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# Impacto del uso de Feedback Correctivo Oral en la producción oral de vocales del inglés por aprendientes chilenos en un ambiente educativo en línea

# (The impact of explicit Oral Corrective Feedback on the production of English vowels by Chilean learners in an online instructional setting)

Tesis para optar al grado de Magíster en Lingüística Aplicada

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## iii. ABSTRACT

Studies on second language acquisition have examined the effectiveness of different types of feedback on improving skills when learning an L2. Findings have shown a positive impact of direct and indirect types of feedback on learners' written and oral production, that is why conducting research on this topic has become more necessary so that a wider amount of information could be provided to learners and instructors to reach more accurate results in their teaching and learning processes. The objective of this study is to measure the impact of two types of delayed explicit feedback, explicit correction and metalinguistic feedback, on the pronunciation of English vowels by Chilean learners in an online instructional setting. The study was conducted in Chile during six weeks. 56 university students participated in the research. Participants were separated in three groups (CG: Control Group; EG1: Experimental Group 1; EG2: Experimental Group 2). By the end of the investigation, the two experimental groups improved their pronunciation of English vowels, being metalinguistic feedback group the one that showed greater improvement in comparison to the explicit correction group.

## 1 INTRODUCTION

In the language acquisition process learners develop abilities which are necessary for communication. Along the process, considering formal instruction, learners make mistakes when attempting to learn rules and concepts. In this case, teachers have the responsibility to correct those errors and provide feedback, so the learners understand their own learning process. Feedback can be given in two formats: written corrective feedback and oral corrective feedback. Corrective feedback might be influential if it is provided properly (Brookhart, 2008). In addition to this, Brown (2001) illustrated corrective feedback as an instant response to an inaccurate word, phrase or sentence which helps learners to identify and correct their errors. Hence, oral corrective feedback is an essential component that helps learners acquire successfully aural and oral skills.

Regarding the sounds present in the two languages involved in this study, English and Spanish show differences in their vowel inventory. Although a contrastive analysis is not the focus of the current research, it would be proper to mention that both languages show a difference in the number of vowel phonemes. Spanish has five monophthongs (Manzanares, 2002), whereas General American English has ten according to Paterson and Berney (1952) or 12 to Hillenbrand et al. (1995).

The main objective of this study is to determine the impact of two different types of explicit Oral Corrective Feedback (OCF) on the pronunciation of English vowels by Chilean learners in an online setting. A secondary objective is to establish whether any of these two types of explicit OCF might be more effective for the

improvement of the participants' pronunciation of the vowels considered in this study. To accomplish this purpose, this study was focused on a set of ten English vowels and the General American English accent was chosen as the pattern to follow when pronouncing the vowels. To better understand some factors that might influence the pronunciation of L2 learners who have Spanish as their L1, the impact of different types of oral corrective feedback was measured using some experimental tasks and tests in two groups.

**Chapter 1**

## 2   STATE OF THE ART

In this section, some key issues related to corrective feedback will be presented. Firstly, a brief background of perception and production studies will be discussed. Secondly, theoretical issues and feedback-related concepts will be reviewed. Finally, written, and oral feedback-related studies will be revised in order to contextualize the current research conducted in Chile to date.

### 2.1.   L2 speech perception and production

It is well known that speech perception and production are difficult to master when learning a second language (L2), especially for late learners (Flege et at., 2003). Although this link between perception and production has been broadly discussed, different studies have shown dissimilar conclusions regarding how closely related these two processes are when learning a second language.

The benefit of perceptual training has been widely explored. Perceptual training studies have shown an improvement in perception and production of L2 speech after a period of perceptual training even in the absence of production training (Iverson & Evans, 2007; Iverson & Evans, 2009; Lin, 2014; Shinohara and Iverson, 2018; Carlet, 2017; Pereira Reyes & Hazan, 2021). This idea is in line with the findings in previous studies that indicate that the knowledge gained during perceptual learning might be transferred to the production domain (Nygaard et al.,

1992; Bradlow, Pisoni et al., 1997). However, some authors suggest that the relation between perception and production is not direct, and that both speech processes engage different mechanisms.

Despite the existence of improvement in perception and oral production in the L2 when using perceptual training, regarding the effect of this type of training on production, some studies have measured the production of English vowels and/or consonants suggesting that there is no direct relation between perception and production after training (Alshangiti & Evans, 2014; Hwang & Lee, 2015).

To compare results of production training, Alshangiti and Evans (2014) investigated the perception and production of English vowels by native Arabic learners. Participants were assigned to three training programs: Production Training (PT), High Variability Phonetic Training (HVPT) and Hybrid Training Program (HTP). Each of the programs had five sessions of approximately 40 minutes. The results showed that training seems to be domain specific. Production training led to improvements in production rated by native speakers of English but not in perception, while perception training led to improvements in perception but not in production. Another finding in this study suggested that participants from the HTP group showed improvements in both production and perception, indicating that a small amount of training in production seems to be sufficient to produce positive effects in the improvement of the production of English vowels when using this type of training.

In the same line, Hwang and Lee (2015) studied the effects of perceptual training on the production of English vowels and consonants before and after HVPT in 60 Korean learners of English. The participants were trained to identify different

vowels and consonants in 18 sessions of online perceptual training (15 minutes each approximately). Six native speakers of English who had a General American English accent took part as listeners. Although learners improved the pronunciation of some sounds, results showed that the effect of perceptual training on oral production was not significant and that the improvement in the two domains was not related.

The authors suggest that these results may be dependent on the learning environment itself, as well as learners' motivation for learning. These studies are in line with the results displayed in a study conducted by Almbark (2010). The study was aimed at examining the productions of L2 learners of English who had learnt English for at least ten years. For the study, the perceptual assimilation model (PAM) was used to predict the productions of three standard southern British English vowel contrasts by Syrian Arabic learners. The results showed that accurate perception of L2 contrast does not necessarily lead to accurate production of the contrasts analyzed in the study. These studies contribute to the discussion of the link between perception and production.

Different L1 vowel systems have been used to investigate the interference of those categories with new vowel learning (Iverson & Evans, 2007; 2009; Bundgaard-Nielsen et al., 2011). Iverson and Evans (2007) explored these differences between two groups of learners (17 Spanish and 16 German). After five sessions of high-variability auditory training for English vowels, results showed that Germans improved more than Spanish speakers in terms of their identification accuracy for English vowels. A subsequent experiment demonstrated that Spanish listeners were able to improve as much as the German subjects after an additional amount of 10 training sessions. The researchers suggested that a larger vowel inventory and a

greater sensitivity to category differences facilitate the learning of new sounds. Identification improvement by applying existing categories to L2 phonemes was also suggested.

In another study conducted by Carlet (2017), two HVPT methods were compared to improve perception and production of a set of English vowels. The training methods were Identification (ID) and categorical Discrimination (DIS). Participants were 100 bilingual Catalan/Spanish learners of English divided in four groups. After a five-week training period, results showed that the ID group outperformed the DIS group on trained vowels perception and the DIS group showed a significant improvement in the perception of untrained L2 sounds. Moreover, the ID group significantly improved their production of trained sounds, which suggests that pronunciation improvement might occur as a result of an identification perceptual training, even in the absence of production training.

Regarding the effect of perceptual training, Pereira and Hazan (2021) compared the effect of three different English vowel perceptual training modalities (audio, audiovisual, and video) on vowel identification, and investigated the impact on the effectiveness of computer-based phonetic training to improve L2 vowel identification accuracy. Participants were 47 (15 males and 32 females) L2 beginner learners of English from an English teaching program who completed their first semester at a Chilean University. They took part in five 45 to 60-minute sessions of HVPT in which 225 tokens were presented in the three perceptual training modalities. Pretest and posttests were used to measure the participants' improvements in their perception and production of English vowels. Results showed that regardless of the training modality, participants improved their perception and

production of English vowels. Although individual differences in perception and production of L2 vowels were found, results after training sessions indicated that participants' level of L2 proficiency had little or no relation with their English vowels' identification ability.

These results in the studies above are in line with another study conducted by Shinohara and Iverson (2017) in which it was suggested that identification and discrimination training increase accuracy of speakers' perception and production of English sounds in similar ways. The study recruited adult Japanese speakers and compared traditional identification with discrimination training of English /r/ and /l/ contrast to estimate the effectiveness of discrimination training, and whether different types of focused attention could combine to generate a greater increase in learning. After ten sessions of identification and discrimination training, and pre/mid/posttests, results showed that although increased accuracy of perception and production of English /r/ and /l/ was found, there was little benefit when using the two training methods in combination. The researchers also suggested that identification and discrimination training have similar impact in second-language learners when high variability is included.

Studies on L2 speech perception training have also been conducted in connection to corrective feedback (CF). Regarding this, Lee and Lyster (2015), investigated the effects of different types of CF during speech perception training. In this study, 100 Korean learners of English as L2 (73 females and 27 males), with a mean age of 30.3 years, took part in eight computer-assisted perception training sessions. Two minimal pairs of English vowels, /i/–/ɪ/ and /ɛ/–/æ/, were studied. The participants were divided in four groups, each receiving a different type of CF: three

auditory CF and one visual CF. A control group did not receive CF. Results showed that, in comparison to control group, the groups that received CF improved significantly in the perception of trained words over untrained words. It was also found that the participants' production accuracy benefited from the perception training depended on the CF strategy. The researchers suggested that high repetition of input during training may influence learners' performance. Unfortunately, there is a small number of studies in which there was a control of the number of repetitions and that showed results similar to ours. Furthermore, by considering the perception accuracy data, the current study showed that improvement in perception accuracy was a significant predictor of improvement in production accuracy.

## 2.2. Corrective Feedback (CF)

Feedback has been considered a means of fostering and ensuring linguistic accuracy within different approaches to language teaching (Ellis, 2009b). CF has been extensively studied in the area of L2 learning, especially in English as an L2. This kind of feedback can be presented in oral or written form depending on the purpose of their application (Book, 1985). There has been a longstanding tradition of studies focusing on written corrective feedback (WCF) (Evans et al., 2010; Ferris et al., 2013) and less on the use of oral corrective feedback (OCF). The current study aims at bridging this gap by studying the use of OCF for the improvement of pronunciation of English vowels in an online learning context.

## 2.3. Feedback Timing

The optimal feedback timing has been broadly discussed in SLA studies (Nakata, 2015; Li et al., 2016; Henderson et al., 2019). Skinner (1953) was one of the first who claimed that feedback represents a device that corrects errors and reinforces correct behaviors.

Current research has continued studying the differences between the use of feedback timing strategies. In recent research, Fu and Li (2020) explored the differential effects of immediate and delayed WCF on the acquisition of English past tense structures in 145 seventh-grader learners. The type of CF given was a hybrid technique in the form of a prompt followed by recast. After three weeks of treatment, the impact of feedback was measured using an untimed grammaticality judgment test and an elicited imitation test. The results showed that immediate CF was more facilitative of L2 development than delayed CF. This is in line with previous research that also claimed that learners would benefit from immediate CF (Carroll & Swain, 1993; Ellis et al., 2006; Sheen, 2006). This study considered only written forms, and further practice after any feedback given was not declared.

Considering OCF, few studies have investigated delayed CF (Nassaji and Kartchava, 2017). Most research on OCF has been conducted on types of CF provided immediately following errors. However, investigating delayed OCF has been shown as an emerging field of research in the last few years (Quinn & Nakata, 2017; Iwaki et al., 2017). Regarding this, Maftoon et al., (2005) compared the effect of implicit focus on form through corrective recast with the effect of delayed-explicit focus on form. 60 intermediate learners of English divided in two groups participated in the study. Group one was provided with corrective recast, while group 2 with delayed-explicit focus on form. After 12 treatment sessions, the data showed that

implicit focus on form through immediate recast led to higher accuracy in oral production in comparison to delayed-explicit focus on form. This result differs from early research that suggests that for forms in particular contexts delayed corrective feedback is more effective (Lyster & Ranta, 1997; Oliver and Mackey, 2003).

In the current study, delayed OCF in the form of metalinguistic feedback and explicit correction will be used. This, considering online sessions format due to COVID-19.

## 2.4. Oral Corrective Feedback (OCF)

In several studies, authors have provided different definitions for OCF as a concept. Brown (2001) mentioned OCF as an instant response to an inaccurate word, phrase or sentence which helps leaners to identify and correct their errors. In 2016, Suryoputro and Amaliah defined OCF as the process of giving correction to learners' errors in verbal production which can be conveyed by the teacher or by the learners themselves. Additionally, Hernández and Reyes (2012) suggested that OCF is a reaction of the teacher which alters or requires development of the learners' utterance, while Calsiyao (2015) stated that OCF may be considered a way of offering input to learners which may lead to modified output. Most of these different definitions present a model in which an interlocutor corrects or guides the change of the other person's oral production.

Research on OCF has been conducted on different fields of L2 learning as grammar, syntax, speech perception or pronunciation (Fan, 2019; Aranguiz & Quintanilla, 2016; Safari, 2013). Additionally, other studies have investigated the attitude of learners in relation to different types of OCF (Yoshida, 2008; Ölmezer-

Öztürk & Öztürk, 2016) or the preferences of teachers for certain types of OCF in instructional contexts (Argüelles et al., 2019; Baker & Burri, 2016; Sepehrinia et al., 2020). In the current study, the objective will be to determine the impact of two different types of explicit OCF on the pronunciation of a set of English vowels, and to establish whether any of these strategies is more effective for the improvement of vowels.

## 2.5.    Types of oral corrective feedback (OCF)

Several studies on OCF have focused on the different types of OCF. Lyster and Ranta (1997) identified six types of OCF. Their taxonomy of OCF has been the most used to classify the different types of interactions between teachers and learners. These interactions are described as types of OCF, and listed as explicit correction, recast, clarification request, metalinguistic feedback, repetition, and combination. These types of OCF are used to correct erroneous utterances produced by learners.

Based on this taxonomy, some authors have studied the frequency of different types of OCF and have described a larger number of specific types of feedback in comparison to the taxonomy cited above. From classroom observation, feedback types have been classified as explicit correction, recast, clarification request, repetition of questions, repetition of learners' errors, elicitation with questions, support with examples, elicitation with encouragements, explanation about language rules, explanation about meaning, elicitation for correction, direct denial, and explicit agreement (Fan, 2019). Reformulations and prompts were also added as possible strategies to provide OCF (Ellis & Sheen, 2011). This is in line with previous studies

that included other different types of implicit and explicit CF (Lyster & Ranta, 1997; Ellis, 2009b; Lyster & Saito, 2010).

A brief explanation on some of the most used types of OCF is presented below.

### 2.5.a. Explicit correction

This type of OCF is concerned with the direct correction of any erroneous production. The learner is shown their incorrect utterance and is given a correction for it. Lyster and Ranta (1997) considered explicit correction as providing the correct form of an error and clearly indicating what has been said incorrectly. In OCF research, explicit correction has been less frequently studied in comparison to other used types of OCF (e.g., recast or elicitation). Some of the first approaches to explore the use of this technique was the study conducted by Lyster (1998) in which explicit correction was observed as one of the three types of OCF used by teachers in four French immersion classrooms. The results in this study were similar to the findings provided by Lyster and Ranta, (1997) in which explicit correction led to uptake in only 50% of the times it was used. Although this early study showed a low percentage of effectiveness in the use of this type of OCF, the use of explicit correction was presented in other subsequent studies due to its frequency in L2 classrooms settings.

Recent studies have shown that explicit correction continues being one of the most prevalent types of OCF to correct learners' oral production errors in instructional settings (Aranguiz & Quintanilla, 2016; Suryoputro & Amaliah, 2016; Sepehrinia &

Mehdizadeh, 2018; Bao, 2019) despite the lack of evidence indicating its effectiveness.

In Aranguiz and Quintanilla's (2016) study, five teachers were audio-recorded in two lessons of 90 minutes each. Learners from 5th to 8th grade were the subjects of study and received feedback from their teachers. The study was aimed at comprehending teachers' use of corrective feedback strategies and their effectiveness in learners' performance. Results showed that teachers use corrective feedback to correct pronunciation, vocabulary, grammatical and content errors. Findings also showed that teachers tended to use explicit correction as the most frequent strategy, and that the most effective types of OCF were repetition, elicitation, clarification request and metalinguistic feedback.

Concerning the nature of OCF and the relation between teachers' beliefs and practices, Bao (2019) studied the nature of OCF and the relationship between teachers' beliefs about CF and their actual practices. The participants were Mandarin Chinese as L2 learners from Africa and Arab nations. Participating teachers were eight native speakers of Mandarin Chinese. After data was collected from classroom observation and questionnaires, results indicated that explicit correction and recasts are the most frequently used feedback types. Findings also suggested that teachers share common beliefs on the importance of providing feedback, but different opinions on when to provide it, what to correct, and which types of OCF are the most commonly used. Although there are some studies that have shown similar results in the frequency and effectiveness of explicit correction (Öztürk, 2016), more studies on OCF using explicit correction for errors in oral production are needed to expand these findings.

Regarding teachers and learners' preferences, some studies have claimed that the use of explicit correction within instructional contexts is highly appreciated (Roothooft & Breeze, 2016; Ünsal Şakiroğlu, 2020). This positive perception may exist due to the opportunity learners have to repeat the correct model provided by teachers and consequently improve pronunciation.

### 2.5.b. Recast

According to Russell (2009), recast is the repetition of a learner's incorrect utterance by a teacher or other more knowledgeable peer replacing the error with the correct form. Recast is generally an implicit type of OCF strategy due to the lack of phrases such as "you mean", "use this word" or "you should say" (Ölmezer-Öztürk & Öztürk, 2016). Lyster and Ranta (1997), defined recast as to involve the teacher's reformulation of all or part of a student's utterance, excluding the error. Some strategies considered as recasts are reformulations, paraphrasing, repetition with change, and repetition with change and emphasis (Chaudron, 1977).

Regarding the frequency of OCF within a class, studies have come to different conclusions, having not only one type of feedback as the most used type when learning English as a second language. Some authors have indicated that recast is one of the most used types of feedback in instructional contexts (Öztürk, 2016; Sheen, 2004; Demir & Özmen, 2017), similarly to what Lyster and Ranta (1997) had suggested in their study.

The study conducted by Sheen (2004) focused on the similarities and differences in teachers' corrective feedback and learners' uptake across instructional settings. Four communicative classroom settings were examined (French

Immersion, Canda ESL, New Zealand ESL and Korean EFL), three of which come from existing data taken from previous research published in major SLA journals, and one of which is new. All settings consisted of lessons that were content-based or entirely meaning/communication-based. After comparing the data, the findings suggest that recast was the most frequent feedback type in all four contexts and that the extent to which recast led to learners' uptake and repair may be larger when the focus of recast is more salient.

Concerning the effectiveness of recast in the spoken form, this type of OCF has been presented as a key to draw learners' attention to accurate pronunciation in communicative settings, which may have a significant impact on the learners' L2 phonological system (Saito & Lyster, 2012). Recast has been shown beneficial in contexts where L2 pronunciation errors have been the target of the correction, and in settings where there have been many instances of recasts with the consequent learners' output to this feedback strategy (Li, 2014; Saito, 2015).

Concerning the use of recast for other types of errors, some classroom studies have shown that recasts may not be so effective when they target morphosyntactic errors in the oral production (Lyster & Saito, 2010). Some of these studies claimed that recast may not be the most effective type of OCF when compared to other types (prompts, clarification requests, elicitation, metalinguistic feedback, explicit correction, and repetition of error) due to the ambiguity created when providing recast or to the difficulty learners have in noticing this type of feedback (Lyster & Ranta, 1997; Lyster, 2004). In the same study conducted by Lyster and Ranta (1997), the most effective types of feedback were elicitation,

metalinguistic feedback, clarification request, and repetition. The authors found that these types of OCF eliminated the ambiguity by allowing learners to self-repair.

Recast has been suggested to be a useful corrective strategy, however, some studies claimed that it is context dependent. More studies in different contexts are needed for a better understanding of this type of feedback. In the current study recast will be used to give feedback on learner's pronunciation during training sessions. Additionally, two other types of explicit feedback will be used to provide information on learners' individual pronunciation errors.

### 2.5.c. Metalinguistic Feedback

Metalinguistic feedback is a type of CF which provides comments, information, or questions related to the well-formedness of learners' production in written or oral form (Lyster & Ranta, 1997). Boudraa (2016) suggested that the purpose of oral corrective feedback is to aid learners to find the right form of an utterance. Metalinguistic feedback is placed within the explicit types of feedback and has been suggested as one of the most predominant strategies in many studies that involve oral production error correction, and classroom observation (Rassaei et al., 2012; Roothooft & Breeze, 2016; Yoshida, 2008).

Unlike explicit correction, metalinguistic feedback has been described as an effective type of OCF for learners with different levels of proficiency (Rassaei et al., 2012; Li, 2014; Aranguiz & Quintanilla, 2016; Tamayo, 2017). Regarding effectiveness, some studies have claimed that this explicit CF strategy allows learners-generated repair more successfully. This is in line with previous findings which indicated that self-repair led to uptake, which corresponds to the learner's

utterance that immediately follows the teacher's feedback. This uptake constitutes a reaction to the teacher's intention to draw attention to some aspects of the learner's initial utterance (Lyster & Ranta, 1997).

Mourssi (2012) examined the effectiveness and role of metalinguistic feedback in encouraging and preparing L2 learners to improve their writing and their level of accuracy and fluency in SLA. One group of 30 Arab learners of English with ages between 18 and 20 participated in the research. They showed a level of proficiency in English that went from pre-intermediate to upper-intermediate. The participants enrolled for a semester in a communicative grammar language teaching approach course which consisted of four hours per week. Samples of learners' mistakes in written form were analyzed. The results indicated that metalinguistic feedback in the form of error/contrastive analyses may be an effective way to help learners improve their accuracy and fluency. The researcher suggested that the use of metalinguistic feedback made the participants retain the forms discussed communicatively with their teacher more that when target-like forms are given without any type of feedback. In the current study, this metalinguistic feedback strategy will be used with one the experimental groups.

### 2.5.d. Clarification Request

Clarification request indicates that the utterance of the student is not understood by the teacher or that the utterance is ill-formed in some way that it needs to be reformulated (Lyster & Ranta, 1997). This type of OCF refers to problems in comprehensibility or accuracy. This type of feedback contains phrases like, "can you

repeat", "excuse me" or "sorry" which indicate that a communication error has occurred (Tasdemir & Arsalam, 2018).

Our literature review did not reveal any studies in which clarification requests are used as an OCF and then their impact analyzed. Nevertheless, many of the studies that explore teachers and learners' preference or beliefs before OCF provide information about clarification request. In the study carried out by Moradkhani and Goodarzi (2020), which aim was to compare the stated beliefs and classroom practices of three EFL teachers about OCF, clarification request was ranked least in the three cases, showing only a 3%, 7,5%, and 8% of frequency for each of the participants. The researcher stated that participants defined clarification request as not very effective and that it did not necessarily brought learning of the correct form. Moreover, this type of feedback seemed not to be appealing enough to be used as moves within the classroom.

### 2.5.e. Elicitation

Elicitation refers to a strategy in which the correct structure is elicited by using different techniques, such as incomplete sentences, questions or reformulation of sentences. This type of feedback refers to at least three techniques that teachers use to prompt learners to produce accurate utterances (Lyster & Ranta, 1997). The teachers may elicit completion by pausing their own utterance to allow the learner to fill in the blanks, ask questions that exclude metalinguistic comments or repeat the learners' error.

### 2.5.f. Repetition

In this type of feedback, what is mostly performed by teachers is adjusting the intonation of an error produced by learners to highlight what should be corrected (Lyster & Ranta, 1997). This could be done as a complete repetition of a sentences or the repetition of only the section where the error was made.

## 2.6. Preference on types of OCF

Concerning the preference of teachers and learners on types of OCF, some studies have used surveys and questionaries to provide information about how positively oral correction strategies are perceived. These studies showed metalinguistic feedback as one of the most well-accepted OCF types considering learners' attitudes and feelings (Roothooft & Breeze, 2016), and teachers' techniques to make learners think about pronunciation errors and encourage self-correction (Yoshida, 2008). It is important to mention that this preference was shown regardless of learners' age or level of proficiency.

## 2.7. CF Studies in Chile

Research in the area of CF in Chile has been focused mainly on the use of CF in the written form (WCF) to promote learning of lexical items, spelling, and grammatical structures (Muñoz & Ferreira, 2017; Ferreira, 2017; Saavedra & Campos, 2018). Regarding OCF, there is little evidence on recent research in comparison to written corrective feedback, and the studies that have investigated OCF related issues have focused mainly on learners' preferences, and perception of OCF given by teachers rather than effectiveness, frequency, or types of these strategies used in instructional settings. Contexts among the studies have also been

different (university, reschooling program, and public schools' learners).

## 2.8. Written Corrective Feedback studies in Chile

Regarding WCF, a study conducted by Muñoz and Ferreira (2017), examined two different strategies of indirect WCF, indirect with indication and localization, and indirect with indication, localization and metalinguistic explanation. The objectives of the research consisted in examining the effectiveness of these two different types WCF on English comparative adjectives and finding more empirical evidence in learning contexts. 24 primary school learners participated in the study. They had a beginner level of proficiency in English as a foreign language and were divided into three groups: G1 (experimental group 1), G2 (experimental group 2), and G0 (control group). After eight sessions in which a pretest, treatment, a posttest, and a delayed posttest were applied, results showed that both types of feedback improve the accurate use of the target form. Indirect WCF with indication and localization was the most effective strategy.

Another study on WCF carried out by Saavedra and Campos (2018), was aimed at studying the impact of different types of indirect WCF on linguistic accuracy in five different categories of grammar and spelling mistakes and the perception of the participants towards the types of feedback considered in the study. These types of feedback were coding, brief grammatical explanation, and underlining. 60 first-year learners of an English teaching program participated in the study. They were divided in three experimental groups. No control group was used in the study. After a semester of receiving the three types of focused indirect WCF, results indicated that two linguistic categories improved significantly in terms of accuracy, and there

are differences among types of feedback. These differences were not clearly specified. Giving target and repetitive feedback on specific categories was the only conclusion related to accuracy improvement. Participants valued the use of feedback according to the results taken from a final focus group activity.

A study carried out by Ortiz, Fuica and Sáez (2018) focused on the impact of indirect metalinguistic corrective feedback on English grammar acquisition. The study was conducted in a Chilean university and had participants of an English as a foreign language teaching program. The study followed a quasi-experimental design with a sample of 20 third-year program. The study was divided in three stages: a pretest, a three-month treatment program, and a posttest by the end of the treatment. For all stages, the sample group was asked to write four short argumentative essays for which they received indirect metalinguistic corrective feedback for each of their grammatical errors observed. The results showed that the number of grammatical errors was smaller after treatment. This reduction of grammatical errors was considered to be statistically significant at the end of the study. Thus, confirming the effectiveness of this type of feedback.

Although all studies mentioned were aimed at studying different objectives, and that Saavedra and Campos' (2018) study was not conclusive in the differences between the types of feedback used in the research, all of these studies showed improvement after the use of WCF. The studies cited are just a small sample of what has been done in the area, but as the focus of the current study is on OCF, they were presented to contextualized what has been done using WCF in the area of second language acquisition (SLA).

### 2.9. OCF Corrective Feedback studies in Chile

### 2.9.a. Learners' perception on OCF

Considering Chilean learners' perception of OCF provided by teachers, it has been stated that, in general, learners have a positive perception of the use of OCF and teachers' interventions when pronunciation errors are detected (Calisto-Miranda & Ortiz-Navarrete, 2019; Gutiérrez et al., 2021). Calisto-Miranda and Ortiz-Navarrete (2019) analyzed the behavior and perception towards oral feedback of a group of 28 learners from a reschooling program. Learners were provided with pronunciation strategies during three treatment sessions. To describe the learners' perception towards feedback and its effect on their learning process, a field note, and a semi-structured interview were used to collect data. The results showed that learners felt more comfortable when performing oral activities due to the practice and repetition during the oral feedback treatment. However, given that the type of oral feedback used is not declared by the authors, it is difficult to draw further conclusions on the effectiveness of a particular type of OCF used in the study.

In line with Calisto-Miranda and Ortiz-Navarrete's (2019) research, Gutiérrez et al. (2021) conducted a study to identify the perception of oral corrective feedback of learners from an EFL teaching program. The study presented a mixed design with qualitative approach. Two instruments were used to collect data: a questionnaire and a focus group. 68 learners from second to fourth year took the questionnaire. The focus group was applied to nine learners from second to fourth year. The results indicated that there was a positive perception regarding OCF received from teachers, which led to benefit in the learners' learning process and improving language skills. Regarding preference, the same study suggested that metalinguistic

feedback, recast, and explicit correction were the best evaluated by learners. One of the reasons given to support these preferences was the benefit these types of OCF bring to learners' learning process and language skills improvement. Although these results may seem interesting regarding the use of different types of OCF in a classroom context, they need to be taken with caution, since the study provides only self-report information on the data included in the findings.

Another study conducted by Orellana and Ortiz (2020) had the purpose of analyzing the perception on OCF in a third year high-school learners' group in Concepción, Chile. The research focused on pronunciation errors. To achieve the purpose of the research, a qualitative study was used in a case study. 18 learners participated in a semi-structured interview (8 male and 10 female). Before any interview was carried out the group was provided with information about OCF strategies models and keywords that were going to be used in class. All interviews were audio recorded and transcribed for further analysis. The results showed that the participants considered the use of OCF as beneficial for their pronunciation. Implicit correction, and more specifically metalinguistic feedback, was the most preferred among the participants. Moreover, the participants found immediate corrective feedback as the most suitable technique. Although the use of implicit correction and metalinguistic feedback was shown beneficial, the findings in this study should be confirmed in further investigations in which a larger number of participants show the same types of OCF as the favorite and most suitable types to be applied.

## 2.9.b. Types of OCF: frequency and effectiveness

Unfortunately, there are few studies on the frequency or effectiveness of certain types of OCF strategies or on the specific contrast of the use of some types of OCF presented in previous studies. Although there are comments about frequency and effectiveness in the studies already conducted, findings are not conclusive in the use of OCF strategies.

One of the few studies concerning frequency and effectiveness of OCF was carried out by Aranguiz and Quintanilla (2016). This descriptive non-experimental study was aimed at comprehending Chilean teachers' use of corrective feedback strategies and their effectiveness in learners' performance. Data was collected form a corpus of classroom interactions that included 10 transcriptions of EFL lessons, having a total of 15 hours approximately of audio-recorded lessons. Five public schools' teachers with a master's degree in TESOL (Teaching English to Speaker of Other Languages) participated in the study. The researchers suggested that school teachers tend to use explicit correction as one of the most frequent types of OCF when compared to the other types presented by Lyster and Ranta's (1997) taxonomy. The study claimed that explicit correction was mainly selected by teachers because it gave the chance to provide learners (5th to 8th grade) with a low level of English proficiency with the correct answer or with a clear explanation of the type of error that was made. The same study indicated that the most effective types of OCF were repetition, metalinguistic feedback, and clarification requests, and that recast, translation and explicit correction were less effective.

Another study conducted by González, Marín, Méndez and Saavedra (2016) had the purpose of investigating the use between two types of OCF strategies and their impact in learners' accuracy of the pronunciation of regular verbs. 23

participants from a high school in Concepción, Chile, took part in the study, being divided into three groups (control group "G0", explicit group "G1", and implicit group "G2"). The two types of OCF strategies provided to G1 and G2 were metalinguistic feedback and recast respectively. After a four-week programme, results showed that OCF improved learners' accuracy in the pronunciation of regular verbs endings. The most effective type of OCF strategy was explicit corrective feedback (metalinguistic feedback), with a 95% of improvement after the posttest. Implicit corrective feedback (recast) was also shown beneficial with a 54.8% of improvement in the posttest. It would be convenient to continue conducting studies following this line of investigation having a larger number of participants. This would give another perspective of the results given in this research.

A third study conducted by Orrego, Singer, Úbeda and Yáñez (2019) was aimed at exploring the learners' and teachers' perception towards corrective feedback knowledge and the frequency of use of these corrective feedback strategies. 149 learners and 6 teachers of an English teaching program from a Chilean university participated in this study. A survey and a semi structured interview in focus groups were used to collect data. The results regarding frequency showed that 67% of the teachers involved in the study used some types of OCF. Of those teachers, 100% of them used immediate OCF strategies, while 19,5% used delayed OCF strategies. It is important to mention that although all learners in the study recognized the use of OCF strategies, they had no information about which types of feedback were used by the teachers. These results may not be conclusive due to the ambiguity of the specific types of feedback used in the study. Nonetheless, these general results may be useful to conduct more detailed research on types of

feedback.

In general, findings in Chilean studies on OCF may not be conclusive due to the very small number found. More research in the area is needed. The current study aims at contributing to bridge this gap and providing more information to the discussion on the effectiveness of the use of some types of oral corrective feedback within instructional settings.

## 2.10. Language acquisition in online contexts

The pandemic did not stop educational processes and different tools were to be applied to acquire a second language. Studies on this topic were conducted during the emergency caused by Covid-19 (Nenakhova, 2021; Christiani, 2022; González-Lloret et al., 2021), and more research is surely going to be introduced in the following years. Digital platforms and new teaching techniques came to transform usual lessons settings and modify learning constructs.

A study carried out by Klimova (2021) analyzed some language learning aspects in a course of practical English through a questionnaire survey focused on five variables. 26 participants answered ten open questions about language skills, learning materials, students' motivation to study online, preparedness for online teaching and learning, and effectiveness of foreign online teaching. Findings showed that listening comprehension and speaking were the skills the participants wanted to develop the most. Pronunciation, vocabulary, and grammar followed as a second group of interest. The study also suggested that participants preferred printed materials, because they were considered to be more suitable for taking notes and retaining new knowledge by highlighting important information. It is interesting to

mention that although participants mentioned to feel motivated by studying online, they considered distant online language lessons effective, but not as effective as face-to-face classes.

Another research conducted by Kandati and Tatipang (2021) studied the effects of virtual teaching when acquiring a second language during Covid-19 conditions. The qualitative and quantitative study used a questionnaire to ask 77 third-year students their beliefs about the potential of virtual teaching on online lessons. The results suggested that virtual classrooms presented difficulties to participants due to poor connectivity or poor network quality. Moreover, participants indicated that it was hard to pay attention, which made virtual teaching only useful in certain situations. Even though the findings in this study showed a positive attitude of the participants in online lessons, virtual teaching when acquiring a second language was considered to have some disadvantages to learn an L2, especially due to the inexperience in the use of new technology.

Including data about general perception of online lessons seems to be adequate to understand the context in which the current research was carried out.

**CHAPTER 2**

## 3  METHOD

In this chapter, the methodology and design of the study will be addressed. To achieve this purpose, the problem statement, research questions and objectives will be presented.

### 3.1. Problem statement.

Despite OCF has been broadly studied in connection with grammar and vocabulary, the use of OCF for pronunciation improvement has not been explored as much as the two former areas. Moreover, there is a large number of studies that have investigated the use of corrective feedback on its written form more than in its oral form. There seems to be a gap in the field of studying error correction strategies in L2 oral production within an instructional context.

OCF represents a great opportunity for research to measure the impact of any type of OCF on Chilean learners' pronunciation of English vowels. The current study aims at determining the effectiveness of some types of OCF in an online setting, which is a new learning context that has become widely spread due to the pandemic. Findings of the current study may lead to future research on the area.

### 3.2. Research questions

This study aims at answering the following research questions:

a.      What is the impact of different types of explicit OCF on the pronunciation of

English vowels of L2 learners?

b.      What type of explicit OCF can be more effective for the improvement of the pronunciation of English vowels by L2 learners?

### 3.3. Objectives

The main objective of this study is:

a.      To determine the impact of two different types of explicit delayed OCF and level of proficiency on the pronunciation of English vowels (/ɪ/, /iː/, /ʊ/, /uː/, /ɜː/, /e/, /æ/, /ʌ/, /ɑː/ and /ɔː/) by Chilean L2 learners in the context of online lessons.

The specific objective of this research is:

a.      To establish whether there is a difference in the effectiveness of the use of explicit correction and metalinguistic feedback on the pronunciation of English vowels by Chilean L2 learners in the context of online lessons.

b.      To establish whether the learners' level of proficiency is a factor that determines the effectiveness of one type of OCF over the other.

### 3.4. Methodology

A qualitative quasi-experimental study was conducted at a Chilean university during the second semester of 2021.

#### 3.4.a. Participants

All participants were undergraduate university students who were registered in a basic general English course at their universities. They had Spanish as L1 and their estimated proficiency level of English according to the Common European

Framework for Languages (Council of Europe, 2020) went from A1 to C1. A proficiency test (PT) to measure a general level of proficiency was given to all participants. Participants had four English lessons of 45 minutes per week, and all their other classes were given in Spanish.

A total of 56 participants were recruited. They belonged to different classes. In each group, participants were randomly assigned to the Experimental Group 1 (EG1) and Experimental group 2 (EG2). The Control Group (CG) was completed one week later due to difficulties associated to the pandemic such as communication only by emails or activities from their own English lessons.

CG: 18 participants took part as the control group. This means participants took the pretest and posttest receiving no feedback after they mispronounced one of the vowels considered for this study.

EG1: Experimental Group 1 was provided with explicit correction type of feedback. This means participants were given the correct form of an error whenever they mispronounced one of the vowels considered for this study.

EG2: Experimental Group 2 was provided with metalinguistic type of feedback. This means participants were given comments, information, or questions related to the well-formedness of their oral production whenever they mispronounced one of the vowels considered for the study.

**Table 1**

Number of participants in each group (CG, EG1, EG2)

| Group | Pretest | Posttest |
| --- | --- | --- |

| | | |
|---|---|---|
| CG | 20 participants | 19 participants |
| EG1 | 20 participants | 19 participants |
| EG2 | 20 participants | 18 participants |

At the beginning of the study, 60 participants accepted the invitation to be part of the research. For each of the groups 20 participants were assigned (EG1: 20; EG2: 20; CG: 20). By the end of the treatment sessions, 56 participants continued taking part of the study (EG1: 19; EG2: 19; CG: 18). Data from the participants who did not finish the process was not considered for the final analysis.

### 3.4.b. Design

The study was conducted in six weeks comprising the pretest, treatment, and posttest. The phonemes studied in this research were /ɪ/, /iː/, /ʊ/, /uː/, /ɜː/, /e/, /æ/, /ʌ/, /ɑː/ and /ɔː/. Only monophthongs were considered for the study, and the phoneme "schwa" was left aside since it lacks a well-defined quality. All phonemes belong to the General American English pronunciation system. This accent variety was chosen considering the books used by the students who took part of the study (English World second edition and American English File). Ten phonemes were selected to be divided into four group of sounds. This conflation of sounds was based on previous studies that suggest that L1 speakers frequently confuse L2 sounds like /ɪ/ and /iː/ or /ʊ/ and /uː/ (Iverson & Evans, 2009; Brown, 1988).

### 3.4.c. Pretest (Week 1)

This week was devoted to pretest. The ZOOM platform was used during the

testing session. All groups were given a pretest which consisted of a word reading test. The word reading test took 10 minutes. All participants used their own devices (i.e., laptops, tablets, cellphones, etc.).

### 3.4.c.1 Test 1: Word reading test

The test consisted of 35 one-syllable words. There were 30 keywords containing one phoneme included in this study. For each of the ten phonemes, three different keywords were used (3 keywords X 10 phonemes = 30 keywords). Five extra words containing diphthongs were included as distractors. The list was repeated three times using the same 35 words. In each list all words were displayed randomly, having a total of 105 words recorded by the participants. Keywords were used to collect data about the pronunciation of the vowels in this study. Only the pronunciation of the phonemes considered in this study was assessed; errors in the pronunciation of consonants were not considered in the data.

Participants received the test in a PDF document in their emails. Five minutes were given to practice, and 20 minutes to record the words. All participants used their own devices to record the list of words (i.e., laptops, tablets, cellphones applications, microphones, etc.) and were allowed to use headphones and microphones. The corresponding number preceding the keywords was also recorded (i.e., "1. live", "2. Feel", etc.).

Distractors were not considered for the data analysis. At the end of this session, participants sent their recordings of the test by email. All types of audio formats were accepted.

Participants' recordings of keywords were inspected and classified under the

concepts of "correct" or "incorrect". After that, the researcher provided individual delayed explicit OCF (EG1: explicit correction and EG2: metalinguistic feedback) by email. Giving feedback after the pretest was based on previous studies on Corrective Feedback (Tayebipur, 2019; Khan & Farahian, 2016; Bitchener & Knoch, 2008). This feedback was recorded by the researcher using a Sure 58 microphone, a pop filter, and a Scarlett Focusrite audio-recording interphase. The OCF was given only for the mispronounced keywords, telling the number of the word in the list and the corresponding feedback. Due to the fact of having different keywords in each of the stages of the study (pretest, treatment, and posttest), the feedback given in the pretest did not affect other feedbacks provided in the treatment sessions or posttest. For each of the two types of explicit OCF there was a list of fixed expressions that were used to correct the participants' vowel mispronunciations. The researcher sent the recordings to the participants within five days after the corresponding training session.

Feedback was provided as follows:

a   Explicit correction:

Participant: "Number ten, *some* /sɔːm/"

Researcher: "The correct pronunciation for the word *some* is /sʌm/

Participant: "Number ten, *some* /sʌm/

b   Metalinguistic feedback:

Participant: "Number ten, *some* /sɔːm/"

Researcher: "The long vowel /ɔː/ is not the right sound for the word *some*. You need to pronounce a short vowel sound /ʌ/ like the one in the word *cut.*

Participant: "Number ten, *some* /sʌm/

After receiving explicit OCF by email, all participants recorded a second version of their audios recording again only the words containing errors (sent as feedback in the audio file by the researcher). The keywords were classified under the concepts of "repaired", "needs repair" or "no uptake". This was to analyze the effectiveness of the explicit OCF given to each of the groups participating in this activity. The participants followed the same procedure as for their first recording. OCF was not provided for this second recording. Participants received a completed-task confirmation email.

### 3.4.c.2. Proficiency test.

All participants were given a short online proficiency test (EF Education First, 2020). This test was given during week 1 and the results were used to determine the learners' English level of proficiency. Participants sent their results to the researcher by mail. Taking this test was mandatory to participate in this study. The level of proficiency was reported using the Common European Framework of Reference for languages (CEFR) (Council of Europe, 2020).

The researcher was connected during the whole tests in case there were connection issues or specific doubts.

### 3.4.c.3. Treatment (Weeks 2, 3, 4, and 5)

Treatment sessions were focused on practicing the pronunciation of isolated words. For each of the four sessions, participants received an email ten minutes before starting the sessions with a list of 20 one-syllable keywords containing the ten phonemes included in this study. For each of the ten phonemes, two different

keywords were used (2 keywords X 10 phones = 20 words). At the beginning of each session, participants were provided with general instructions about the group of sounds that were studied (week 1 /ɪ/ and /iː/, week 2 /ʊ/ and /uː/, week 3 /ɜː/ and /e/, and week 4 /ʌ/, /ɑː/, /æ/ and /ɔː/). Participants could use headphones or speakers to do the activities (tasks 1, 2, 3, and 4) and adjust the volume at their convenience. The researcher and all participants used their own devices (i.e., laptops, tablets, cellphones, speakers, headphones, microphones, etc.) to connect to each session through the ZOOM platform.

Each audio file was obtained using a Text-to-Speech (TTS) platform (Wideo Inc, 2021), and they were saved in MP3 format. Two male and two female speakers were used.

### a. Task 1

Participants listened to a list of 20 keywords presented twice in an audio file using their headphones or speakers. These keywords were sent in written form in a document by e-mail. Participants had to write the number in the order they heard the words. The answer key was displayed on the platform screen once they finished. Time for comments or questions was given after the second listening. The worksheet was previously created using Google Forms.

### b. Task 2

Participants listened to eight words twice and identify the phoneme in the keyword (phonemes of the week). Participants used a worksheet previously sent by email in which they selected between the (two) phonemes presented on the screen

of their computers. The worksheet was previously created using Google Forms. Words in this activity were not taken from the list in Task 1.

### c. Task 3

Participants took part in a whole class activity in which they read aloud the list of 20 keywords presented in task one. During that pronunciation task, participants had their camera devices on and their microphones off. The researcher did not interrupt the participants and answered only procedural doubts while each participant practiced the pronunciation of the keywords. The researcher could ask to turn on the microphones of some of the participants at random to ensure the proper way of completing the activity without giving pronunciation feedback. That task lasted five minutes including the instructions. Once practicing was over, the researcher chose two participants randomly to read aloud 10 keywords each. While each of the two participants was pronouncing their keywords, immediate implicit OCF in the form of recast (Participant: He needs a map /mɔːp/. Researcher: /mæp/. Participant: He needs a map /mæp/) was given to set the correct pronunciation model. That task lasted 10 minutes. For this type of implicit OCF there was a list of fixed expressions that were used to give feedback on participants' vowel phonemes mispronunciations.

### d. Task 4

Participants were given ten minutes to record the 20 keywords (from 1 to 20) from the list used in activities 1 and 3 individually without pausing the recording. Participants used their own devices to record the words (i.e., laptops, tablets,

cellphones, microphones, etc.). For each of the ten phonemes included in this study, two different keywords were used. (2 keywords X 10 phones = 20 words). Recordings were sent by email.

The researcher was always connected during the whole session in case there were connection issues or specific questions.

After receiving the participants' recordings, the researcher provided individual delayed explicit OCF (EG: explicit correction and EG2: metalinguistic feedback) by email. That feedback was recorded by the researcher using a Sure 58 microphone, a pop filter, and a Scarlett Focusrite audio-recording interphase. The OCF was given only for the mispronounced keywords, telling the number of the word in the list and the corresponding feedback. For each of the two types of explicit OCF there was a list of fixed expressions that were used to correct the participants' vowel mispronunciations. The researcher sent the recording to the participants within five days after the corresponding training session.

After receiving explicit OCF by email, all participants recorded a second version of their audios pronouncing again only the words containing errors. That was done to analyze the effectiveness of the explicit OCF given to each of the groups participating in that activity. The participants followed the same procedure as for their first recording. OCF was not provided for this second recording. Participants received a completed-task confirmation email. During the treatment sessions, the CG had their usual English classes without receiving any type of OCF.

### 3.4.d. Posttest (week 6)

A posttest was administered to each participant. The same format (word

reading test) in the pretest was used. All keywords in the posttest were not used in the pretest nor the treatment sessions. All keywords and distractors were not used either in the pretest nor the treatment sessions.

The procedure of all stages from week 1 to week 6 is presented as follows:

**Table 2**

Overview of research schedule

| Group | Week 1 | Week 2 | Weak 3 | Weak 4 | Week 5 | Week 6 |
|---|---|---|---|---|---|---|
| CG | - Proficiency test <br> - Pretest (word reading test) | - | - | - | - | Posttest |
| EG1 | - Proficiency test <br> - Pretest (word reading test) | Treatment | Treatment | Treatment | Treatment | Posttest |
| EG2 | - Proficiency test <br> - Pretest (word reading test) | Treatment | Treatment | Treatment | Treatment | Posttest |

## 3.5. Instruments

All tests and activities were built using one-syllable keywords that include only one vowel phoneme (monophthong). These keywords were selected from a wide range of texts used in the participants' regular English lessons, and no specific phonetics books material was necessary during the training. The keywords frequency was checked using an online lexical database platform and its "VP-compleat" vocabulary profiler (Cobb, 2015), ensuring that all words had a lexical frequency ranging from 1k to 8k.

**Table 3**

Total of keywords according to their frequency band in each of the instruments used

| Frequency band | Pretest | Treatment 1 | Treatment 2 | Treatment 3 | Treatment 4 | Posttest |
|---|---|---|---|---|---|---|
| 1K | 25 | 20 | 16 | 15 | 16 | 25 |
| 2K | 5 | 0 | 3 | 4 | 4 | 6 |
| 3K | 3 | 0 | 0 | 0 | 0 | 1 |
| 4K | 1 | 0 | 1 | 0 | 0 | 2 |
| 5K | 0 | 0 | 0 | 0 | 0 | 1 |
| 6K | 1 | 0 | 0 | 0 | 0 | 0 |
| 7K | 0 | 0 | 0 | 1 | 0 | 0 |
| 8K | 0 | 0 | 0 | 0 | 0 | 0 |
| **Total of keywords** | **35** | **20** | **20** | **20** | **20** | **35** |

**Chapter 3**

## 4 RESULTS

The aim of the current study was to compare the effect of two techniques of explicit OCF on L2 learners of English with Spanish as L1 (i.e., explicit corrective feedback vs. metalinguistic feedback). For this purpose, three groups of university students (CG: Control Group; EG1: Experimental Group 1; EG2 Experimental Group 2) participated in the study. Participants from the CG only took part in the pretest and the posttest. The EG1 and the EG2 were given a pretest, four training sessions and a posttest. During the training sessions, the EG1 was provided with individual delayed explicit corrective feedback, while the EG2 received individual delayed metalinguistic feedback.

The data gathered from the pretest and posttest comprised the recording of a set of 90 keywords per participants (56 participants) which included the vowel sounds considered for this research (/ɪ/, /iː/, /ʊ/, /uː/, /ɜː/, /e/, /æ/, /ʌ/, /ɑː/ and /ɔː/). The participants from the EG1 and the EG2 received feedback on the recording of their pretest (First OCF) and send a second recording with a new version of the incorrect keywords. To better understand the impact of each of the types of OCF used in the study, a decision was taken to compute the results considering the concepts of correct and incorrect only. Consequently, all keywords were categorized using the concepts of *correct* (originally "correct" and "repaired") or *incorrect* (originally "incorrect", "not repaired", and "no uptake"). For the purpose of statistical analyses, each *correct* answer was coded as "1" and each *incorrect* answer as "0",

which allowed to calculate the percentage of correct responses for each participant and to represent the performance of each participant in a single value. The results obtained from this process represent a continuous variable which was analyzed using the statistic techniques explained later.

It is important to say that before the pretest, the three groups were given an online language proficiency test to measure their knowledge of English. The results showed that there was no statistical significant difference (Table 4) among groups in their language proficiency scores.

**Table 4**

Language proficiency test scores for the three groups of participants (Number of participants (N), Mean, Standard Deviation (SD))

| Group | N | Mean | SD |
|---|---|---|---|
| CG | 18 | .3628 | .176 |
| EG1 | 19 | .3615 | .161 |
| EG2 | 19 | .4232 | .143 |

**Table 5**

Distribution per group according to their level of proficiency

| Level of proficiency | CG | EG1 | EG2 |
|---|---|---|---|
| A1 | 8 | 10 | 7 |
| A2 | 3 | 4 | 2 |
| B1 | 5 | 3 | 6 |
| B2 | 0 | 1 | 2 |
| C1 | 2 | 1 | 2 |
| C2 | 0 | 0 | 0 |

## 4.1. Shapiro-Wilk test.

To test the assumption of a normal distribution of the collected data in the pretest and posttest, a Shapiro-Wilk test was conducted separately for the pretest

and posttest using the data of the word reading test (90 keywords) for CG, EG1, and EG2 on the pronunciation of the keywords. Correct answers were computed with "1" and incorrect answers with "0", and the percent of correct responses was calculated for each individual participant. The results for the pretest (Table 6) and for the posttest (Table 7) showed that all groups showed a normal distribution p> 0.05.

**Table 6**

Test for normal distribution (Shapiro-Wilk) using the scores of the word reading test in pretest (Mean, Standard Deviation, *p*)

| Group | N | Mean | SD | *p* |
|---|---|---|---|---|
| CG | 18 | .475 | .113 | .185 |
| EG1 | 19 | .657 | .096 | .8914 |
| EG2 | 19 | .744 | .136 | .4813 |

**Table 7**

Test for normal distribution (Shapiro-Wilk) using the scores of the word reading test in posttest (Mean, Standard Deviation, *p*)

| Group | N | Mean | Std. Deviation | *p* |
|---|---|---|---|---|
| CG | 18 | .525 | .128 | .8497 |
| EG1 | 19 | .709 | .093 | .9859 |
| EG2 | 19 | .835 | .104 | .5752 |

**4.2. One-way ANOVA test.**

To explore the impact of the two different types of feedback (EG1: Explicit Corrective feedback and EG2: Metalinguistic feedback) on the pronunciation of ten English vowels (/ɪ/, /iː/, /ʊ/, /uː/, /ɜː/, /e/, /æ/, /ʌ/, /ɑː/ and /ɔː/), two one-way ANOVA analyses were performed using the scores of the word reading test (90 keywords) for the three groups of participants (CG, EG1 and EG2) separately in the pretest and

posttest. As already explained, answers were computed using the final percentages of correct and incorrect vowel pronunciation for each individual participant. The results of both analyses revealed that there was a statistically significant difference in the mean for the pretest and posttest between groups $p < 0.001$ both for the pretest and posttest (Table 8). In the pretest, the EG1 score was M=.65 (SD:.09) and for the EG2 M=.74 (SD:.13), and the CG score obtained M=.47 (SD:.11). In the posttest, the EG1 score was M=.70 (SD:.09), for the EG2 M=.83 (SD:.10) and the CG score obtained M=.52 (SD:.12).

**Table 8**

Test to compare means (one-way ANOVA) using the scores of the word reading test in pretest (Sum of squares, *df*, MS, F, Sig.)

| Stage | | Sum of squares | *df* | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| **Pretest** | **Between Groups** | .697 | 2 | .349 | 25.742 | < .001 |
| | **Within groups** | .718 | 53 | .014 | | |
| | Total | 1.415 | 55 | | | |
| **Posttest** | **Between Groups** | .891 | 2 | .446 | 37.569 | < .001 |
| | **Within groups** | .629 | 53 | .012 | | |
| | Total | 1.520 | 55 | | | |

## 4.3. Tukey's HSD Test.

To explore the differences in the scores of the pretest and posttest on the word reading test between groups, a Tukey's HSD Test for multiple comparisons was performed as post-hoc analyses separately for the data taken in the pretest and posttest (Table 9). The comparisons showed that there was a significant difference in the mean value for the pretest between the CG and the EG1 $p < .001$. The overall mean for the CG was M=.47 (SD:.11) and for the EG1 was M=.65 (SD:.09). Also,

there was significant difference between the CG and the EG2 means in the pretest, *p* < .001. The scores for the CG were M=.47 (SD:.11) and for the EG2 were M=.74 (SD:.13). Additionally, no significant difference was found between the EG1 and the EG2 in the pretest results, *p* =.063.

As for the posttest, a significant difference was found between the CG and the EG1, *p* < .001. The score for the CG was M=.52 (SD:.12) and for the EG1 was M=.70 (SD:.09). The comparison between the CG and the EG2 also revealed a significant difference, *p* < .001. The mean for the EG2 was M=.83 (SD:.10). There was a statistically significant difference in the mean value between the EG1 and the EG2, *p* < .001. The score for the EG1 was M=.70 (SD:.09) and for the EG2 was M=.83 (SD:.10).

**Table 9**

Test for multiple comparisons (Tukey's HSD) using the scores of the word reading test between groups in pretest and posttest (Mean Difference, Standard Error, Sig. Confidence Interval)

| Dependent Variable | (I) group | (J) group | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|---|
| | | | | | | Lower Bound | Upper Bound |
| **Pretest** | CG | EG1 | -.181219 | .038271 | < .001 | -.27490 | -.09034 |
| | | EG2 | -.269753 | .038271 | < .001 | -.36204 | -.17747 |
| | EG1 | CG | .182619 | .038271 | < .001 | -.09034 | .27490 |
| | | EG2 | -.087135 | .037751 | = .063 | -.17816 | .00389 |
| | EG2 | CG | .269753 | .038271 | < .001 | .17747 | .36204 |
| | | EG1 | .087135 | .037751 | = .063 | -0.0389 | .17816 |
| **Posttest** | CG | EG1 | -.183463 | .035824 | < .001 | -.26984 | -.09708 |
| | | EG2 | -.309194 | .035824 | < .001 | -.39558 | -.22281 |
| | EG1 | CG | .183463 | .035824 | < .001 | .09708 | .26984 |
| | | EG2 | -.125731 | .035337 | < .001 | -.21094 | -.04052 |
| | EG2 | CG | .309194 | .035824 | < .001 | .22281 | .39558 |
| | | EG1 | .125731 | .035337 | < .001 | .04052 | .21094 |

### 4.4. Paired samples test

To determine whether there was a significant mean difference between pretest and posttest on the pronunciation of the vowels considered for the current study within groups (CG, EG1 and EG2), a paired t-test was conducted on the word reading test scores (Table 10, Table 11 and Table 12) considered for the current research, separately for each experimental group. The effect size was also calculated for each comparison (Table 13).

**Table 10**

Mean difference within the CG (Paired samples test) using the percent correct scores of the word reading test in the pretest and posttest (Mean, Standard Deviation, Standard Error Mean, Confidence Interval, t, *df*, sig.)

| | Mean | Sd | Std error Mean | 95% confidence interval of the difference | | t | *Df* | significance | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Lower | Upper | | | One-sided *p* | Two-sided *p* |
| **Pair 1 Pretest Posttest** | .050 | .071 | .016 | .014 | .086 | 2.99 | 17 | .004 | .008 |

From the data shown in Table 10, the comparison between pretest and posttest scores for the CG was significant, *p* < .001; the mean difference for the pretest and posttest was M=.05 (SD:.07) with the posttest mean being higher than the pretest.

**Table 11**

Mean difference within the EG1 (Paired samples test) using the percent correct

scores of the Word Reading Test (WRT) in the pretest and posttest (Mean, Standard Deviation, Standard Error Mean, Confidence Interval, t, *df,* sig.)

| | Mean | Sd | Std error Mean | 95% confidence interval of the difference | | T | *Df* | significance | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Lower | Upper | | | One-sided *p* | Two-sided *p* |
| **Pair 1 Pretest Posttest** | .051 | .094 | .021 | .000 | .096 | 2.37 | 18 | .014 | .029 |

The results for the EG1 (see Table 11) showed that there was a significant (*p* < .0.5) difference between the mean before and after the training sessions. The mean difference was M=.05 (SD:.09), as the posttest scores were higher.

**Table 12**

Mean difference within the EG2 (Paired samples test) using the percent correct scores of the word reading test in the pretest and posttest (Mean, Standard Deviation, Standard Error Mean, Confidence Interval, t, *df*, sig.)

| | Mean | Sd | Std error Mean | 95% confidence interval of the difference | | T | *Df* | significance | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Lower | Upper | | | One-sided *p* | Two-sided *p* |
| **Pair 1 Pretest Posttest** | .090 | .077 | .017 | .052 | .127 | 5.04 | 18 | <.001 | <.001 |

For the EG2 (see Table 12), results for the comparisons showed a significant difference (*p* < .001) between pretest and post, mean score in the posttest was M=.09 (SD:.07) higher.

**Table 13**

The Cohen's test was used to determine the size effect for the three groups using the scores of the Word Reading Test (WRT) in the pretest and posttest.

| | | | Standardizer | Point Estimate | 95% confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower | Upper |
| CG | Pair 1 | Cohen's d | .071 | .707 | .180 | 1.217 |
| | Pretest Posttest | Hedges' correction | .074 | .675 | .172 | 1.162 |
| EG1 | Pair 1 | Cohen's d | .094 | .545 | .055 | 1.022 |
| | Pretest Posttest | Hedges' correction | .098 | .522 | .053 | .978 |
| EG2 | Pair 1 | Cohen's d | .077 | 1.157 | .562 | 1.733 |
| | Pretest Posttest | Hedges' correction | .081 | 1.108 | .538 | 1.659 |

Given the results shown in Table 13 the effect size for the CG is moderate (point estimate: .707). A moderate effect size was also shown for the EG1 (point estimate: .545). A large effect size was reported for the EG2 (point estimate: 1.157). The effect size in the three groups suggests the EG2 improved more in comparison to the CG and the EG1.

## 4.5. Pearson Correlation test

To explore individual differences in the Word reading test results and to establish whether the participants' level of proficiency was a factor that determined the effectiveness of one type of OCF over the other, six Pearson's Product-moment correlation tests were conducted as follows: one analysis for the pretest and one for the posttest, separately for each experimental group. conducted as follows: one analysis for the pretest and one for the posttest, separately for each experimental group. The scores used for this analysis were: the percentage of correct answers of

participants in the word reading test in the pretest and posttest on the pronunciation of the ten vowels considered for the current study (/ɪ/, /iː/, /ʊ/, /uː/, /ɜː/, /e/, /æ/, /ʌ/, /ɑː/ and /ɔː/), and the proficiency test scores of the participants.

In the case of CG, there was a significant correlation between the Proficiency test and the pretest ($r = .640$, $n = 18$, $p < .01$) and posttest ($r = .565$, $n = 18$, $p = .05$). The correlation was moderate in both cases (Table 14).

**Table 14**

Pearson-moment Correlation Test using the scores of the English level of proficiency test and the pretest and posttest scores of the Word Reading Test for the CG.

| Variable | | Pretest | Posttest |
|---|---|---|---|
| **Proficiency test score** | Pearson Correlation | .640 | .565 |
| | Sig. (2-tailed) | .004 | .015 |
| | *n* | 18 | 18 |
| *Correlation significant at 0.05 level | | | |

For the EG1, there was no significant correlation between the Proficiency test and the pretest ($r = .040$, $n = 19$, $p = .869$) and posttest ($r = -159$, $n = 19$, $p = .516$). The correlation was moderate in both cases (Table 15).

**Table 15**

Pearson-moment Correlation Test using the scores of the English level of proficiency test and the pretest and posttest scores of the Word Reading Test for the EG1.

| Variable | | Pretest | Posttest |
|---|---|---|---|
| **Proficiency test score** | Pearson Correlation | .040 | .-159 |
| | Sig. (2-tailed) | .869 | .516 |
| | *N* | 19 | 19 |
| *Correlation significant at 0.05 level | | | |

For the EG2, there was no significant correlation between the Proficiency test and the pretest ($r$ = .214, $n$ = 19, $p$ = .378) and posttest ($r$ =.264, $n$ =19, $p$ = .274). The correlation was moderate in both cases (Table 16).

**Table 16**

Pearson-moment Correlation Test using the scores of the English level of proficiency test and the pretest and posttest scores of the Word Reading Test for the EG2.

| Variable | | Pretest | Posttest |
|---|---|---|---|
| **Proficiency test score** | Pearson Correlation | .214 | .264 |
| | Sig. (2-tailed) | .378 | .274 |
| | $N$ | 19 | 19 |
| *Correlation significant at 0.05 level | | | |

For all groups (CG, EG1, EG2) separate Pearson correlation coefficient tests were also conducted to assess possible linear relationship between a) gender and proficiency test scores; b) gender and pretest scores; c) gender and posttest scores; d) age and proficiency test scores; e) age and pretest scores; f) age and posttest scores. No significant results were shown for any of the comparisons mentioned previously.

## 5. DISCUSSION

This study had the purpose of exploring the impact of two different types of delayed OCF on the pronunciation of a set of ten English vowels of a group of Chilean learners who had English as their L2. The novelty of this research is to compare the impact of explicit corrective feedback and metalinguistic corrective feedback during a 6-week study with learners who have had all their lessons in an online format during two years in Chile. All sessions for this study were conducted in the second semester of 2021, which implies that students had already experienced four semesters of only online classes. This online learning system was not familiar for Chilean university students before the pandemic.

The results showed improvement after OCF training in the pronunciation of the two experimental groups (EG1 and EG2) and also in the control group (CG). The results for the EG1 and EG2 are consistent with previous studies which reported a positive effect on student's speaking achievement after using OCF techniques within lessons' context. Regarding this, Suryoputro and Amaliah (2016) stated that explicit correction, which was the most frequent type or OCF in their study, made learners aware of their errors and therefore their pronunciation improved. Dehgani et al. (2017), suggested that OCF was shown to be beneficial after some weeks of treatment, despite of not mentioning the type of feedback used during the study. On the other hand, the findings of improvement for the CG participants are unexpected given that control groups tend to show no advantage when compared with experimental groups. This CG not only showed improvement but also showed a moderate size-effect similar to the results for the EG1. This may reveal that the

modality of OCF given to the EG1 had little benefit for learning purposes, and that the observed benefits in CG and EG1 might have occurred due to training effects in the EG1 or familiarization with the tests in the CG. Due to the unforeseen performance showed by the CG, it would be advisable not to directly compare the results in the CG with the results in the EG1 and EG2, and make further comparisons between EG1 and EG2 only. A more exhaustive search for the participants in the CG is suggested to be considered for future studies.

In the present study, the results of the pretest and posttest in the Word reading test were considered to explore the differences in the mean of the three groups. Regarding the Word reading test in the pretest, a significant difference was found between the CG and the EG1, as well as between the CG and the EG2 for the pronunciation of the English vowels. No difference was found between the EG1 and the EG2. This finding suggests that participants in the two experimental groups (EG1, EG2) had similar pronunciation ability before receiving the OCF treatment and that the CG showed poorer pronunciation, regardless of the similar knowledge of the L2 found in the proficiency test scores among the three groups measured by grammar, listening and vocabulary questions. It could also be possible that a different proficiency test would give dissimilar outcomes from the ones obtained in the current study. In the posttest Word reading test, results indicate that all possible combination between groups showed a significant difference with the highest score for EG2 (i.e., CG<EG1<EG2; EG1 and EG2). This finding may suggest that the type of feedback (metalinguistic feedback) given to the EG2 was shown more beneficial, since the results presented a greater impact in the posttest scores. The benefit of metalinguistic feedback has been described in previous studies which used OCF for

improving pronunciation. Ellis and Sheen (2011) argued that metalinguistic correction is especially facilitative of L2 acquisition because it develops learners' awareness at the level of both noticing and understanding. In another study, Li (2014) suggested that metalinguistic correction showed larger effects in comparison to other types of feedback like recast for the low-level learners. Although this benefit has been observed in some studies, the specific difference, and the impact on pronunciation of vowels between explicit correction and metalinguistic feedback has not been widely explored up to this time –to our knowledge.

Another aspect explored in this study was the difference within groups considering the scores of the pretest and posttest Word reading test. For this, Paired sample tests were administrated. The results showed a significant difference within the three groups (CG, EG1 and EG2). Preliminarily, this may suggest that all the groups improved with or without receiving feedback. However, EG2 outperformed the other two groups, perhaps due to the results presented previously in the analysis between groups and considering the effect sizes, which were shown moderate for the CG and the EG1, but large for the EG2. This means that the type of OCF provided to the EG2 (metalinguistic feedback) showed a stronger effect in improving the pronunciation of English vowels, therefore it could be likely to be more efficient in groups of learners with similar characteristics to the ones who participated in the current study.

## 6. CONCLUSIONS

To answer the first research question ("What is the impact of different types of explicit OCF on the pronunciation of English vowels of L2 learners?"), it can be suggested that results in the current study showed that the types of explicit OCF used (explicit correction and metalinguistic feedback) improved the pronunciation of English vowels of L2 learners with similar characteristics to the ones who participated in the current study. It also can be noted that the use of treatment sessions was shown to be beneficial for the two experimental groups (EG1 and EG2).

According to the findings of this study, the second research question ("What type of explicit OCF can be more effective for the improvement of the pronunciation of English vowels by L2 learners?") was also answered. The type of explicit correction feedback that showed a stronger improvement from pretest to posttest was metalinguistic feedback, given that the results in the word reading test for the posttest were higher compared to the results of the CG and the EG2, and therefore more effective. The impact of this type of delayed explicit OCF must be considered carefully, due to the small amount of evidence found in relation to similar studies conducted during the pandemic in the context of online lessons that compared the same types of feedbacks. Mentioning the latter seems appropriate considering that the main objective of the study was to determine the impact of two different types of explicit delayed OCF on the pronunciation of English vowels by Chilean L2 learners in the context of online lessons, as well as the first specific objective, which aimed at determining the effectiveness of the use of explicit correction and metalinguistic

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feedback on the pronunciation of English vowels by Chilean L2 learners in the context of online lessons.

It also can be stated that the learners' level of proficiency was not a factor that clearly determined the effectiveness of the any of one type of OCF over the other.

Nonetheless, the results can be taken as a contribution to the study of OCF which at least in Chile has not been widely explored up to date. Along with this, the findings presented in the current study showed the importance of the use of OCF to improve the pronunciation of English vowels in ESL Chilean learners since the results after the posttest can be thought as more accurate oral production and consequently a possible better understanding when listening to this language. Finally, it would be fair to say that this study could be used to improve or modify certain techniques that Chilean teachers tend to use when teaching pronunciation.

# 7. LIMITATIONS OF THE STUDY

Among the limitations of the current study, the most important and relevant was the pandemic factor. In Chile, university students were not prepared to receive lessons online. This was not the exception in relation to the participants of this study. The inexperience in the format could have been a factor that affected the performance of the participants. Despite this, all participants fulfilled all tasks and showed always enthusiastic when completing the various stages of the study. It would be advisable to conduct similar studies in a face-to-face format and confirm the results presented here.

Another limitation was the impossibility of using the same devices when recording the lists of words. This prevented carrying out acoustic analyses of the participants' utterances, which would have given more accurate information for the conclusions. Added to the different recording devices, the lack of a single environment to record their lists of words was another issue considered when preparing the methodology of the study. Although these problems were present, all participants sent their recording in fairly good audible formats.

The modification of the original planning was another problem at the beginning of the research. Together with the pandemic, having three whole groups of students participating in three single different classes to form the CG, the EG1 and the EG2 was almost impossible and it only represented a barrier to the normal function of the planning. Because of this, the conformation of the groups had to be modified, and a public invitation was sent through social media and emails to call university students who were interested in taking part on the study. This process

produced a delay of two weeks in forming the CG, and it might be the case that the

CG was thus qualitatively different from the other two groups, given that participants

from this group were particularly motivated to be included in the study. By the end of

the research all three groups finished their tests at the same time, but it would be

advisable to consider this fact for future research.

## 8. FUTURE RESEARCH

It would be interesting to conduct more of this type of research having Chilean participants of all levels, considering the Chilean educational system, i.e., elementary, high-school and university students. This because studies on OCF are not widely carried out. This would be an important contribution to the English Chilean teachers who should be able to evaluate pronunciation at all levels.

It would also be interesting to conduct more studies that could compare different types of OCF. This could be helpful for all participants of the teaching and learning process who need more precise information that could be used in their everyday labor, especially considering the fact that almost all the information found related to the topic of OCF has been carried out using participants who don't meet the characteristic of the great majority of the Chilean students, knowing that in general, Chilean people don't have an everyday contact with a language different from their mother tongue.

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# APPENDIX

## WORD READING LIST 1 (PRETEST)

| # | Word | | # | Word | | # | Word |
|---|------|---|---|------|---|---|------|
| 1 | COME | | 37 | LAST | | 73 | DRANK |
| 2 | CURL | | 38 | PROVE | | 74 | BOIL |
| 3 | HEART | | 39 | STAKE | | 75 | SELL |
| 4 | SOME | | 40 | MOLE | | 76 | MEAN |
| 5 | KEPT | | 41 | FEEL | | 77 | BEEN |
| 6 | TEN | | 42 | LOST | | 78 | JUICE |
| 7 | SELL | | 43 | LOOK | | 79 | FEEL |
| 8 | RANK | | 44 | BUSH | | 80 | PROVE |
| 9 | PEARL | | 45 | FLOOR | | 81 | DRANK |
| 10 | MARK | | 46 | NAME | | 82 | DRINK |
| 11 | BUSH | | 47 | HEART | | 83 | PEARL |
| 12 | COIN | | 48 | STOP | | 84 | FISH |
| 13 | HUNG | | 49 | LOST | | 85 | SOME |
| 14 | LOOK | | 50 | PUT | | 86 | FISH |
| 15 | SKIRT | | 51 | RANK | | 87 | FLOOR |
| 16 | COME | | 52 | LEAD | | 88 | SKIRT |
| 17 | SMALL | | 53 | LOOK | | 89 | CURL |
| 18 | COIN | | 54 | BUSH | | 90 | SKIRT |
| 19 | FISH | | 55 | FEEL | | 91 | STOP |
| 20 | SMALL | | 56 | BEEN | | 92 | FLOOR |
| 21 | JUICE | | 57 | MOLE | | 93 | COME |
| 22 | SOME | | 58 | HEART | | 94 | PROVE |
| 23 | BOIL | | 59 | LAST | | 95 | SMALL |
| 24 | MARK | | 60 | NAME | | 96 | STOP |
| 25 | COOL | | 61 | TEN | | 97 | HUNG |
| 26 | BEEN | | 62 | STAKE | | 98 | TEN |
| 27 | DRANK | | 63 | BOIL | | 99 | DRINK |
| 28 | KEPT | | 64 | SELL | | 100 | COOL |
| 29 | NAME | | 65 | KEPT | | 101 | PUT |
| 30 | CURL | | 66 | LOST | | 102 | RANK |
| 31 | STAKE | | 67 | DRINK | | 103 | MEAN |
| 32 | JUICE | | 68 | MARK | | 104 | HUNG |
| 33 | PEARL | | 69 | LEAD | | 105 | LAST |
| 34 | MEAN | | 70 | MOLE | | | |
| 35 | PUT | | 71 | COIN | | | |
| 36 | COOL | | 72 | LEAD | | | |

**WORD READING LIST 2 (POSTTEST)**

| # | Word | # | Word | # | Word |
|---|------|---|------|---|------|
| 1 | POOCH | 37 | SALT | 73 | DRUM |
| 2 | GLAD | 38 | GLASS | 74 | HEAD |
| 3 | DOG | 39 | MOON | 75 | CARD |
| 4 | PART | 40 | TOOK | 76 | LEAST |
| 5 | DON'T | 41 | LOVE | 77 | PART |
| 6 | FARE | 42 | SPEAK | 78 | DOG |
| 7 | TALE | 43 | LIST | 79 | SALT |
| 8 | LIST | 44 | GLASS | 80 | BULL |
| 9 | PLACE | 45 | SHOES | 81 | SHOES |
| 10 | PLANT | 46 | STRONG | 82 | DIRT |
| 11 | VERB | 47 | HEAD | 83 | BRING |
| 12 | DIRT | 48 | POOCH | 84 | MOON |
| 13 | REACH | 49 | TALE | 85 | TOUR |
| 14 | PRESS | 50 | PLANT | 86 | LEAST |
| 15 | TOUCH | 51 | DOG | 87 | TOUR |
| 16 | PLANT | 52 | SALT | 88 | PART |
| 17 | SPEAK | 53 | BULL | 89 | SHOES |
| 18 | CARD | 54 | MOON | 90 | PLACE |
| 19 | LOVE | 55 | GLAD | 91 | DON'T |
| 20 | CARD | 56 | DON'T | 92 | TERSE |
| 21 | HEAD | 57 | GLAD | 93 | CHARGE |
| 22 | SPEAK | 58 | STRONG | 94 | BULL |
| 23 | TOOK | 59 | DRUM | 95 | TOUR |
| 24 | JOIN | 60 | LIST | 96 | PRESS |
| 25 | PRESS | 61 | BRING | 97 | VERB |
| 26 | TERSE | 62 | PLACE | 98 | GLASS |
| 27 | GIFT | 63 | TOUCH | 99 | FARE |
| 28 | BRING | 64 | REACH | 100 | TOOK |
| 29 | SIGN | 65 | SIGN | 101 | CHARGE |
| 30 | TALE | 66 | LOVE | 102 | REACH |
| 31 | TERSE | 67 | LEAST | 103 | DRUM |
| 32 | GIFT | 68 | VERB | 104 | TOUCH |
| 33 | CHARGE | 69 | FARE | 105 | JOIN |
| 34 | POOCH | 70 | STRONG | | |
| 35 | DIRT | 71 | JOIN | | |
| 36 | SIGN | 72 | GIFT | | |

**WORD READING LIST 1**

**TREATMENT 1 (task 4)**

| Number | Word |
|--------|-------|
| 1 | KING |
| 2 | MILK |
| 3 | GREEN |
| 4 | NEED |
| 5 | BOOK |
| 6 | SURE |
| 7 | BLEW |
| 8 | GROUP |
| 9 | FIRST |
| 10 | BIRTH |
| 11 | BEST |
| 12 | NEXT |
| 13 | DRUNK |
| 14 | MONTH |
| 15 | BAR |
| 16 | FARM |
| 17 | FAST |
| 18 | PAST |
| 19 | BALL |
| 20 | DOOR |

**WORD READING LIST 2**

**TREATMENT 2 (task 4)**

| Number | Word |
|:------:|------|
| 1 | FOOT |
| 2 | TERM |
| 3 | BRIDGE |
| 4 | DOES |
| 5 | BREAD |
| 6 | BOARD |
| 7 | FOOD |
| 8 | DARK |
| 9 | DREAM |
| 10 | POOR |
| 11 | SEARCH |
| 12 | CHANCE |
| 13 | JUST |
| 14 | FIT |
| 15 | FRESH |
| 16 | FRUIT |
| 17 | LARGE |
| 18 | KEEP |
| 19 | LAND |
| 20 | HOOD |

**WORD READING LIST 3**

**TREATMENT 3 (task 4)**

| Number | Word |
|--------|--------|
| 1 | BIG |
| 2 | GIVE |
| 3 | BLEED |
| 4 | READ |
| 5 | BROOK |
| 6 | HOOK |
| 7 | LOSE |
| 8 | RULE |
| 9 | SERVE |
| 10 | FIRM |
| 11 | DRESS |
| 12 | FELL |
| 13 | JUDGE |
| 14 | RUN |
| 15 | FAR |
| 16 | SHOT |
| 17 | BRANCH |
| 18 | RANG |
| 19 | CALL |
| 20 | LORD |

**WORD READING LIST 4**

**TREATMENT 4 (task 4)**

| Number | Word |
|--------|--------|
| 1 | BUILD |
| 2 | FILL |
| 3 | MEET |
| 4 | PLEASE |
| 5 | GOOD |
| 6 | PUD |
| 7 | MOVE |
| 8 | LOOSE |
| 9 | HURT |
| 10 | THIRST |
| 11 | FELT |
| 12 | REST |
| 13 | FRONT |
| 14 | SPRUNG |
| 15 | HARD |
| 16 | CHARM |
| 17 | CLASS |
| 18 | LAUGH |
| 19 | BROAD |
| 20 | HORSE |