dialogues, and the Audacity program were selected along with other extra activities that could gain the students' interest. Consequently, lesson plans or research lessons were elaborated using the lesson study principles and the nine events of instruction proposed by Gagné.

In the teaching, observing, and debriefing stage, the collaborators observed my teaching practices. They collected information to share in the debriefing phase, along with suggestions they may use to refine the lesson plans. Thus, in this stage, the collaborators helped me to realize that there were some mistakes that I was making, like not using action verbs in the objective and not connecting those objectives to the assessment part of the lesson plans. As it is mentioned by Gagné et al. (1992), the learning objectives, activities, and assessments must be strongly related to each other. Finally, collaborators gave me some suggestions about the manner, the extent, and the order in which some activities were presented. All the

tips gave me more confidence to create purposeful practice activities considering the students' learning needs and interests.

As for revising and reteaching, in the fourth stage, I had to consider and include the suggestions made by my collaborators in the lesson plans. Therefore, changes in the objectives, activities, and assessments were done. For instance, on the topic of the pronunciation of the -ed ending sounds, I changed the assessment part, which was not aligned with the objective. In the assessment part, I described that students had to write and classify sounds and not pronounce them, which was the correct one. Therefore, the activities were changed as well. Thus, the students' reactions to these modifications made me realize that those changes were efficient. As a matter of fact, changing the topics to more interesting ones and providing rewards like candies and extra points for their participation helped me to create a more active classroom environment. For example, I changed the topic "Discoveries throughout history" to "My latest holiday" which appeared to be more interesting for students.

Last but not least, for the reflecting and sharing results stage, I developed this research work with all the information gathered and my perceptions about lesson study, which may help new researchers to carry out more effective investigations into lesson study.

To conclude, based on the classroom observations, field notes, and experiences gathered from the investigation, the researcher concluded that the execution of lesson study helped him grow professionally. The researcher gained some investigative skills through lesson study, gained more insight into classroom management as well as in lesson planning. Therefore, I improved the selection of activities to create more interactive and stress-free classroom environments. Furthermore, it helped me be more open regarding observations and recommendations of my teaching practices.

DISCUSSION

For the first sub question "How effective is the application of pronunciation strategies through lesson study to improve the pronunciation of -ed endings of regular verbs?", this study found that the effectiveness was visible on the four pronunciation components comprehensibility, intelligibility, word stress, and connected speech. Students' scores passed from ineffective pronunciation (3/10) in the pretest to good pronunciation (7/10) in the posttest. Moreover, the Wilcoxon test demonstrated that this

difference was statistically significant (p...). It is interesting to notice that the skill that students improved the most was “intelligibility”, thus moving from ineffective pronunciation to good pronunciation. Furthermore, the practice activities (drillings, dialogues, lists of verbs) in the lesson plans helped students improve the pronunciation of two sounds that were the hardest for them, the /d/ and /t/ sound. These results agree with Correa et al. (2020) and Rodríguez (2017), who stated that this is an actual problem for Hispanic learners, since the pronunciation of consonant clusters is hard for Spanish native speakers as they are not part of their pronunciation corpus of their mother tongue. However, one limitation that emerged from these results is that there was not a control group to emphasize the impact of the treatment of lesson study with the experimental group. For this reason, further work is required using a true experiment research method to fully establish this effect between two groups.

For the second sub question of this study “What are the most suitable pronunciation strategies through lesson study to improve the pronunciation of -ed endings of regular verbs?”, We can reflect that among the four strategies that were used for the development of the lesson plans; drillings, dialogues, Audacity program, and songs, the most suitable strategy was songs. As mentioned by Supeno (2018), and the results found in this study, students found songs as a motivating, interesting, and stress-free activity for pronunciation mastery. Furthermore, songs helped students get an actual approach to a native-like pronunciation, and improve relevant features of pronunciation like stress, intonation and connected speech.

On the other hand, one of the limitations that were found in the application of the strategies was the unavailability of technological tools for students’ individual use. The present study could not carry out the program Audacity as presented in the study developed by Benitez et al. (2020), where students recorded their voices and the teacher compared, analyzed, and provided feedback on students’ recordings. It was only used by the teacher to help students recognize and familiarize themselves with the English pronunciation. Notwithstanding, this deficiency was overcome by playing audios from Audacity which seemed to be beneficial for students’ recognition of sounds connection in connected speech. This is why further investigations are suggested on using the Audacity program to record students’ voices to provide individualized feedback.

Finally, for the last sub question “What are the teachers and students' perceptions about lesson study to improve the pronunciation of -ed endings of regular verbs?”, it was found that the lesson study model contributed to developing students' overall pronunciation skills as well as the teacher's practice. Thus, lesson study and upgraded lesson plans aligned to Gagné's nine events of instruction helped students expand their pronunciation skills and see learning as a long lifelong process. Moreover, the benefits mentioned by Wahman et al. (2020) and Stepanek et al. (2007), about lesson study were also seen in this investigation. Therefore, lesson study contributed to the teacher to be more receptive to new ideas and opinions, to become an enquirer, to develop problem-solving skills, and to be more aware of the students' learning progress.

CONCLUSIONS

Lesson study was advantageous for improving the four components of pronunciation comprehensibility, intelligibility, word stress, and connected speech. However, the skill that showed the most improvement was “intelligibility” since after the intervention students could pronounce the consonant clusters more accurately. On the other hand, the skill with little improvement was “word stress”, and “connected speech”.

As for the best activities to implement for pronunciation improvement of the -ed ending sounds, “songs” was the most favorite for students. The application of lesson plans with the use of songs helped the researcher to create a more interactive, interesting, and stress-free environment which was beneficial for students to get involved in a more active learning process.

When it comes to the novice teacher experiences, we can say that lesson study was beneficial as it guided the researcher to create more effective lesson plans with the aid of the nine events of instruction by Gagné. Thus, the researcher created lesson plans where the objectives, activities, and assessments had to be correlated to each other for the proper development of the classes and enhancement of the students' language skills.

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