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**The Influence of L1 and L2 Phonological Awareness
on L2 Vocabulary Learning**

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Orientadora: Profa. Dra. Mailce Borges Mota.

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Finally, I am grateful to God. When everything seemed impossible He made me believe I was capable. When no one knew my hardships He was by my side.

Quando a educação não é libertadora, o sonho

do oprimido é ser o opressor.

— Paulo Freire

ABSTRACT

Vocabulary learning is essential in L1 as well as in L2 development. In L2 instructional settings for children, vocabulary becomes even more important since it is through vocabulary learning that they are mostly exposed to linguistic input. Vocabulary learning can be influenced by several variables, such as frequency and length of the word, long-term memory, speech perception, phonological awareness (PA), working memory (WM), and phonological short-term memory (PSTM). As far as PA is concerned, its influence on L2 vocabulary learning is still inconclusive in the area. The objective of the present study was to investigate the influence of L1 and L2 PA on L2 receptive vocabulary learning. In order to investigate that, the present study had a pre-test, intervention, and post-test design. The study was conducted during the pandemic of COVID-19 with 6 children attending the 6th grade of a public school in Florianópolis/SC. These children had English once a week for 45 minutes as part of their curriculum in the regular school. The participants performed six pre-tests (L2 receptive vocabulary, L1 and L2 phonological awareness, phonological short-term memory, and working memory) followed by 4 classes in the intervention (in which children were taught 10 words in English), and finally 1 test in the post-test phase (receptive vocabulary in L2). Given the small number of participants, the results of the present study were not submitted to statistical analyses and, therefore, are inconclusive with respect to the influence of L1 and L2 PA on L2 vocabulary learning. Nonetheless, an exploratory analysis was carried out and seems to indicate that there is no correlation between L1 or L2 PA and L2 vocabulary learning. However, when other factors are taken into account, such as vocabulary size, these variables seem to be correlated.

Keywords: phonological awareness; receptive vocabulary; L2; vocabulary learning.

RESUMO

A aprendizagem de vocabulário é essencial tanto no desenvolvimento da L1 quanto da L2. No caso da aprendizagem de L2 por crianças em contextos instrucionais, o vocabulário se torna ainda mais importante já que, predominantemente, é através deste fator que elas são expostas ao input linguístico. Variáveis como frequência e tamanho das palavras, memória de longo prazo, percepção de fala, consciência fonológica (CF), memória de trabalho (MT) e memória fonológica de curto prazo (MFCP) podem influenciar a aprendizagem de vocabulário na L2. No caso da CF, a evidência é inconsistente quanto ao seu poder preditor sobre a aprendizagem de vocabulário na L2. O presente estudo teve como objetivo investigar a influência da CF em L1 e L2 na aprendizagem de vocabulário na L2. Para investigar melhor a relação entre CF e aprendizagem de vocabulário em L2, um experimento foi realizado com 6 aprendizes de inglês como L2 do 6º ano do Ensino Fundamental em Florianópolis/SC. O experimento foi conduzido durante a pandemia de COVID-19 e envolvia a aplicação de uma bateria de testes (vocabulário receptivo em L2, reconhecimento de palavras em L2, consciência fonológica em L1 e L2, memória de trabalho e memória fonológica de curto prazo), uma intervenção (ensino de vocabulário na L2) e pós-teste (reconhecimento de palavras em L2). Dado o baixo número de participantes, os resultados do presente estudo não foram submetidos à análises estatísticas e, por este motivo, obteve resultados inconclusivos no que se refere à influência da consciência fonológica em L1 e L2 na aprendizagem de vocabulário na L2. Contudo, uma análise exploratória foi conduzida e os resultados parecem indicar que não há correlação entre CF em L1 e L2 e aprendizagem de vocabulário em L2. Entretanto, quando outras variáveis são levadas em consideração, como tamanho do vocabulário, é possível observar alguma correlação entre essas três variáveis.

Palavras-chave: consciência fonológica; vocabulário receptivo; L2; aprendizagem de vocabulário.

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1. **INTRODUCTION**

Second language acquisition[1] (SLA) is a complex process that involves many different variables. This field of study, which has been the interest of many researchers, investigates language acquisition/learning processes in different contexts (naturalistic or formal instruction environments, for instance) and also with different ages (children, adolescents, or adults) (ORTEGA, 2011). Among the many factors that might affect SLA, those that have emerged as having an important role are the internal and external factors (VAAHTORANTA et al, 2020). On the one hand, as concerns internal factors, there are individual differences, such as age, language aptitude, and working memory. On the other hand, as concerns external factors, there is the context the learner is involved in, the length of exposure to the language, and the type of instruction, among others. This is a crucial field to explore because, as argued by Vaahtoranta, Suggate, Lenhart, and Lenhard (2020), "considering the large number of children growing up with more than one language, it is pivotal to know which factors contribute to childhood dual language learning (DLL)[2]" (p. 1), and not only for children who acquire two languages prior to attending school, but also for those that start learning a new language from the very beginning of their school years. Furthermore, in contexts where the input is limited (such as in foreign language[3] learning environments), one of the areas of language that becomes a central part of L2 learning is vocabulary. Thus, vocabulary learning is an important issue to take into consideration when researching second language acquisition and is the main objective of this study.

Vocabulary learning is an essential process for L1 as well as L2 development (BARCROFT, 2011; LERVÅG; AUKRUST, 2010). Research on vocabulary has not always been the center of the debate, and it was only in the 1990's that it started to emerge as an essential factor in L2 learning (GONZÁLEZ-FERNÁNDEZ; SCHMITT, 2017). In order to study vocabulary, it is crucial to understand what "vocabulary" is; in other words, what is understood by a "word". Additionally, it is essential to understand what "vocabulary knowledge" is. Although there is a strong debate among researchers about how to define these

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[1] The terms "acquisition" and "learning" are usually related to how the speaker had contact with that language. For example, if it was in a naturalistic setting, the term "acquisition" is preferred, whereas in formal instruction settings the term "learning" is adopted. Thus, for the purposes of this study, the terms "learning" and "development" will be used instead of "acquisition".

[2] In this study, Lenhart and Lenhard (2020) define DLL as children who are exposed to a second language prior to attending school.

[3] Usually, there is a distinction between the terms "foreign" and "second" language. This distinction is related to the environment in which the language is being acquired/learned (ENGEL et al, 2012). I acknowledge that, however, these terms will be used interchangeably for the purposes of this study.

concepts, it is vital to operationalize them because these terms will affect the way in which we quantify and understand vocabulary knowledge. Among many factors that might influence vocabulary learning, one that seems to have an influence on vocabulary knowledge is phonological awareness (PA) (GOTTARDO et al., 2008; HU, 2003; KALIA et al., 2018; MARECKA et al., 2017; SPECIALE et al., 2004). This skill has been vastly researched in terms of reading acquisition (ANTHONY; FRANCIS, 2005; DURGUNOĞLU et al., 1993; CISERO; ROYER, 1995; LESAUX; SIEGEL, 2003; QUIROGA, 2002; SCHAARS et al., 2019). Nonetheless, its relation and influence on vocabulary learning is not a consensus in the area.

In relation to reading development, it is well established that PA has an important role (ANTHONY; FRANCIS, 2005; DURGUNOĞLU et al., 1993; CISERO; ROYER, 1995; LESAUX; SIEGEL, 2003; QUIROGA, 2002; SCHAARS et al., 2019). On the other hand, the relationship between PA and vocabulary learning is still not so clear. There is evidence pointing to different directions; on the one hand, research has not found any relationship between these variables (NICOLAY; PONCELET, 2013), however, there is also research that has found a relationship (GOTTARDO et al., 2008; HU, 2014; KALIA et al., 2018, SPECIALE et al., 2004). Nonetheless, if in fact there is a relationship between PA and vocabulary learning, which PA would have more influence on L2 vocabulary learning, L1 or L2 PA?

In the light of the above, the present study is interested in Brazilian children attending elementary school[4] and the variables that might affect their L2 (English) vocabulary learning. More specifically, this study is interested in understanding whether PA influences these children's learning process. The research questions of this thesis are:

R1: Does phonological awareness in L1 (PT) predict the acquisition of receptive vocabulary in L2 (ENG) in children?

R2: Does phonological awareness in L2 (ENG) predict the acquisition of receptive vocabulary in L2 (ENG) in children?

1.1 SIGNIFICANCE OF THE STUDY

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[4] The data was collection happened in only one school because during the pandemic the communication with the schools was difficult. Thus, even though I had permission to collect data in other public schools I was not able to conduct this study in other places because I did not have any return from the schools. There was one more school I attempted data collection; nonetheless, when the study was about to start the teachers started a strike and the students' schedule was drastically changed. Therefore, since there were time constraints, there was only one school in which I was able to conduct the present study.

In Brazil, English is a requirement in the curriculum of public elementary schools (starting in sixth grade), according to the *Base Nacional Comum Curricular* (2018) document. This fact makes it relevant to research how children learn English and which variables might affect this process. The study of vocabulary is essential in foreign language environments since it is through vocabulary that children in elementary school begin to learn a second language. This study aims to contribute to the area of SLA, as well as to the existing body of knowledge accumulated by various studies conducted at *Laboratório da Linguagem e Processos Cognitivos* (LabLing)[5] that have investigated L2 vocabulary learning (CARDOSO; MOTA, 2011a; CARDOSO; MOTA, 2011b; CARDOSO, 2012; CONCEIÇÃO; MOTA, 2014; VALLE, 2004; FORTKAMP; MENDONÇA, 2007; MENDONÇA, 2003; MOTA; SOUZA, 2016; de SOUZA, 2015; SOUZA; MOTA, 2018; VALLE; MOTA, 2011) and lexical processing (TOASSI; MOTA, 2013; TOASSI; MOTA, 2015; TOASSI, 2016; TOASSI; MOTA, 2018; TOASSI; MOTA, 2020).

Moreover, the results of the present study may also enlighten teaching practices since it could help teachers understand the aspects which could improve their students' vocabulary learning. Also, it may make a contribution to the area since the environment of data collection is underrepresented in the literature (foreign language learning in a non-immersive context). It is important to highlight that this study was conducted during the pandemic of COVID-19 in two different scenarios. First, the data collection started when the schools were still having only remote classes and then the data collection continued when the schools had just resumed in person. Thus, the present study also has historical importance since it was conducted under such circumstances.

1.2 ORGANIZATION OF THE THESIS

This thesis is organized into 6 main chapters. Chapter 1 was an introduction to second language learning with a focus on vocabulary learning. Also, it presented the research questions and the significance of the study.

Chapter 2 presents the theoretical background for this study in relation to the concepts of word, vocabulary knowledge, vocabulary learning and teaching, and the relationship between vocabulary learning and phonological awareness (PA). Thus, this chapter is

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[5] The present study is part of the project "Adaptações neurocognitivas associadas à alfabetização de crianças e adultos: efeitos nos sistemas de memória, no controle atencional e no processamento da linguagem", coordinated by Dr. Mailce Borges Mota, funded by CNPq (Bolsa de Produtividade em Pesquisa- Processo 310729/2016-5).

organized as follows: 2 main sections and 3 subsections. Section 2.1 presents the concepts of vocabulary and the following subsections 2.1.1 and 2.1.2 are dedicated to L2 vocabulary teaching and learning, and empirical studies regarding L2 vocabulary learning. Section 2.2 presents the concept of PA and it is followed by subsection 2.2.1 which is dedicated to empirical studies of the relationship between PA and vocabulary learning.

Chapter 3 presents the study method. The chapter is organized into 6 main sections and 5 subsections. Section 3.1 presents the objectives, research questions, and hypotheses. Section 3.2 presents the general design of the study. Section 3.3 presents the participants' profiles. Section 3.4 presents the instruments for data collection and it is followed by 6 subsections explaining the tests and the L2 vocabulary learning treatment sessions. Section 3.5 presents the procedures adopted to conduct the study and it is followed by 1 subsection explaining the procedures for face-to-face data collection and remote data collection. Section 3.6 presents information about the Ethics Review Board. Section 3.7 presents the pilot study. Finally, section 3.8 presents a discussion about open science: pre-registration and open data.

Chapter 4 presents the results of the present study. The chapter is organized into 1 main section and 8 subsections. Section 4.1 presents the descriptive statistics with an overall of the data collected. The subsequent subsections, present the descriptive analysis of each test conducted during data collection. Subsection 4.1.1 shows the descriptive analysis of the vocabulary levels test results, subsection 4.1.2 shows the descriptive analysis of L1 and L2 phonological awareness tests, subsection 4.1.3 show the descriptive analysis of the working memory test, subsection 4.1.4 shows the descriptive analysis of the phonological short-term memory test, subsection 3.1.5 shows the descriptive analysis of the picture matching test, subsection 3.1.6 shows a comparison of gains in vocabulary and PA tests, and finally subsection 3.1.7 shows exploratory analysis of the data.

Chapter 5 presents the discussion of the results and subsections 5.1 readdresses the research questions. Chapter 6 presents the conclusions of the present study and subsection 6.1 presents the limitations and final remarks.

2. REVIEW OF THE LITERATURE

This chapter presents the theoretical background in relation to concepts that are relevant for the present study and empirical studies involving vocabulary learning and phonological awareness (PA). The content refers to the definition of 'word', vocabulary knowledge, vocabulary learning and teaching, and the relationship between vocabulary learning and PA. Thus, this chapter is organized as follows: 2 main sections and 3 subsections. Section 2.1 presents the concepts of vocabulary and the following subsections 2.1.1 and 2.1.2 are dedicated to L2 vocabulary teaching and learning, and empirical studies regarding L2 vocabulary learning. Section 1.2 presents the concept of PA and it is followed by subsection 2.2.1 which is dedicated to empirical studies of the relationship between PA and vocabulary learning.

2.1 VOCABULARY: THEORETICAL ISSUES

Throughout the years, the study of vocabulary learning has been changing its relevance in the field of Second Language Acquisition (SLA). In the 80s, as pointed by Meara (1980), research on vocabulary learning had been neglected in SLA for a long time. In fact, the interest in studying the influence of vocabulary in L2 learning can be considered recent, since Nation (2011) stated 17 years ago that most of the research in vocabulary learning, in L1 and L2, was conducted in the last 10 years prior to his book. Nonetheless, research on vocabulary learning has gained strength in the past few decades (GONZÁLEZ-FERNÁNDEZ; SCHMITT, 2017). Not only in the research field, but also in classrooms, was vocabulary not in the center of the debate because it was believed that other aspects of the language, such as grammar, were more important to language development (CHOO et al., 2012). However, as Meara (1980) stated, the lack of vocabulary knowledge is an issue that the students themselves understand as a barrier to their language development. Thus, investigating L2 vocabulary learning is important because vocabulary knowledge affects not only the speaking skill but all the other skills necessary to be fluent in the L2 (listening, reading, and writing) as suggested by Stæhr (2008).

In a theoretical perspective, some aspects are widely discussed in the area. Defining vocabulary or a word and what can be considered vocabulary or a word is one of these extensive debates. As Milton (2003) stated, one of the possible definitions for "word" is: "the units that are separated by spaces in a sentence" (p. 8). However, this is a highly simplistic

view since, as indicated by Barcroft, Sunderman and Schmitt (2011), the way in which words are produced may vary (it can be spoken or written for instance). If spoken sentences are taken into consideration, for example, the first definition would not be suitable. Furthermore, before literacy, children do not know when words begin or finish in a sentence, thus, the first definition proposed would not be suitable either.

Another definition, by Hudson (2010), is that words are concepts which have their own mental properties. The mental properties to most words, according to Hudson (2010), are meaning, realization, word-class, syntactic valency, language, frequency, speaker and addressee, time, and place. Nonetheless, some words might have more properties, such as style-level, speaker type, social relations, emotion, etymology, lexical relations, cognates, and translation equivalents. The speaker might know these properties or not, however, they are still properties of words (HUDSON, 2010).

The definition of what a word is or what can be counted as a word may vary depending on the question one needs to answer. Nation (2001) presents four ways to count words (tokens/running words, types, lemmas, and word families). Tokens are the number of words presented in a sentence, even the repeated words. It is a way of answering questions such as "how many words are there on your paper?". Types are the number of words in a sentence without counting the same word more than once. This definition would help to answer questions such as "how many words do you need to know to read this paper?". However, if the counting of words is related to vocabulary learning, "lemmas" and "word families" would be more suitable definitions (NATION; MEARA, 2007). When counting lemmas, words are understood as the headwords and some of words' grammatical forms and reduced forms. On the other hand, when counting words as word families, it is counted not only grammatical forms but also derived forms. According to Nation (2001), the idea behind counting words as lemmas or word families is associated with the learning burden. The learning burden is related to the effort learners need to make to integrate the new word to their lexicon. Thus, it would be expected that after people learn the word "play", the word "playing" would take less effort for them to learn. Also, if we know what the suffix "less" means, the words "effortless", "meaningless", "careless" would take less effort to learn. Therefore, if words are counted as lemmas or word families, it would be possible to have a better view of one's lexicon without testing every single word in the language.

Moreover, words can be separated into different categories and this can also change how we count words. There are content words, such as verbs, adverbs, nouns, and adjectives and also function words such as articles, prepositions, pronouns, conjunctions, determiners,

among others. In the sentence "I've read this book many times", there would be four words if only content words were counted, for example.

Having this discussion in mind, defining 'word' is a hard task and discussions are usually inconclusive, thus, in this study words will be operationalized as lexical vocabulary (the content words), which consists of units that have lexical meaning (nouns and verbs, for instance), instead of considering also prepositions (*of, to, from*) or auxiliary verbs (*have, do*) as words (MILTON, 2003). In addition, this study takes into consideration "word families" in order to test vocabulary knowledge. This discussion is important in the field of vocabulary studies because when investigating vocabulary, researchers need to evaluate participants' vocabulary knowledge through tests and the selection of the test will be based on what is going to be counted as a word to measure people's vocabulary size.

On the other hand, taking the learner into consideration, aspects such as what it means to know a word are also important. Establishing vocabulary in one's lexicon is not seen as a linear process (BARCROFT et al., 2011). In fact, it is a cyclical one, in which words can be forgotten and learned again, or the knowledge of words can even be deepened across time. Vocabulary knowledge, thus, is not only a matter of the vocabulary size (breadth) one has, but also the quality of what this person knows about the word (depth): in other words, the quality of this vocabulary knowledge (SCHMITT, 2010).

According to Nation (2001), vocabulary knowledge involves knowledge about the form, the meaning, and the use of words. In relation to the form, people would need to know aspects related to the speech (the sounds, and pronunciation, for instance) and written form (the spelling and visual form of the word, for instance). Regarding the meaning, people would need to know concepts and references to this word, also the associations that can be made to other words in people's lexicon. Finally, in relation to the use, people would need to know the collocations of this word, also the grammatical functions and constraints regarding its use. Thus, vocabulary knowledge involves different types of knowledge (pragmatic, grammatical, and phonological knowledge for example). Moreover, it can also interact with L1 knowledge, and be deepened or forgotten through time (CAMERON, 2001; SCHMITT 2010).

Additionally, in an attempt to explain what it means to know a word, Perfetti and Hart (2002) developed a hypothesis. In their hypothesis, Perfetti and Hart (2002), tried to explain what exactly exists in words or people that might affect word processing and consequently affect comprehension. From this question arose the Lexical Quality Hypothesis. This hypothesis consists of the idea that in order to use a word efficiently[6], it is necessary to have a

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[6] According to Perfetti and Hart (2002), efficiency here means rapid retrieval of information.

high quality representation of this word. In the Lexical Quality Hypothesis, just as pointed by Cameron (2001), knowing a word involves different pieces of knowledge. It is possible, for example, for a person to know how to pronounce a word, but to not know the meaning. Perfetti and Hart describe 4 different scenarios regarding word knowledge which demonstrate that people can vary in the quality of their word knowledge: a. when we know how to pronounce a word, have an idea of the meaning, but do not know exactly what it means; b. we cannot pronounce the word correctly; c. we know the meaning of the word and can use it in context, however, sometimes we pronounce it correctly and sometimes not; and the last one d. we can do correctly all the tasks previously mentioned, but sometimes make mistakes in the spelling.

Having this in mind, Perfetti and Hart's hypothesis considers that people have levels of knowledge regarding the words they have in their lexicon. Therefore, in order to have a high quality representation, according to them, people would need to know these 3 components of the word: orthographic (OR), phonological (PH), and semantic (SE). In the orthographic constituent, is the knowledge about how this word is written. In the phonological constituent is the knowledge about the sounds of the word. Finally, in the semantic constituent Perfetti and Hart combined the meaning with the grammatical aspects of the word. The hypothesis focuses on reading and takes into consideration alphabetized people or at least children in the literacy process, since Perfetti and Hart added an orthographic component. Nevertheless, the Lexical Quality Hypothesis can be considered in any modality since "whether by spoken language or by written language, a low quality code retrieved with effort would jeopardize comprehension processes that depend on a high quality representation" (PERFETTI; HART, 2002, p. 190). Moreover, as previously mentioned, Hudson (2010) also discusses other types of knowledge which would influence the quality of representation people have of a word. These different types of knowledge would be in relation to the frequency of the word in the language (speakers know whether a word is more or less frequent in the language), the social relations involved in the use of the word (speakers know in which situations they should use "sir" or "Mrs/Mr"), and style-level (speakers know whether a word is formal or informal, for instance), among others.

Therefore, as argued by Perfetti and Hart (2002), Cameron (2001), and Hudson (2010) knowing a word is a matter of levels instead of knowing everything or nothing. This discussion reveals how complex vocabulary knowledge is. Thus, since sometimes it is possible to know a word but not necessarily all aspects involving this word, it is necessary to make a distinction between receptive and expressive/productive vocabulary. Since learners

will not have the same degree of knowledge of every word in their lexicon and they will not be able to productively use every word in their lexicon, sometimes people will know some words only receptively and sometimes they will be able to use these words productively. Receptive vocabulary, then, is related to recognizing and understanding words while people listen or read, whereas expressive/productive vocabulary refers to being able to use these words in context (GONZÁLEZ-FERNÁNDEZ; SCHMITT, 2017). Acquiring new vocabulary seems to follow a similar pattern among learners, and in this pattern the learner will first acquire receptive vocabulary, and then use it expressively (GONZÁLEZ-FERNÁNDEZ; SCHMITT, 2017). This is an important issue to take into consideration when researching children that are beginning to acquire the L2, since their expressive vocabulary might not be the best way to measure their vocabulary knowledge at this stage.

Finally, it is also important to address the issue of measuring vocabulary knowledge. According to Schmitt (2010), in studies which deal with vocabulary learning (e.g. intervention studies in which participants learn new words), it is necessary to assess pre-existing vocabulary knowledge first, and only then, it is possible to infer that possibly the target-words were learned as a consequence of the intervention. Also, Souza, Duarte and Berg (2015) argue that for research with bilinguals measuring levels of ability and proficiency is important to see if the results are comparable among participants. Furthermore, vocabulary knowledge tests might be useful to teachers because they need to evaluate their students' knowledge prior to planning any intervention or course and also to assess their students' current vocabulary knowledge.

Schmitt (2010) emphasizes that the validity and reliability of the test being used need to be taken into account when choosing a test because researchers, or teachers, need to make sure that they are receiving reliable results. Schmitt (2010) and (SOUZA; DUARTE; BERG, 2015) present one test which is standardized to measure receptive vocabulary knowledge, the Vocabulary Levels Test (VLT). The original version of the VLT is organized into 5 categories and in each category it is presented 6 blocks of 6 words to which the person taking the test needs to match 3 different meanings (SOUZA; DUARTE; BERG, 2015). The subject's task is to find which word (out of the 6 possibilities) can be matched to the 3 meanings (1 word for each meaning) (SOUZA; DUARTE; BERG, 2015). This test is available for free and one of its validations was conducted with face-to-face interviews by Schmitt, Schmitt, and Clapham (2001). In this interview, two interviewers took a 50-word subsample and gave several opportunities to the subsample of participants, who had taken the VLT prior to the interview, to demonstrate their knowledge about the target words. The interviewers carried out the

investigation until they were satisfied that the people had knowledge of the target word. Subsequently, the interviews were compared to the participants' performance on the Vocabulary Levels Test. In this way, it was possible to confirm the validity of the test since they performed similarly in the interview and in the test (SCHMITT, 2010).

Another validation was conducted by Souza, Duarte and Berg (2015) in which they investigated if the test would be suitable to infer language abilities of Brazilian undergraduate students. In this study, 142 undergraduate students took the VLT and a language background questionnaire (which investigated their language trajectory and their experience as English speakers). The participants self-evaluated their language ability and these results were later compared to their performance in the VLT. Moreover, they conducted an inferential analysis to investigate if the original cutoff scores for each level would also fit their population. The researchers discovered that the self-evaluations did not match with the students' performance in the VLT (students who self-evaluated themselves with a higher grade got a low score in the VLT and the opposite also happened) and that the cutoff scores for each level was very similar to the one proposed in the original test. Therefore, Souza, Duarte and Berg (2015) concluded that the test could be used in bilingualism research with L1 being Portuguese and L2 English. Nonetheless, Souza, Duarte and Berg (2015) argued that, in this context, the levels 4 and 5 could be mixed together and that the cutoff score for each level could be 15 (instead of 13 which was in the original test).

There are other possible methods to assess vocabulary knowledge. Some of the examples were listed by Schmitt (2010). The first is the Peabody Picture Vocabulary Test (PPVT). The test consists of sequences of 4 images and words presented orally to the participant. The participant has to choose, among 4 different pictures, the one that is related to the word presented orally by the researcher. Additionally, there is the V_YesNo[7], from Meara and colleagues, which has a yes/no format. The participant will see a word on a screen and choose 'yes' if they know it, and 'no' if they do not know. Schmitt (2010) also reviews other vocabulary knowledge tests[8].

In conclusion, the debate regarding vocabulary is extensive and is important for language development. What a word is and how we can count words are complex issues which require reflection on the questions one is trying to answer and the context people are inserted in. Depending on how vocabulary is counted, the measure is also going to change. In summary, words can be counted and measured in several different ways and sometimes it is a

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[7] For more information see https://www.lognostics.co.uk/.
[8] For more on vocabulary knowledge tests see Schmitt (2010).

matter of choice how to do these tasks. Furthermore, vocabulary knowledge is also an important topic to discuss. Vocabulary knowledge is also complex and involves several different types of knowledge related to phonology, grammar, semantic, among other aspects. Also, it is not a matter of knowing everything or nothing, but instead it is about levels of knowledge. Since vocabulary knowledge is a complex aspect, understanding how vocabulary is learned and what can affect the learning process is also necessary. Therefore, the following subsection is dedicated to the discussion of vocabulary teaching and learning.

2.1.1 L2 Vocabulary Teaching and Learning

Second language (L2) vocabulary knowledge cannot be understood only as an addition to the first language (L1) vocabulary knowledge system (GONZÁLEZ-FERNÁNDEZ; SCHMITT, 2017). Instead, it has to be understood as the connection of aspects that constitute the knowledge and exposure the learner has of these words in different contexts. It is well established that in order to learn new vocabulary, learners need to encounter the word several times in different contexts (CAMERON, 2001). However, there are other aspects that might influence this learning process. These aspects are related to external and internal factors. As the external factors, there are aspects such as the length and frequency of the word being learned, the type of instruction, and setting (naturalistic or foreign environments). As the internal factors, there are the individual differences related to age, memory, and phonological processing for instance.

Regarding the instructional setting, Nation (2011) argues that the most important part of teaching vocabulary is the planning phase. In order for the learning process to be effective, teachers must plan which words they are going to teach and how they are going to teach these words. Thus, factors such as the approach used by the teacher will affect success in the outcome. There are several different approaches for vocabulary teaching. One of the approaches is the use of explicit instruction such as exercises in which students have to relate a word and its meaning; a second example could be implicit instruction such as storytelling and discussions without focusing on specific vocabulary. Depending on the approach used by the teacher, it might have a different influence in the learning process (BUTLER, 2019; RAHMANI; NASRI, 2013; YEUNG et al., 2020).

Furthermore, Nation (2007), proposes four strands which are necessary to develop vocabulary. 1 - Meaning-focused input, which is related to using language receptively. In this strand, learners' focus should be on understanding and gaining knowledge. 2 -

Meaning-focused output, which is related to using language productively. 3 - Language-focused learning, in which the objective is to explicitly teach language features. And finally, 4 - Fluency development, in which learners are encouraged to use everything they have learned in the best way they can. According to Nation (2007), all these strands are necessary to build strong vocabulary knowledge. Thus, in this view, not only the use of one approach is important in the development of L2 vocabulary, instead a combination of methods would be more effective.

Furthermore, Nation (2001) proposes 3 psychological conditions that need to occur in order for vocabulary learning to be successful. The first one is named noticing, which is basically calling attention to a given item, making it explicit to the learners. This can also happen "when learners look up a word in a dictionary, deliberately study a word, guess from context, or have a word explained to them" (NATION, 2001, p. 99). According to Nation, motivation and interest are important aspects for students to notice new vocabulary. The second condition is named retrieval, which is being able to remember a word afterward. This condition is important because "If that word is subsequently retrieved during the task then the memory of that word will be strengthened" (NATION, 2001, p. 103). Finally, the third and last condition is named creative/generative. This condition happens when learners use, see or listen to the words they have previously learned in different contexts. This process is important because each time the learners encounter words they already knew but with different meanings, they will need to reconceptualize that vocabulary and this will help to strengthen their knowledge about that word.

Another aspect that is important when teaching vocabulary is the frequency of words. Depending on the frequency of the word, whether it is a high-frequency or low-frequency word, it will require a different treatment in the classroom (NATION, 2011). Considering L2 teaching environments, students start attending school without enough contact with the L2, thus, learners will need to have contact with high-frequency words of the target language in order to keep improving (NATION, 2011). The same would not happen with native speakers for instance, since they start attending school already mastering most of the high-frequency words in their language, thus, they will need to learn low-frequency words in a variety of contexts at school. In foreign language environments, this scenario is even more noticeable since most students do not have contact with the foreign language prior to attending school, thus, the teacher needs to be aware of the high-frequency words while planning the classes. In relation to the internal factors, age might play a role in learning new vocabulary. According to Butler (2019), there are several abilities that are related to age in terms of development and

thus will influence how someone learns a new word. For instance, Butler mentions "aural processing and capacities, cognitive capacities (e.g.,working memory, inference skills), knowledge and processing of L1, general world knowledge and world experience, and learning environment" (p. 9). Since all the variables mentioned might play a role, it is interesting to make a distinction between children and adults vocabulary learning development.

As previously mentioned, memory also has an influence in vocabulary learning, such as long-term memory (LTM) and working memory (WM). It is well established in the literature that the vocabulary knowledge of people, which is stored in their long-term memory, influences their learning process of new words (GATHERCOLE et al., 1997). However, another aspect of memory that also seems to influence vocabulary learning is WM. WM is defined by Baddeley and Logie (1999) as a system which is responsible for storing and processing information while people are performing cognitively demanding tasks. The subcomponents of this system have demonstrated to have an influence on vocabulary learning, meaning people with higher capacity in their WM perform better than people with lower capacity in their WM (MORRA; CAMBA, 2009; ENGEL; GATHERCOLE, 2012; MOTA; SOUZA, 2016).

Furthermore, other aspects regarding phonological processing might play a role in vocabulary learning. Phonological processing is a broader concept which incorporates other processes, such as speech perception, PA, and phonological short-term memory (PSTM). These processes have demonstrated to play a role in vocabulary learning (ENGEL; GATHEROLE, 2012; GATHERCOLE et al., 1997; GOTTARDO et al., 2008; HU, 2003; NICOLAY; PONCELET; 2013; VAAHTORANTA et al., 2020). For instance, phonological short-term memory, defined as the ability to store and retrieve phonological information for a brief period of time (TREVISAN, 2013), has demonstrated to play a unique role in L2 vocabulary learning. However, there are still inconsistencies regarding the influence of PA on L2 vocabulary learning for instance.

In summary, investigating vocabulary teaching and learning is essential to understand how these processes happen and improve how people learn vocabulary. Regarding the teaching aspects, much is already established in the area such as the influence of word frequency and amount of exposure, however, there is still debate regarding how to teach. Although investigating aspects regarding teaching is important, there is still a lot to understand about how the learning process happens in the learners and how the variability among learners may interfere in vocabulary learning and consequently in teaching as well.

Therefore, the following subsection is dedicated to review and compare empirical studies in L2 vocabulary learning research.

2.1.2 Empirical Studies on L2 Vocabulary Learning

There are several empirical studies which focus on teaching methods that might affect vocabulary learning. The studies vary in population, methods, number of intervention sessions, participants' L1, and also in the tests conducted to evaluate vocabulary knowledge. Tonzar, Lotto and Job (2009), for example, investigated the effects of picture-based (picture-L2 word association) and word-based (L1-L2 word translation) learning methods in children learning English and German as foreign languages. Tonzar, Lotto and Job also investigated the role of cognates and noncognates in the learning process of new words. The participants were children from the fourth and eighth grade. The results demonstrate that picture-based learning was more effective than word-based learning in all the conditions (for younger and older learners, and with cognate and noncognate words). Moreover, cognate words were also easier to learn for both groups, fourth and eighth graders, and in both foreign languages included in the study, English and German. These results demonstrate that cognate words and visual input facilitate word learning in foreign languages.

In the same line, investigating types of instruction, Yeung, Qiao, and Tsang (2020) conducted an intervention study with Chinese kindergarten children (4-6 years old), native speakers of Cantonese, learning English as a foreign language. There were four intervention sessions in which the researchers taught 16 words through the use of 4 different storybooks. The frequency of the target-words was controlled in the study. There were two groups, the experimental group, which received explicit instruction, and the control group, which received implicit instruction. All groups used the same 4 storybooks, the difference was in the activities performed alongside with the book. In the experimental group they had activities that focused on the target words, whereas in the control group they engaged in discussions and games related to stories but not specifically about the target words.

In their results, Yeung et al. (2020), identified that the experimental group performed better in receptive and expressive vocabulary knowledge of the target words. Also, the experimental group was more able to enhance general vocabulary knowledge in comparison to the control group. These results support evidence of other studies which focused on different populations, such as adults (LAUFER; ROZOVSKI-ROITBLAT, 2011). Therefore,

it is possible to infer that explicit vocabulary teaching, alongside picture-based methods, plays an important role in L2 vocabulary learning.

However, there is also evidence highlighting the importance of implicit learning for vocabulary development. In two studies conducted by Dickinson et al. (2019) the results pointed that implicit learning was especially important for students with stronger vocabulary knowledge. They investigated the effectiveness of both implicit and explicit learning with children from preschool and kindergarten. Their L1 background varied but all of them were learning English in an immersion context. Dickinson et al. (2019) highlighted in their results that in the condition where they had implicit learning, children also acquired target-words and the gain was equivalent to the other groups in which children received explicit instruction. They argued that this might be related to the use of the target-words in the teachers' comments when clarifying events of the story. Therefore, it seems that implicit learning, depending on the exposure, might also enhance students' vocabulary development. These results corroborate the findings in Gao, Wang, and Lee (2020), that found evidence that implicit learning, storytelling in their study, had better results in vocabulary learning by children assessed with delayed post-tests.

On the other hand, there are also studies which investigate the internal factors previously mentioned. In a study conducted by Mota and Souza (2016), children from sixth grade were tested in relation to their WM and vocabulary knowledge and subsequently taught 10 new L2 words. Their results demonstrate that WM was positively correlated to vocabulary learning, especially the phonological subcomponent of the system. This finding is in line with other studies which also demonstrate positive correlations of the subcomponents of WM and L2 vocabulary learning. For instance, Engel and Gathercole (2012), investigated the role of phonological (PSTM and PA) and executive processes in L1, L2, and L3 language learning in children. In their study, they found evidence which differentiate the language domains which are influenced by PSTM and PA, showing that these processes are linked somehow but also unique for language development. Whereas, PSTM demonstrated to be associated with vocabulary learning in L1 and L2, PA demonstrated to be associated with word decoding, spelling, and also demonstrated to have links with the L3 development. It is worth highlighting that, in this study, the L1 (Luxembourgish) was phonologically similar to the L2 (German), whereas the L3 (French) was the most phonologically different language. This could explain the lack of influence of PA in the L2 since the phonological aspects of the L2 were not too different from the participants' L1.

The association of PSTM and PA in vocabulary learning has been investigated by other researchers as well. In two studies reported by de Jong, Seveke and van Veen (2000), Dutch kindergarten children were tested regarding their L1 PA and PSTM. The participants also received vocabulary instruction for words and nonwords. In the first study, the results strongly indicated that PA contributes to learning words with unfamiliar sounds. Also, de Jong and colleagues found that PSTM only had an influence on vocabulary learning when verbal intelligence and letter knowledge was not controlled for. In the second study, de Jong and colleagues also conducted a PA training with the children in order to investigate if growth in PA development would affect vocabulary learning. The results indicate that the PA training enhanced PA development and in turn, PA skills contributed to learning words with unfamiliar sounds.

In the same line, Farnia and Geva (2011) conducted a longitudinal study in which they investigated the relationship between PA and PSTM on vocabulary learning but in English language learners (ELL). The participants of this study were children from different L1 backgrounds (Punjabi, Tamil, and Portuguese) and they were learning English as their L2 at school in an immersion context. In their study, the researchers compared the development of ELL children to English monolingual (ELI) children. The results demonstrated that in both groups, PSTM and PA predicted vocabulary knowledge. However, PA did not demonstrate unique variance in vocabulary knowledge. Nonetheless, other researchers found evidence which contrasts with these findings (HU, 2003; GOTTARDO et al., 2008).

Therefore, vocabulary learning might be affected by several different variables, both internal and external. As previously discussed in Nation (2007), in order for the learning process to be effective, it might involve different approaches. According to the pieces of research reviewed, both explicit and implicit learning have positive empirical evidence and play a role in vocabulary learning. Nonetheless, implicit learning demonstrated to be more effective in learners with stronger vocabulary knowledge. Moreover, visual aid and cognate words might facilitate learning (when compared to L1-L2 translation and noncognate words). Regarding the internal factors, vocabulary learning can be influenced by WM, PSTM, and PA. However, since the role of PA on vocabulary learning is still inconclusive, the following subsections are dedicated to clarify the concept of PA in its influence on vocabulary learning.

2.2 PHONOLOGICAL AWARENESS: THEORETICAL ISSUES

Phonological awareness (PA) (or phonological sensitivity[9]) can be defined as the ability to recognize and manipulate the sounds of a word independently of its meaning (HU, 2003). Saiegh-Haddad (2019) also defines PA as "a primarily metalinguistic ability" (p. 2). For Saiegh-Haddad (2019), PA "is defined as awareness of the phonological structure of spoken words and the ability to access and manipulate phonological structure" (p. 2). Additionally, PA consists of levels: syllable awareness, rime-onset awareness, and phonemic awareness (KIVISTÖ-DE SOUZA, 2016). Also, the development of this ability is influenced by several other aspects such as genetics, memory, vocabulary, and experience with the oral language (ANTHONY; FRANCIS, 2005).

One important distinction that can be made here is between PA and phonemic awareness. Phonemic awareness is related to the ability that a child has to understand that a word can be broken in subcomponents (the phonemes). PA, on the other hand, is a broader concept in which phonemic awareness is one of the factors (WOOD; TERRELL, 1998). PA is part of a broader concept named phonological processing (ANTHONY; FRANCIS, 2005). In this concept, besides PA, the following aspects are involved: phonological memory, which is the coding of information represented in sounds for a limited period of time, and phonological access to lexical storage, which is related to the ability people have to retrieve a phonological code from memory (ANTHONY; FRANCIS, 2005).

Furthermore, PA can be measured through several different tasks. Kivistö-de Souza (2016) synthesized the tests that are usually used in research regarding L1 and L2 PA. In Kivistö-de Souza's (2016) review, in relation to L1 PA, the tasks are divided into 4 categories (manipulation, comparison, analysis, perception, and production). According to Kivistö-de Souza (2016), manipulation tasks (segmentation, blending, adding, deleting, substituting, and exchanging) are more frequently used in research about L1 PA. Regarding L2 PA, Kivistö-de Souza's (2016) review identified 2 categories in relation to L2 PA tasks that have been used in research. In the studies reviewed, L2 PA was seen and measured as implicit or explicit knowledge. Predominantly, the studies reviewed tested the participants' abilities through oral production in which they would have to explicitly talk about their performance in an oral task (e.g. listen to their own speech and comment about it or keep a journal in which they would write about their thoughts in relation to their learning process). Nonetheless, there were also studies that employed manipulation tasks to measure L2 PA. However, Kivistö-de Souza (2016) argues that although manipulation tasks work with children (which are still in the process of learning how to read, for instance), it is not suitable for adults since these tasks are

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[9] Studies such as Nicolay and Poncelet (2013) operationalize PA as phonological sensitivity.

not performed consciously anymore in adulthood. Also, according to Kivistö-de Souza (2016), it is not suitable to test children and adults in the same way since these groups differ largely cognitively.

Furthermore, according to Anthony and Francis (2005), PA seems to be developed in a specific pattern. The general sequence would be from larger units to smaller ones. In other words, first children would be able to detect and manipulate syllables before they are able to detect and manipulate rhymes, and so on. This view is supported by Cisero and Royer (1995) who found evidence that supports this developmental progression hypothesis. In their study, the ability (recognizing and manipulating rhyme, initial phonemes, and ending phonemes) of kindergarten children changed over the years, with children from the first grade still doing very well in rhyme tasks, but also improving in initial and final phonemes tasks (which hypothetically are supposed to be harder tasks).

Cisero and Royer (1995) argue that if indeed PA follows this pattern, it might have implications for education since it would allow teachers to better understand how to assess and control students' development. However, this development is not simply incremental and linear. On the contrary, some skills can be improved while others are being acquired (ANTHONY; FRANCIS, 2005). For example, people can improve their similar and dissimilar-sounding words detection while still learning how to segment syllables. Additionally, in terms of how PA is acquired by children, it seems that some aspects are prior to literacy (CAPOVILLA; DIAS; MONTIEL, 2007), or even independent from literacy. Therefore, it is expected that children start school with some degree of PA and this development will improve as they begin to learn how to read.

Nonetheless, the development of PA is also influenced by the language. Readers of more transparent languages[10] (e.g. German) develop phonemic awareness faster than more opaque languages (e.g. English) (ANTHONY; FRANCIS, 2005). Furthermore, Anthony and Francis (2005) argue that speakers of languages with highly salient syllables[11] (e.g. Portuguese and Italian) will probably develop syllable awareness faster than languages in which syllables are not salient in spoken language (e.g. English). Nonetheless, the idea of high or low saliency of syllables will be more dependent on perception or even on the L1 of who is analyzing. Anthony and Francis (2005) also state that the same will happen with the

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[10] Transparent languages are the languages in which the grapheme-phoneme correspondence is consistent. This is in contrast to opaque languages, in which this correspondence is inconsistent (SOARES, 2016).
[11] According to Anthony and Francis (2005), high saliency is "determined by a number of factors including clarity of boundaries between syllables" (p. 256).

saliency and complexity of syllable of languages, which will influence the development of syllable and phoneme awareness. Thus, both written and spoken language are variables which will affect PA's development.

Another aspect, which is also investigated regarding PA, is the bilingual experience. The main issue is if there are any advantages for bilinguals in terms of PA development. In the literature, there is evidence indicating that the advantage does not exist (GORIOT et al., 2019). In a cross-sectional study, Goriot et al. (2019) investigated Dutch children enrolled in schools in which English as a foreign language teaching (EFL) started in kindergarten. In their study, they had 3 groups (Dutch monolingual children, Dutch children enrolled in early-English schools, and Dutch-English bilingual children). The main question was regarding the effects of early EFL on PA skills. Also, if there was an effect, whether they would be positive or negative. The results indicated that there was not a significant difference regarding PA abilities among the groups. The differences, when they occurred, were restricted to some tasks (onset phoneme identification and phoneme deletion) and sometimes the differences even disappeared when accounting for individual differences (WM and STM). In summary, their study did not find any advantage for the bilingual group in relation to the other groups.

However, there is also evidence in the literature pointing in the opposite direction; in other words, that there is a bilingual advantage for PA development (VERHOEVEN, 2007). In a longitudinal study conducted by Verhoeven (2007), Turkish immigrant children living in the Netherlands (around 5 years old) were tested in terms of L2 PA and language proficiency in order to investigate the relationship between bilingual development and PA. In fact, these children were part of what Verhoeven called "second generation of immigrants" (p. 428) since they were born in the Netherlands but had Turkish parents. In relation to the contact with the L1, children had contact with their L1 (Turkish) through their mother who was, in most cases, monolingual. Regarding their L2 (Dutch), the contact happened through formal education at school and in interactions with Dutch friends.

After data collection, the children were divided in 4 groups in relation to their scores in proficiency levels (high L1/L2, high L1/low L2, low L1/high L2, and low L1/L2). When comparing these groups with the PA tasks results, Verhoeven showed that children with high L1 and L2 scores performed better in all PA measures (rhyming, word objectification, phoneme segmentation, and word blending). Nonetheless, this study did not have a control group of monolinguals to compare with, as in Goriot et al. (2019), which could change the results. By only comparing groups of bilingual children, it is not possible to infer that they

would have advantages over monolingual children for instance. Thus, the results show only that proficiency might play a role in PA development because it is only from the perspective of the bilingual. Therefore, this study cannot account for the comparison between people who speak only one language and people who speak more than one language. Additionally, there is also evidence in research showing that a cross-language transfer from L1 PA skills to the L2 PA skills can occur (ANTHONY et al., 2014; DURGUNOĞLU et al., 1993; GORMAN, 2011) which, as pointed by Kivistö-de Souza (2016), can be seen as a bilingual advantage in terms of PA development.

Bilingual PA was also analysed in a meta-analysis conducted by Branum-Martin et al. (2012). In their study, Branum-Martin and colleagues argue that there are features which if not taken into account can lead to misinterpretation of the findings regarding the cross-language nature of PA. These features are related to age, language, and psycholinguistic grain size[12]. The criteria for inclusion in the meta-analysis studies were having English as one of the languages in the pair analysed, the participants' age range had to be from 3 to 14 years old, and the studies had to be written in English or Mandarin/Chinese.

The results indicated that the correlations found in the studies reviewed varied greatly depending on the language being analysed (from .38, in Mandarin, to .86, in French). Branum-Martin and colleagues concluded that in alphabetic languages, the cross-language consistency is higher in relation to PA measures in comparison to non-alphabetic languages (Mandarin and Cantonese in this study). In other words, there seems to be more cross-language interaction in languages that have alphabetic systems. Regarding age, in general, the effect was negative, however it was not strong. According to Branum-Martin and colleagues, this means that, as children get older, cross-language correlations might get lower. Therefore, this study demonstrates that it is important to take into account some aspects, such as age and the language pair, when investigating cross-language interactions of PA and especially when generalizing findings.

In relation to other abilities that are influenced by PA, there is strong evidence in the literature of a relationship between PA and reading abilities. Results of different studies have shown that it is one of the main predictors of reading acquisition in the case of monolingual children and it also plays a role in L2 reading acquisition (ANTHONY; FRANCIS, 2005; DURGUNOĞLU et al., 1993; CISERO; ROYER, 1995; LESAUX; SIEGEL, 2003;

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[12] Psycholinguistic grain size refers to the consistency of spoken language and writing systems. The consistency, or inconsistency, might affect the grain size of lexical representations and consequently affect the process of learning how to read (ZIEGLER; GOSWAMI, 2005).

QUIROGA, 2002; SCHAARS et al., 2019), especially phoneme awareness. Recognizing phonemes is a fundamental skill to make the grapheme-phoneme relation when children begin to learn how to read alphabetic languages. Thus, it facilitates the process to decode print (LANE et al., 2002). In fact, the relationship between literacy and PA development is reciprocal. Written language has a strong influence in PA in the same way PA has a strong influence in literacy acquisition, especially regarding phoneme awareness (ANTHONY; FRANCIS, 2005). In other words, PA is a necessary ability to learn how to read, nonetheless, as people learn how to read they also develop their PA skills.

However, not only does learning how to read influence the development of PA and is influenced by PA, vocabulary growth also seems to play a role in this process (GORMAN, 2011; ANTHONY et al., 2014). According to the Lexical Restructuring Model, developed by Walley and Metsala (2003), as children learn new words, their lexicon needs to be restructured to fit the new phonological features. Thus, as children's vocabulary size grows, their PA skills, in theory, grow as well. Some empirical studies have investigated the relationship of vocabulary knowledge and PA and found positive correlations between the two concepts.

Gorman (2011) investigated the relationship between vocabulary size, PA, and WM. In her study, Spanish kindergarten speakers learning English were assessed in terms of PA, vocabulary size, and WM. All of the tasks were administered in both languages (Spanish and English). Additionally, Gorman conducted an intervention of short-term L1 PA instruction with the participants. In the results, vocabulary and WM demonstrated to be related to PA gains. Interestingly, L1 PA gains were highly and positively correlated to L1 vocabulary size, whereas L2 PA gains were not correlated to L2 vocabulary size. In fact, L2 PA was correlated to L1 vocabulary size. Gorman (2011) reasoned that L2 PA, then, is more influenced by total vocabulary size.

In the same line, Anthony et al. (2014) conducted a longitudinal correlational study in which they investigated the role of vocabulary size and letter knowledge in the development of PA. The participants of the study were kindergarten Spanish-speakers who were learning English as an L2 as well and they were tested in terms of L1 and L2 PA (measured through elision tasks) and L1 and L2 letter knowledge. The results corroborate with Gorman's (2011) findings since L1 vocabulary knowledge predicted L2 PA. Therefore, it seems that indeed vocabulary knowledge influences PA development.

In conclusion, PA is an important construct which influences and is influenced by literacy acquisition as well as vocabulary learning. PA is part of a broader concept which is

related to other phonological abilities (ANTHONY; FRANCIS, 2005), such as PSTM and speech perception, among others. Also, there are several ways in which PA can be measured. Mostly, studies have relied on manipulation tasks (e.g. blending and deletion) to measure L1 PA and on oral production and explicit knowledge to measure L2 PA (e.g. journaling learners' process) (KIVISTÖ-DE SOUZA, 2016). Furthermore, PA follows a typical pattern in terms of acquisition, from larger units to smaller ones (ANTHONY; FRANCIS, 2005; CISERO; ROYER, 1995). In relation to bilingual advantage in PA development, there are still inconsistencies in the findings (GORIOT et al., 2019; VERHOEVEN, 2007). Finally, although the positive relationship between PA and literacy is well established in the literature (LESAUX; SIEGEL, 2003; QUIROGA, 2002; SCHAARS et al., 2019), the same does not hold for vocabulary learning. Thus, the following subsection is dedicated to reviewing empirical studies regarding PA and L2 vocabulary learning.

2.2.1 Phonological Awareness and L2 Vocabulary Learning: Empirical Studies

Regarding vocabulary learning, although some studies have demonstrated no correlation between PA and vocabulary learning (NICOLAY; PONCELET, 2013), there is also evidence showing that PA predicts vocabulary learning in L2 (HU, 2014; KALIA et al., 2018, SPECIALE et al., 2004). It is argued that children with poorer PA will be slower when acquiring new vocabulary (HU, 2008). However, the findings in research are inconclusive since some studies demonstrated correlation between L1 PA and L2 vocabulary learning (HU, 2014; KALIA et al., 2018), others between L2 PA and L2 vocabulary learning (GOTTARDO et al., 2008), some did not find this correlation (NICOLAY; PONCELET, 2013) and others even argue for a universal phonological mechanism underlying L2 vocabulary learning (MARECKA et al., 2017).

On the one hand, in a longitudinal study, Nicolay and Poncelet (2013) investigated phonological and cognitive abilities which might be involved in L2 vocabulary learning. The participants were French-speaking kindergarten children enrolled in an English immersion program. They were tested in terms of L1 vocabulary knowledge (as a control variable), L2 vocabulary knowledge, L1 PA, speech perception, and PSTM. Also, Nicolay and Poncelet administered tests regarding attentional/executive skills, such as inhibitory control, mental flexibility, and auditory selective attention. The participants were tested in T1, T2 (one year later in relation to T1), T3 (two years later in relation to T1). The results indicated that PSTM highly correlated with the L2 productive vocabulary in T1, T2, and T3, and with L2 receptive

vocabulary in T2. Additionally, speech perception also correlated with L2 vocabulary measures. However, PA did not correlate with any L2 vocabulary measure. In this study, phonological processing (PSTM and speech perception) was more closely related to L2 productive vocabulary and attentional/executive skills to L2 receptive vocabulary.

On the other hand, in a longitudinal study conducted by Hu (2008), for instance, children (around 8 years old) were also tested regarding their L1 PA (deletion, initial phoneme, rhyme, and spelling), but they also experienced L2 vocabulary learning sections (they learned four new colors). The results demonstrated that children from the group with lower PA took longer and were less accurate to acquire new vocabulary. Corroborating to Hu's (2008) results, Kahlia et. al (2018) also found evidence supporting that L1 PA predicts L2 vocabulary. In their study, 86 children (5-11 years old) were recruited from a dual immersion program (43 native English speakers and 43 Spanish native speakers) in the United States. They performed tests of L1 and L2 vocabulary knowledge (the Peabody Picture Vocabulary Test, PPVT-IV, for English, and the Test de Vocabulario en Imagenes Peabody, TVIP, for Spanish), L1 PA (blending and elision tasks from the Comprehensive Test of Phonological and Print Processing), and executive function (Lexical Stroop Sort, LSS, task).

The results indicate that the elision task was positively related to both, L1 and L2, receptive vocabulary, even when controlling for age, parent education, and L1 vocabulary. However, it is important to highlight that the age range in this study was high – the participants were from kindergarten until 4th grade, thus, reading ability also influenced their phonological sensitivity. This finding is in line with the same type of evidence in other pieces of research (e.g., GOTTARDO et al., 2008; HU, 2003; HU, 2014; LUND et al., 2015). Nevertheless, there is still divergence regarding which PA (in L1 or L2) has more influence on vocabulary learning, since in some studies L1 PA predicted L2 vocabulary learning (e.g., HU, 2003; HU, 2008) and in others, L2 PA predicted L2 vocabulary learning (e.g., GOTTARDO et al., 2008; MARECKA et al., 2017).

In another longitudinal study, Gottardo et al. (2008) investigated L1 PA in Spanish and L2 PA in English, phonological short-term memory, and phonological access in relation to L1 and L2 vocabulary learning and word reading. The participants were Spanish-speaking children learning English in an immersion context. After the tests, the participants were divided in two groups, average or low scores on L2 vocabulary, word reading, and pseudoword reading. Then, they were classified in three different groups: low performance in Grade 1 and 2, low performance in Grade 1 and average performance in Grade 2 (improvers), and average performance in Grade 1 and 2 (consistently average).

The results indicated that L2 PA and L1 vocabulary predicted L2 vocabulary performance. Additionally, children with higher L2 PA in the pretest, in grade 1, were more likely to be in the consistently average group in grade 2. However, Gottardo et al. (2008) do not discuss these results further in the study. In general, according to Gottardo et al (2008) "L2 measures are more likely to differentiate between children who improve and children whose performance remains consistently low" (p. 20). Also, few studies make a distinction of L1 and L2 PA, which hinders the understanding of how these different PA concepts might affect L2 vocabulary learning (or even L2 reading acquisition).

Another study, conducted by Marecka et al. (2017), investigated the phonological mechanisms that underlie children's vocabulary learning process. Their main question was if vocabulary learning was due to a universal segmentation mechanism or phonological mapping. Universal segmentation would be language universal, thus, would predict vocabulary learning in any language whereas phonological mapping would be language-specific. In their research, 44 Polish third graders (around 9 years old) were tested regarding L1 and L2 PA (Polish and English, respectively), English vocabulary size, nonverbal intelligence (Raven's Colored Matrices Test), and PSTM (Polish digit span and backward digit span tests). The participants also performed nonword learning tasks in which the target-words had the following pattern: L1-like words, L2-like words, and LX-like words (nonexistent language). According to Marecka and colleagues, their results were much more complex than expected. When comparing the overall scores in the nonwords learning tasks, the L1-like nonwords were the easiest to learn, followed by L2-like words, and LX-like words. The L2 PA measures (especially the elision task) predicted L2-like and LX-like word learning. However, L2 PA measures only predicted vocabulary learning for participants whose L2 vocabulary size was small.

Therefore, Marecka et al. (2017) concluded that "familiarity with the phonological structure of a language facilitates word learning in this language" (p. 26). However, Marecka and colleagues claim that rather than showing a relationship between PA and vocabulary learning, this finding demonstrates a relationship between universal segmentation and vocabulary learning since the PA measure in this study did not predict nonword learning in children who had a more developed English vocabulary and L1 PA did not predict L1 vocabulary knowledge. Marecka and colleagues argue, then, that vocabulary learning is a result of both, language-specific and language-universal mechanisms.

These discrepancies in relation to previous studies (HU, 2003; HU, 2008) according to Marecka and colleagues, could be due to the language pair being analysed, Mandarin

Chinese-English in Hu's (2008) study, and Polish-English, in Marecka's et al. (2017) study. Marecka and colleagues stated that the tests used in Hu's (2003; 2008) studies might have tackled the universal segmentation mechanism since the tests required phoneme segmentation and this is not a natural feature of Mandarin Chinese because it is a non alphabetic language. Nonetheless, Kahlia et al. (2018) analysed the Spanish-English pair, which are both alphabetic languages, and the results were in the same line as Hu (2008). However, Kalia and colleagues did not test children for L2 PA and, therefore, could not compare these two measures in order to see which one would predict L2 vocabulary learning. Therefore, the results from different studies seem inconclusive, whereas in some studies L1 PA predicted L2 vocabulary and in others L2 PA predicted L2 vocabulary.

As previously mentioned, although several pieces of research that explore the relationship and influence of PA and vocabulary learning in second/foreign language contexts do not make a distinction between L1 PA and L2 PA, Saigeh-Haddad (2019) claims that these two concepts cannot be seen as the same thing. According to the Saigeh-Haddad, L2 PA is not only a language-independent metacognitive ability (which is the common definition to this construct), but it will also be "affected by two language-specific linguistic factors: a) L2 oral language proficiency; and b) linguistic distance between L1 and L2" (p. 2). Thus, since this distinction might play a role in the outcome, testing PA in both languages might provide different results.

In conclusion, it seems that PA might have an influence on L2 vocabulary learning. Some studies which investigated this relationship found positive relations between PA and L2 vocabulary learning (HU, 2008; KALIA et al., 2018, SPECIALE et al., 2004). However, the pieces of study vary greatly in terms of PA tests, L2 vocabulary tests, and intervention treatment phases. Furthermore, it is still not a consensus which PA, in L1 or L2, predicts L2 vocabulary learning since some studies have found evidence for the former and some for the latter. In fact, only two studies were found that differentiated L1 and L2 PA in the measures (GOTTARDO et al., 2008; MARECKA et al., 2017) when investigating vocabulary learning.

However, in the former study, it was not investigated further the relationship of L2 PA and L2 vocabulary learning, it was only briefly stated that L2 PA had influence on L2 vocabulary learning. Also, the participants were in an immersion context. In the latter study, Marecka et al. (2017), investigated the Polish-English pair in a foreign language environment. However, the learners started formally studying the L2 in the first years of school and had been in contact with the language for 3 years by the time of data collection.

Nicolay and Poncelet (2013) argue that L2 development depends strongly on the environment people are learning this L2 and the context this person is inserted in. Therefore, we must be careful when transferring conclusions of one context to the other since this variable might change the results. The question which still remains, then, is if the same results would be found in contexts in which children started studying English later in their school years, such as in many schools in Brazil. Would the influence of L1 and L2 PA still be positive on L2 vocabulary learning?

Having this in mind, the purpose of the present study was to investigate the influence of L1 PA as well as L2 PA on L2 vocabulary learning in older children (around 11 years old) whose L1 is Portuguese and L2 is English. Also, the focus was on foreign language environments, in which children do not have so much contact with the L2. In other words, my aim was to investigate to what extent L1 PA (Portuguese) and L2 PA (English) predict L2 vocabulary learning in children in foreign language environments. In order to achieve this objective, the next chapter is dedicated to explain the method of the present study.

3. METHOD

Having presented the theoretical background, this chapter presents the study conducted. The chapter is organized into 6 major sections and 5 subsections. Section 3.1 presents the objectives, research questions, and hypotheses. Section 3.2 presents the general design of the study. Section 3.3 presents the participants' profiles. Section 3.4 presents the instruments for data collection and it is followed by 6 subsections explaining the tests and the L2 vocabulary learning treatment sessions. Section 3.5 presents the procedures adopted to conduct the study and it is followed by 1 subsection explaining the procedures for face-to-face data collection and online data collection. Section 3.6 presents information about the Ethics Review Board. Section 3.7 presents the pilot study. Finally, section 3.8 presents a discussion about open science: pre-registration and open data.

3.1 OBJECTIVES, RESEARCH QUESTION, AND HYPOTHESES

The main objective of this research was to investigate whether L1 (Portuguese) and L2 (English) phonological awareness predict L2 receptive vocabulary learning in 6 children attending the 6th grade in a public school in Florianópolis[13]. Moreover, having discussed the previous issues, my research questions and hypotheses are:

R1: Does phonological awareness in L1 (PT) predict the acquisition of receptive vocabulary in L2 (ENG) in children?

H1: Children with higher phonological awareness scores in their L1 will outperform children with lower phonological awareness scores in their L1 after vocabulary learning treatment.

This hypothesis is based on Hu (2003), Hu (2008), and Lund et al. (2015) who argue and show evidence that L1 phonological awareness can predict L2 vocabulary learning.

R2: Does phonological awareness in L2 (ENG) predict the acquisition of receptive vocabulary in L2 (ENG) in children?

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[13] As previously mentioned in the introduction, the study was conducted in this specific school because of communication problems (due to COVID-19 pandemic) and time constraints. Moreover,, the number of participants was small also due to time constraints since I did not have much time to recruit participants. Also, some students could not participate because their legal tutors did not allow them to participate in the present study.

H2: Children with higher phonological awareness scores in their L2 will outperform children with lower phonological awareness scores in their L2 after vocabulary learning treatment.

This hypothesis is based on Gottardo et al. (2008) who argue and show evidence that L2 phonological awareness can predict L2 vocabulary learning.

3.2 GENERAL RESEARCH DESIGN

In order to answer the research questions and test the hypotheses, the present study had a pre-test, intervention, and post-test design, as in Figure 1. The study was conducted in three phases: 1 - Phase 1: Battery of pre-tests (receptive vocabulary in L2, phonological awareness in L1 and L2, phonological short-term memory, and working memory). 2 - Phase 2: Intervention, in which ten words related to food were taught. 3 - Phase 3: Receptive vocabulary in L2 test.

Figure 1 - Study design
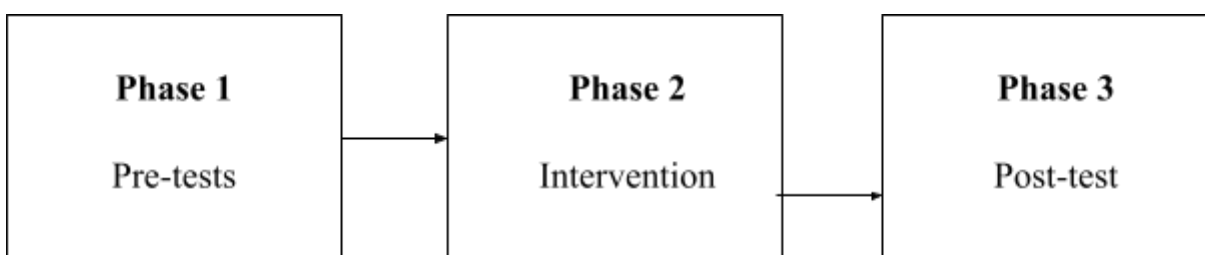
3.3 PARTICIPANTS

The participants were 6 children (all female) from the 6th grade of elementary school, aging from 11-12 years old (*Mage*= 11, *SD*= 0,516), who had English as part of their curriculum. They were from a public school in Florianópolis - Santa Catarina. The school and students were invited and agreed to voluntarily participate in the present study. The participants were children with no reported hearing or learning impairment. It is important to highlight that this study took place during the pandemic of COVID-19. More specifically, the data collection of the pilot took place when the schools were doing remote classes and the official data collection took place when the classes had just resumed in person.

All children had Brazilian Portuguese as their L1 and English as their L2. They were also taking a regular course in the school in 3 other languages (Spanish, German, and French).

Regarding their contact with the L2, 66,66% of the participants reported that they have never been enrolled in a private English course. The other 33,33% of the participants reported that they were enrolled in a private English course. One of the participants said she had been enrolled in a private course since she was 5 or 6 years old, and the other said she had been enrolled since the end of 2021 (around 5 or 6 months). All the participants started learning English in regular school in 6th grade. Moreover, 50% of the participants reported they moderately use English outside the school, 33,33% reported they often use English outside school, and 16,66% reported they use English outside school very little. Nonetheless, all the participants reported they use English outside school. They mentioned they used English while playing games, watching movies, listening to songs, and surfing on the internet.

Participants were required to take the Vocabulary Levels Test (VLT) in order to assess their English proficiency. Table 1 shows the percentage of correct answers that each participant had in the VLT, which indicates that all the participants scored less than 85% in the 2nd 1000 word level. This study is in line with previous studies conducted at LabLing which considered less than 85% in the 2nd 1000 word level as low vocabulary knowledge (de SOUZA, 2015).

Table 1 - Scores in percentage of all the participants in the VLT

Participant	VLT[1]
K680	70%
M246	53%
G680	50%
E246	50%
F468	47%
I246	37%

Source: the author.

[1]Vocabulary Levels Test

All children were required to sign the *Termo de Assentimento Livre e Esclarecido* (TALE, Appendix A face-to-face data collection, Appendix B remote data collection), and their parents or guardians were required to sign the *Termo de Consentimento Livre e Esclarecido* (TCLE, Appendix C face-to-face data collection, Appendix D remote data collection) in order to participate in the study.

3.4 INSTRUMENTS

In this study, 6 instruments of data collection were used. Prior to the first phase of the study, the participants answered a questionnaire related to their language background. The first phase of the study consisted of batteries of tests which were performed by the participants, as following: 1. Receptive vocabulary in L2 (The Vocabulary Levels Test and a Picture Matching test); 2. Phonological awareness in the L1 (*Prova de Consciência Fonológica por Produção Oral*); 3. Phonological awareness in the L2 (Queensland University Inventory of Literacy); 4. Working memory (Numbers and Letters Sequence Subtest); 5. Phonological short-term memory (words and nonwords repetition). In the second phase of the study, an intervention of vocabulary learning in the L2 was conducted. Finally, in the third phase, the participants performed the post-test of vocabulary in the L2 (Picture Matching test). All the instructions of the tests were given in Portuguese.

3.4.1 Personal language background questionnaire

In order to understand and have more information about the contact that the participants had with the L2, they were required to answer a personal language background questionnaire (Appendix E).

3.4.2 Receptive vocabulary in L2

In order to measure children's receptive vocabulary in L2, the Vocabulary Levels Test (VLT) and the Picture Matching Test, the former adapted by Mota and Souza (2016) and the latter created by the same authors, were used. There were two tasks to assess receptive vocabulary in L2 and to confirm that the participants did not know the target words of the study.

a) The Vocabulary Levels Test (VLT, Appendix F). This test was created by Nation (1983) and revised by Schmitt et al. (2001). It is a free test available in several different languages for L1 and L2 assessment. However, there is not a version of the VLT to assess English as an L2 for native speakers of Portuguese. Therefore, this study used an adaptation of Mota and Souza (2016). This task was conducted in order to evaluate the vocabulary the participants already had. It was expected that the

participants were all beginners. The test consists of levels of 1,000 words, which go from the most frequent word families to least frequent word families in English. The adaptation contains 4 levels: the 2nd 1,000 word level, the 3rd 1,000 word level, the 5th 1,000 word level, and the 10th 1,000 word level. Thus, the second level contains the second 1,000 most frequent word families in English, the fifth level contains the fifth 1,000 most frequent word families in English and so on. Also, in the adaptation, a sample of 60 words was taken from the 2nd level. The maximum score was 30. In this task, children had to choose the correct meaning for the word. For example, they had six options of words but only three options of definitions, and they had to choose the correct one, as in the example below:

Vocabulary Levels Test

Instrução: Esta é uma tarefa de vocabulário. Escolha a palavra certa para cada significado. Escreva o número da palavra na linha do significado correspondente. Como no exemplo:

1 business   _____ Uma parte da casa

2 clock   _____ Um animal com quatro patas

3 horse   _____ Algo usado para escrever

4 pencil

5 shoe

6 wall

Você pode responder da seguinte maneira:

1 business   __6__ Uma parte da casa

2 clock   __3__ Um animal com quatro patas

3 horse   __4__ Algo usado para escrever

4 pencil

5 shoe

6 wall

b) Picture Matching Test (Appendix G). This task was developed at the *Laboratório da Linguagem e Processos Cognitivos* (LabLing) at *Universidade Federal de Santa Catarina* (UFSC) in order to assess participants' vocabulary knowledge. This task was conducted to evaluate if children already knew the target words for this study, as in Mota and Souza (2016). In this task, children had to match the word and its picture. For example, they saw pictures of an apple, a banana and a toy and they had to match with the correct word for this picture among four options (see the example below). All pictures had a matching word. The instructions were given in Portuguese. They received scores as the results. This test was administered twice, prior and post the L2 vocabulary learning treatment.

Picture Matching task (Appendix G)

Instrução: Escreva ao lado da palavra o número referente à figura que essa palavra representa:

1.   2.   3.   4.

( ) Strawberry   ( ) Cookie   ( ) Pie   ( ) Butter

3.4.3 Phonological awareness in L1 and L2

L1 Phonological Awareness Test (Appendix H)

Children's L1 phonological awareness (Portuguese) was tested through the *Prova de Consciência Fonológica por Produção Oral* (SEABRA; CAPOVILLA, 2013) assessment battery. The test was performed in Portuguese (the instructions and answers). In this test (Appendix H) children had ten subtests to perform, as following:

a) Syllable synthesis: the participant needed to put together the syllables that the researcher said. For example: Which word is the result of "co" plus "bra"?

b) Phoneme synthesis: the participant needed to put together the phonemes that the researcher said. For example: Which word is the result of "F" plus "A" plus "C" plus "A"?

c) Rhyme identification: the participant needed to identify which words out of 3 ends with the same sound. For example: Which words end with the same sound in "mola", "bola" and "papel"?

d) Alliteration: the participant needed to identify which words out of 3 start with the same sound. For example: Which words start with the same sound in "colar", "fada" and "coelho"?

e) Syllable segmentation: the participant needed to divide the word that the researcher said in the correct syllables. For example: What are the parts of the word "sacola"?

f) Phonemic segmentation: the participant needed to divide the word that the researcher said in the correct phonemes. For example: What are the sounds in the word "dia"?

g) Manipulating syllable: the participant needed to add or subtract syllables in a word according to the instruction that the researcher gave. For example: Add "co" at the end of "maca".

h) Manipulating phonemes: the participant needed to add or subtract phonemes in word according to the instruction that the researcher gave. For example: Add the sound "r" at the end of the word "dormi".

i) Syllable transposition: the participant needed to invert the syllable in a word. For example: You are going to say the word backwards – "pata".

j) Phoneme transposition: the participant needed to invert the phonemes in a word. For example: Now you are going to say the word backwards but you need to invert each sound in the word – "sai".

Children received a score to each subtest as the result, being the maximum 40 points.

L2 Phonological Awareness Test (Appendix I)

Children's L2 phonological awareness (English) was tested through the Queensland University Inventory of Literacy (QUIL)[14] (DODD; HOLM; OERLEMANS; MCCORMICK, 1996) assessment battery. The test was performed in Portuguese (the instructions and answers). In this test (Appendix I), children had ten subtests to perform, as following:

a) Nonword Spelling: the participant needed to write the nonwords according to what the researcher said. For example "How do you write the word 'dorf'?"

b) Nonword Reading: the participant needed to say out loud nonwords that were written.

c) Syllable Identification: the participant needed to identify which parts of the word sounded the same. For example: "Which part of awful and helpful is the same?"

d) Syllable Segmentation: the participant needed to count the syllables of the words the researcher said. For example "How many syllables are there in the word 'table'?

e) Spoken Rhyme Recognition: the participant had to say if the words rhymed or not according to what the researcher said. For example: "Do these words rhyme? Jar - Tar"

f) Visual Rhyme Recognition: the participant had to say if the words rhymed or not according to what was written.

g) Spoonerisms: the participants had to switch the first phoneme of the word pair to form 2 new words. For example: "How would you do it for 'fit and sun'?"

h) Phoneme Detection: the participant needed to identify which words out of 4 had a different sound in the beginning, middle, or end according to what the researcher said. For example: "Listen to the first sound in these words: bed, bag, mop, and sun".

i) Phoneme Segmentation: the participants needed to count the phonemes in the words according to what the researcher said. For example: "How many sounds can you hear in the word 'baby'?"

j) Phoneme Manipulation: the participant needed to say outloud what a word would sound like without a sound. For example "What would 'sent' sound like without the 'n'?"

Children received a score to each subtest as the result, being the maximum 150 points.

3.4.4 Working memory

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[14] It is important to highlight that it is extremely difficult to find these tests to use in research (L2 PA) for free. Most of the studies do not provide the entire test, only parts of it as a demonstration of how the test is. I was able to use this test thanks to the author herself, who kindly sent it to me.

Because working memory is an important individual difference that might impact L2 vocabulary learning development, in this study this variable was measured with the subtest Numbers and Letters Sequence in Weschler Memory Scale for children (as in MASCARELLO, 2016) in order to control for possible differences among the participants.

They received 1 point for each correct item (there were 3 trials for each item, and 10 items in total), 30 being the maximum score. The test was interrupted when the participant did not answer any of the 3 chances per item correctly. The instructions and answers for this test were given in Portuguese. Below there is an example of how this test works:

Working memory (Appendix J)

Instrução: *Agora eu vou dizer um grupo de números e letras. Quando eu terminar você repete primeiro os números, em ordem, começando pelo número mais baixo. Depois você diz as letras em ordem alfabética. Por exemplo, se eu disser A – 1, você deve dizer 1 – A. Primeiro você diz o número e depois a letra. Vamos treinar. A – 2. Resposta correta: 2 - A.*

Item	Sequence	Correct answers
1	1 - B - 2	1 - 2 - B / B - 1 - 2
2	D - 9 - 2	2 - 9 - D / D - 2 - 9
3	3 - E - 2	2 - 3 - E / E - 2 - 3
4	1 - D - 4 E - 9 - G	1 - 4 - 9 - D - E - G / D - E - G - 1 - 4 - 9

3.4.5 Phonological Short-term Memory

In the same line as working memory, PSTM has demonstrated to be an important predictor of vocabulary knowledge, thus, it was also measured in this study with a Word and Nonword Repetition task (SEABRA; CAPOVILLA, 2013) in order to control for possible differences among the participants as well. In this task, there are two subtasks. In the first subtask, the students listened to a sequence of words and they had to repeat it. In the second subtask, children listened to a sequence of nonwords and they had to repeat it. They received a point to each correct answer, 10 being the maximum for each subtask. The task was terminated after 2 consecutive errors. The instructions and answers were given in Portuguese. Below there is an example of how this task works:

Word repetition (appendix K)

Instrução: Vou dizer algumas palavras. Escute cuidadosamente e, quando eu acabar, você deve repeti-las da mesma forma.

1. bota cara
2. cola moça
3. cone pele dono

Nonword repetition

1. balí suta
2. tadé rofu
3. soqué jerrá deguí

3.4.6 L2 Receptive Vocabulary Learning Treatment

This treatment was an adaptation of de Souza's (2015) vocabulary learning treatment. In this treatment, children were explicitly and implicitly taught a set of ten new words, mainly orally in their L2. The words were inserted into the category food. In the selection of words, the frequency, word length, and children's familiarity with the words were controlled. In the selection of the words to the study, it was taken into account the relevance of the vocabulary to the child's language development and also previous research on the topic (MOTA; SOUZA, 2016; de SOUZA, 2015)

The treatment consisted of tasks that dealt with three processes (noticing, retrieval, and creative/generative) which were an attempt to make the students learn the selected words. These processes in vocabulary learning were proposed by Nation (2001).

a) Noticing

In the first class, the participants were exposed to the "noticing" process to learn the target words. Nation (2001) proposes that it is more likely that words will be noticed if they are pre-taught before or if the words are highlighted in the material somehow, in italic or in bold for example. Therefore, this study used two activities adapted from de Souza (2015) in order to promote noticing of the target-words. The first activity (Appendix L) consisted of a food pyramid in which the target words were underlined; this part was presented using a

powerpoint slide which introduced the general topic (food) to the participants. Moreover, some questions were asked to them, such as "what is your favorite food?". In the second activity (Appendix M) children were asked to separate the food according to its category. In this activity the target words were presented in bold. These activities were performed in the first encounter with the participants.

b) Retrieval

In the second class, the participants were exposed to the "retrieval" process of learning vocabulary. This process is related to remembering the words being learned. This processing will be strengthened if the learner is asked to retrieve these words in activities after noticing them (NATION, 2001). Therefore, this study used two activities adapted from de Souza (2015) in which the participants were asked to recall the target-words.

In the beginning of the class, the participants saw pictures of the target words in a slide and were asked to remember the name of those words in English. After this moment, they were asked to match the picture with the written word (Appendix N). Besides that, in this class, the participants did a reading activity (Appendix O) in which they read a dialogue with the target words which was followed by a questionnaire that required retrieval of the target words presented in the first class.

In the third class, the students played a game as a final activity (Appendix P) proposed to stimulate retrieval. The participants played in groups in a platform called Bamboozle. In turns, the groups chose a number and a picture appeared, then they had to say which food was that (in English).

c) Creative (generative)

In the fourth and last class, the participants were exposed to the "creative/generative" process of learning vocabulary. This process happens when learners encounter the words being learned in different contexts and multiple times (NATION, 2001). Therefore, this study used an activity adapted from de Souza (2015) proposed to stimulate the creative/generative component.

This activity (Appendix Q) consisted of a similar text presented in the first encounter without the target words. The participants had to fill in the missing words in pairs. Just as in de Souza (2015), participants were helped by receiving a list of the target words in their L1 (Portuguese) to translate in to their L2 (English), afterward they used this list to complete the task.

This treatment phase happened four times for around 30-45 minutes, in a period of 4 weeks. The session happened once a week because the English class in the school was only once a week.

The target words of this study were:

1. Oatmeal
2. Pie
3. Zucchini
4. Eggplant
5. Parsley
6. Plum
7. Ham
8. Onion
9. Cucumber
10. Blackberry

3.5 PROCEDURES

The first procedure was to ask the authorization of the school through a letter of consent to collect data. This procedure is a requirement of the Ethics Committee at UFSC in order to collect data in schools. Moreover, the parents or legal tutor were required to sign the *Termo de Consentimento Livre e Esclarecido* (TCLE) because the participants were underage. After the parents signed the TCLE, the participants were required to sign the *Termo de Assentimento Livre e Esclarecido* (TALE) in order to accept to participate as volunteers in the study.

After this part, the students started the first of the three phases in the study. Figure 2 shows the timeline of the study. In the first phase of the study the participants had to answer the questionnaire and perform the L2 receptive vocabulary, working memory, phonological short-term memory, and phonological awareness in L1 and L2 tests. The first phase was conducted individually with each student, in a time set with the researcher, and all the instructions were given in Portuguese. Some participants performed this part remotely and some students performed in-person. This phase was divided in two moments, in order to avoid that the participants got tired in the process. In the first day of the pre-tests, the tests conducted were the L2 receptive vocabulary (Word Recognition and VLT) and L1 phonological awareness (*Prova de Consciência Fonológica por Produção Oral*). In the

second day of the pre-tests, the tests conducted were working memory, phonological short-term memory, and L2 phonological awareness. There were 3 different lists with different orders for the tests to make sure the order of the tests did not influence the performance of the participants.

Figure 2 - Timeline of the study
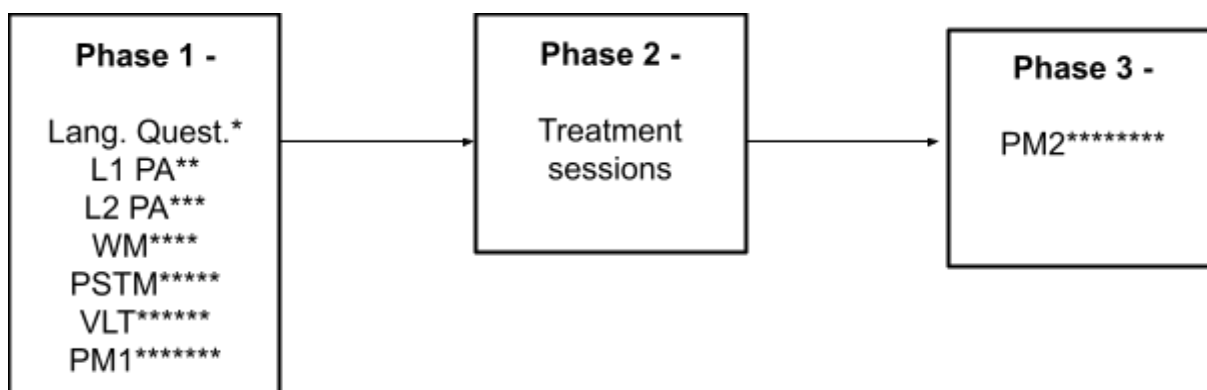
Source: the author.
*Language background questionnaire
**L1 phonological awareness battery tests
***L2 phonological awareness battery tests
****Working memory test
*****Phonological short-term memory test
******Vocabulary Levels Test
*******Picture matching test (pre-intervention)
********Picture matching test (post-intervention)

In the second phase, the participants were invited to participate in the classes for L2 vocabulary learning which was given by the researcher. The treatment phase was conducted during the regular English classes of the participants (with the responsible teacher's authorization, Appendix R). The classes happened with the entire group and lasted about 30-45 minutes each. The students were very participative and engaged in the activities during the intervention phase. As expected, the students were also very talkative and sometimes distracted. The participants interacted among themselves and with their classmates that were not part of the study (due to several reasons). During this phase, in most of the classes, interns of the Letras - Inglês program were in the classroom as well. They observed the class, took notes, and also helped interacting with the students when they were doing the activities. There

was no control group since the objective was to compare each student with their performance in the pre and post tests after the L2 vocabulary learning treatment sessions.

Finally, in the third phase, the participants took only one L2 receptive vocabulary test again, the picture-matching test. The objective was to evaluate if they had learned the target words. The pre and post tests took place within a range of around two months. Moreover, considering the current scenario of the pandemic, there were two different procedures for data collection (for the first and third phase), face-to-face and remotely. The procedures in these two scenarios will be described in the next subsection.

3.5.1 Face-to-face and remote data collection

As previously mentioned, because of the COVID-19 pandemic, the data collection had two possibilities: face-to-face in the school after the regular classes or remotely in a time that was feasible to the participant. All the tasks were conducted individually either in a classroom after the class or remotely via Zoom in a time that was good for them. The pre-tests were conducted in two different days. Only the intervention was conducted during the participants' regular English classes in the school. Since participants were from different classrooms, they had the same sessions but not necessarily all at the same time. The treatment sessions happened once a week during four weeks for around 30-45 minutes. Only the third class had around 20 minutes due to other activities the students had to do[15]. The post-test, L2 receptive vocabulary, was conducted in one day, individually with each student either face-to-face or remotely.

3.6 THE ETHICS REVIEW BOARD

This study went through the analysis of the Conselho de Ética em Pesquisas com Seres Humanos at the Federal University of Santa Catarina (CEPSH-UFSC), according to the Brazilian law and received permission to be conducted.[16]
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3.7 PILOT STUDY

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[15] Interns from the Letras - Inglês program started observing the classes while I was collecting data and in the 3rd treatment session they had to present themselves to the students.
[16] CAAE 46879321.3.0000.0121

The pilot study was conducted in September of 2021 with 2 participants (1 male and 1 female; *M* age: 11.5; SD: 0,707106). The participants in the pilot study were from the same school of the participants in the official data collection, however, they had different regular English teachers. The difference between the pilot study and the official data collection was the target words, since most of the words in the pilot study were known by the participants. The pilot study, as previously mentioned, was conducted in a time during the pandemic of COVID-19 when the schools were having only remote classes, therefore, the data collection was entirely remote (through Zoom meetings). All the phases were conducted individually, including the treatment phase because the participants could not take the intervention classes at the same time due to differences in their schedule. Therefore, the classes were shorter in comparison to the official data colletion (around 20 minutes). There were no modifications in the instruments of the method after the pilot study.

3.8 OPEN SCIENCE: PRE-REGISTRATION AND OPEN DATA

The data collected in this study, anonimized, will be published on a platform named Open Science Framework (OSF), in order to guarantee the transparency and reproductibility of the present study. Moreover, this study was pre-registered[17] in the same platform prior to data collection in order to keep transparency. Thus, any researcher that would like to reproduce this study or verify its veracity will have access to the data collected and procedures adopted. This practice is now beginning to be adopted at *LabLing*, not only for the reasons mentioned, but also because some academic journals are already requiring pre-registrations and open data in order to publish studies. This section is dedicated to clarify why this practice is important in the academic environment.

Open Science is a concept that encompasses several propositions regarding the scientific practice related to scientific knowledge production and dissemination (FECHER; FRIESIKE, 2014). This topic has been widely discussed in the academic community. Open science has some assumptions and, among them, is the free access to scientific knowledge for researchers and the community, collaborative work among scientists, and the creation and maintenance of suitable platforms to share information among researchers (FECHER; FRIESIKE, 2014). Furthermore, open science is committed to guarantee more reproducibility and transparency in science. In Brazil, there are important initiatives concerning open and free

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[17] It is possible to access the pre-registration of this study in the following link: https://osf.io/4hv98

access to scientific knowledge, such as *Periódico* CAPES and the SciELO platform. This is an uncommon practice in other countries as the United States of America, for instance, in which payment is necessary in order to have access to scientific articles. Nonetheless, there is still much to be done to turn the work in the academic environment into a more collaborative, transparent, and reproductible one.

In order to achieve open science's propositions, Munafò et al. (2017) propose some practices that should be followed while conducting a study. Among the many suggestions, 2 practices were adopted by the present study: the pre-registration and free access to the data collected. Pre-registration consists of making public the access to the researcher's intetions in a platform, usually prior to data collection. The platform we chose was the Open Science Framework (OSF). The data will be available in the same platform.

4. RESULTS

The main objective of this study is to investigate whether L1 (Portuguese) and L2 (English) phonological awareness influence L2 vocabulary learning in children attending the 6th grade of Elementary school. There are two hypotheses:

H1: Children with higher phonological awareness scores in their L1 will outperform children with lower phonological awareness scores in their L1 after vocabulary learning treatment.

This hypothesis is based on Hu (2003), Hu (2008), and Lund et al. (2015) who argue and show evidence that L1 phonological awareness can predict L2 vocabulary learning.

H2: Children with higher phonological awareness scores in their L2 will outperform children with lower phonological awareness scores in their L2 after vocabulary learning treatment.

This hypothesis is based on Gottardo et al. (2008) who argue and show evidence that L2 phonological awareness can predict L2 vocabulary learning.

In order to test these hypotheses, the present study had a pre-test, intervention, and post-test design. The participants had 4 classes in an attempt for them to learn 10 new words in English. Below are the results of the tests conducted. The chapter is organized into 1 main section and 7 subsections. Section 4.1 presents the descriptive statistics with an overall view of the data collected and the subsequent subsections present the descriptive statistics of each test conducted and an exploratory analysis of the results.

4.1 DESCRIPTIVE STATISTICS

For the purposes of the present study, other variables besides PA were also tested (working memory, phonological short-term memory, and vocabulary level). Table 2 shows an overview of the results for each participant on each test. In the next subsections, the results of each test will be presented.

Table 2: Scores of all the participants in each test

Participant	VLT[1]	PM1[2]	PM2[3]	PM1-2[4]	PMG[5]	WM[6]	PSTM1[7]	PSTM2[8]	PA1[9]	PA2[10]
E246	50%	3	8	5	71%	19	100	0	83	74
F468	47%	2	8	6	75%	17	113	119	131	108
G680	50%	0	3	3	30%	17	109	112	109	94
I246	37%	0	7	7	70%	14	94	119	116	65
K680	70%	2	7	5	62%	19	103	72	116	99
M246	53%	3	9	6	85%	18	81	112	105	100

Source: the author.

[1] Vocabulary Levels Test
[2] Picture Matching test (prior to intervention)
[3] Picture Matching test (post to intervention)
[4] Picture Matching test (difference between first and second test)
[5] Picture Matching test gains
[6] Working Memory test
[7] Phonological Short-term memory (words)
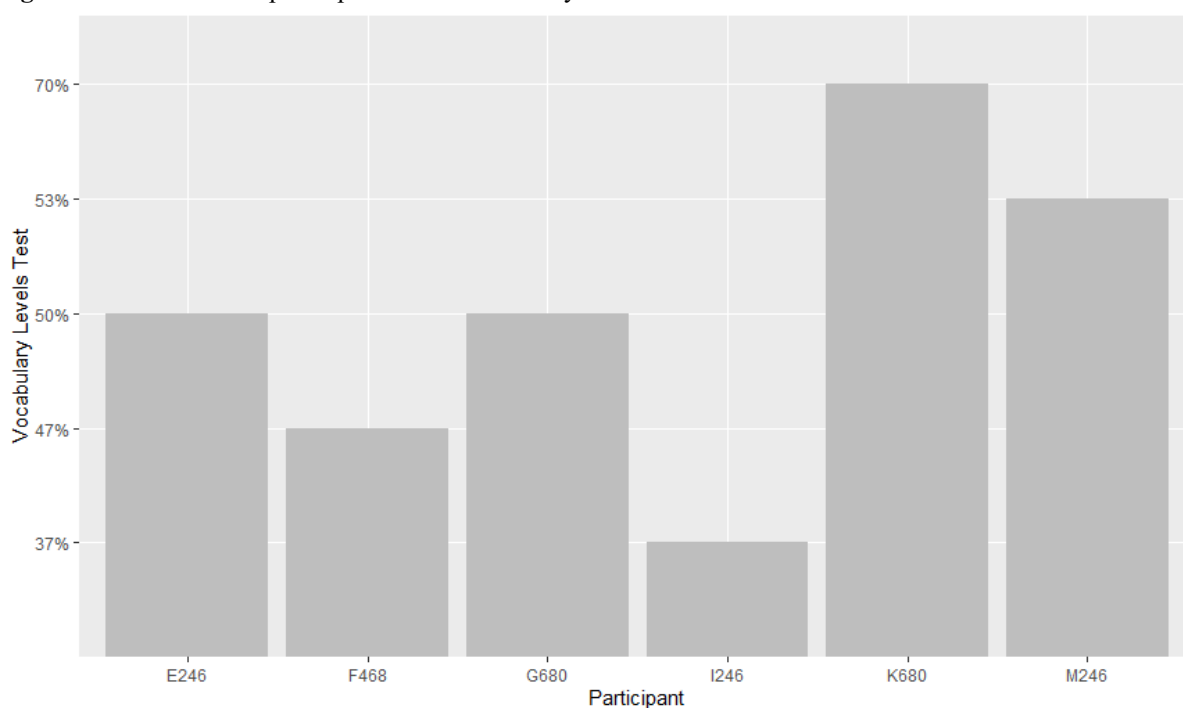[8] Phonological Short-term memory (non-words)
[9] Phonological Awareness test (L1)
[10] Phonological Awareness test (L2)

Table 2 shows the scores each participant had in each of the tests they performed. Some scores were transformed into percentage, as in the Vocabulary Levels Test (VLT) column for instance; other scores were transformed into standard scores (if they had one), as in the Phonological Short-term Memory Tests, for instance. Each test has its own minimum and maximum scores, for example the Working Memory Test ranges from 0 to 30 points, the Picture-Matching tests range from 0 to 10 points, and so on. The tests and their results will be analyzed in the next subsections. In the following subsection, the results of the Vocabulary Levels Test will be presented.

4.1.1 Descriptive analysis of the vocabulary levels test results

In order to assess the participants' vocabulary size, the Vocabulary Levels Test (VLT) adapted by Mota and Souza (2016) was conducted. Below, in Figure 3, is the total score of each participant in the test and the percentage of correct answers.
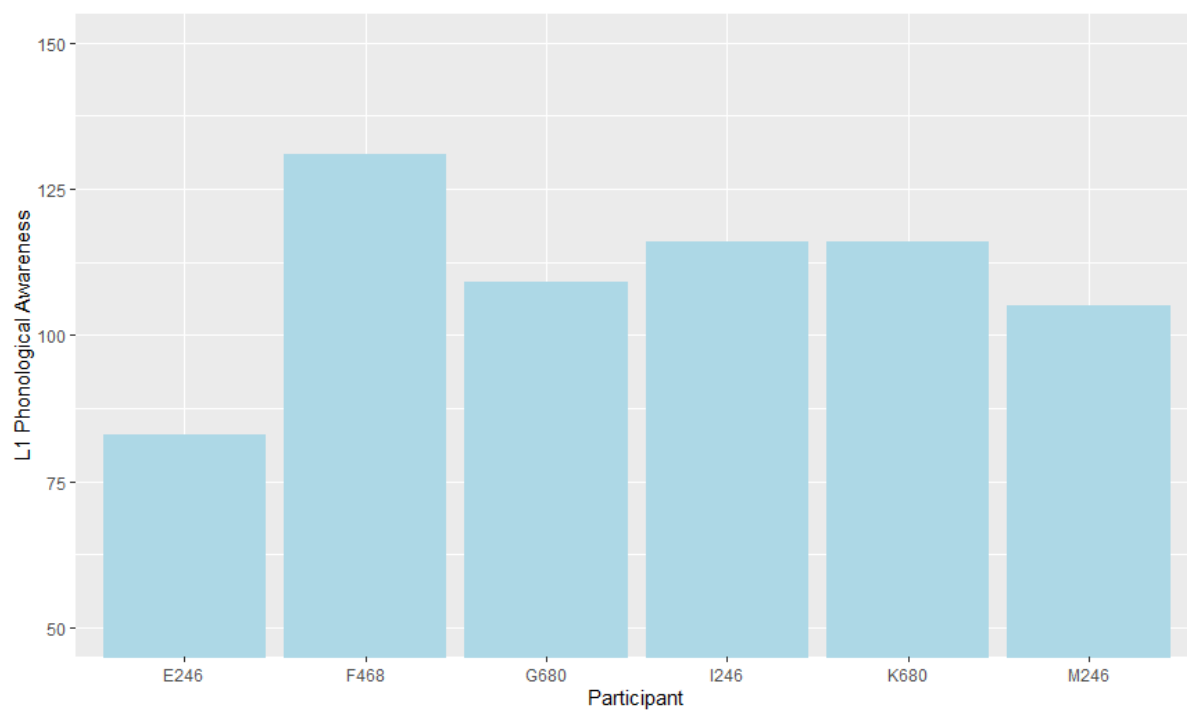
**Figure 3:** Scores of each participant in the Vocabulary Levels Test

According to Figure 3, the mean score on the test was 15 (50%). Only one participant scored more than 50% (K680). Moreover, none of the 6 participants had the highest score (30 points). The highest score was 21 and the lowest was 11 (*M*=15, *SD*=3,265986). In the present study, the criterion to participate was to be a beginner in English. Since none of the participants scored more than 70% in the 2nd 1,000 words of the test, it was understood that all of the participants were not intermediate or advanced English learners.

4.1.2 Descriptive analysis of L1 and L2 phonological awareness tests

In this study, phonological awareness (PA) was measured through 2 different tests, one for L1 (Portuguese) and another one for L2 (English). Figure 4 shows the standard score of each participant in the L1 PA test. Figure 4 shows the total score of each participant in the L2 PA test. In the L1 PA test, the maximum score was 40; however, the points in the test were transformed in a standard score, in which the participants could be divided in 5 categories in terms of PA skills, according to their age. The categories were: very low (<70), low (70-84), medium (85-114), high (115-129), and very high (130>), as can be seen in Table 3.

Figure 4: Scores of each participant in the L1 PA Test

Source: the author.

Figure 5: Scores of each participant in the L2 PA Test
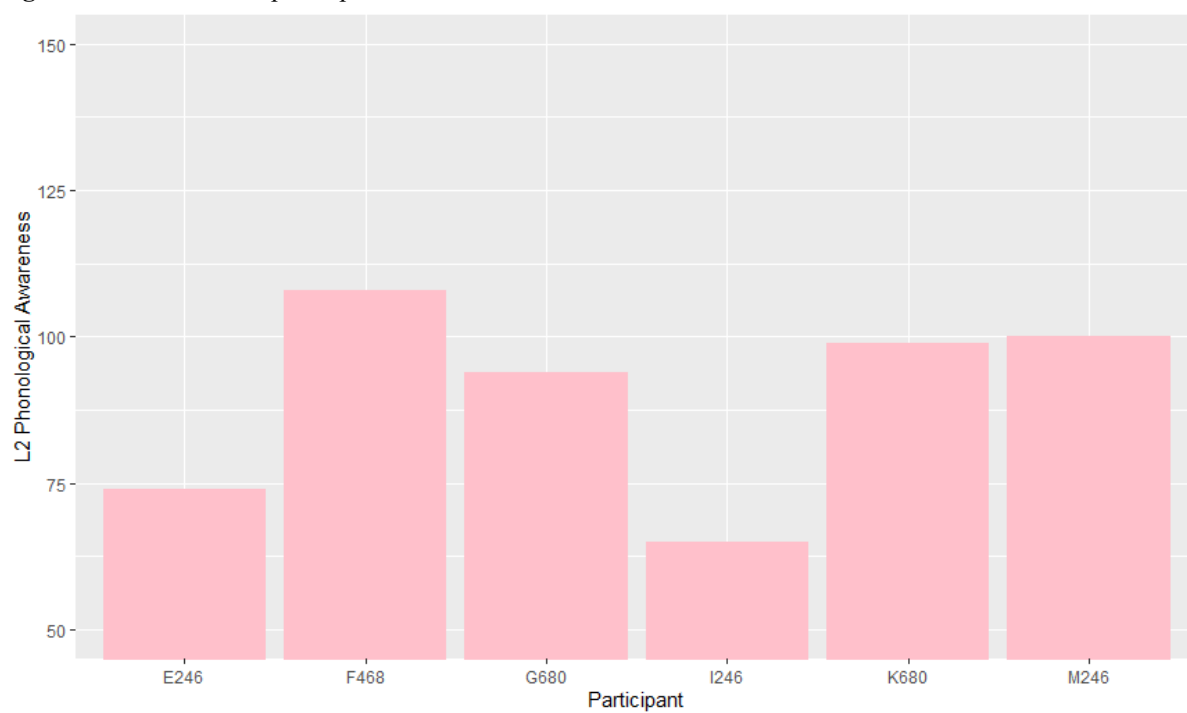
Source: the author.

Table 3: Standard score for reference

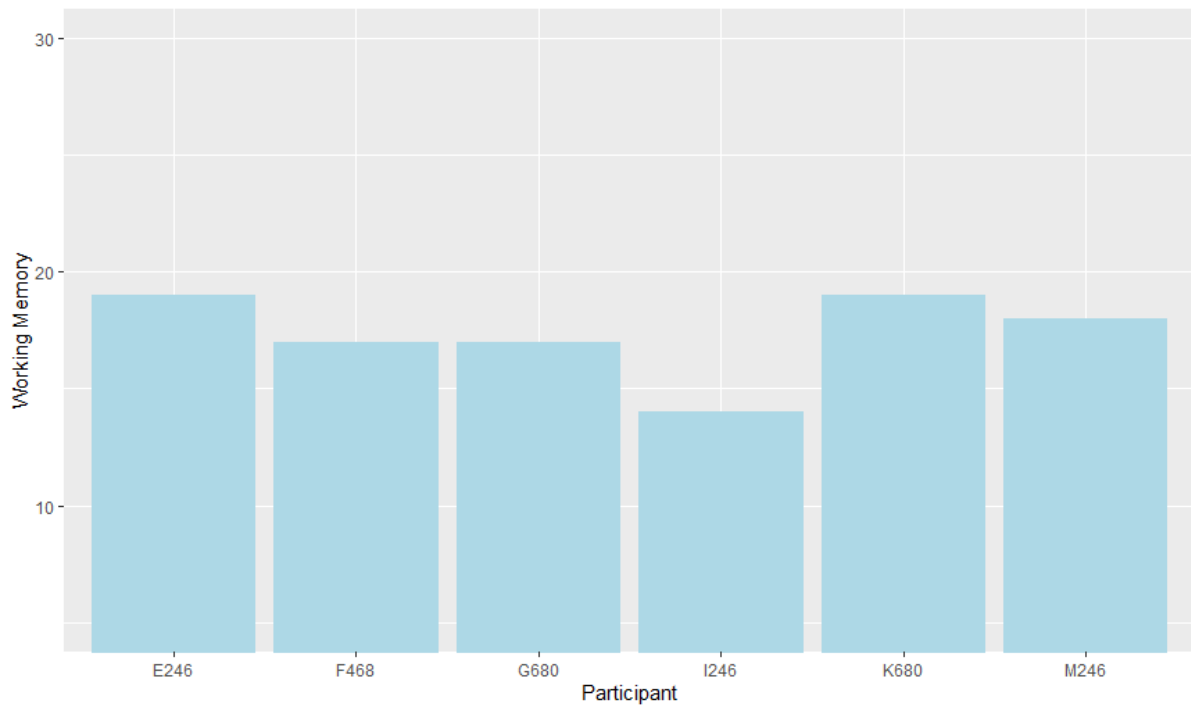| Standard Score	
<70	very low
70 to 84	low
85 to 114	medium
115 to 129	high
>130	very high

Source: the author.

According to Figures 4 and 5, it is noticeable that the participants differed in terms of L1 and L2 PA skills, but the difference was greater in L2 PA. In the L1 PA test, the highest score was 131 and the lowest score was 83 (M=102, SD=11,454256). The participants were classified into 4 different categories according to the standard score: 1 participant (E246) was classified as low, 2 participants (M246 and G280) were classified as medium, 2 participants (I246 and K680) were classified as high, and 1 participant (F468) was classified as very high in terms of L1 PA skills. In the L2 PA test, the highest score was 108 and the lowest score was 65 (M=97, SD=16,55797894). The participants did not reach the necessary score to transform the points in a standard score.

4.1.3 Descriptive analysis of the working memory test

Working memory was assessed through the subtest Numbers and Letters Sequence in Weschler Memory Scale for children. Figure 6 shows the score of each participant in the subtest.

**Figure 6:** Scores of each participant in the Working Memory Test

In the WM test, the participants did not differ greatly. The highest score was 19 and the lowest score was 14 (*M*=18, *SD*=1,861898673).

4.1.4 Descriptive analysis of the phonological short-term memory test

Phonological short-term memory was assessed through a repetition task. There were 2 subtests: word and nonword repetition. Figure 7 shows the scores of each participant in the word repetition test. Figure 8 shows the scores of each participant in the nonword repetition test. The maximum number of points for each subtest was 10. The points in the test were transformed into a standard score, in which the participants could be divided into 5 categories in terms of PSTM skills, according to their age. The categories were: very low (<70), low (70-84), medium (85-114), high (115-129), and very high (130>), as can be seen in Table 3.

Figure 7: Scores of each participant in the Phonological Short-term Memory - word repetition subtest
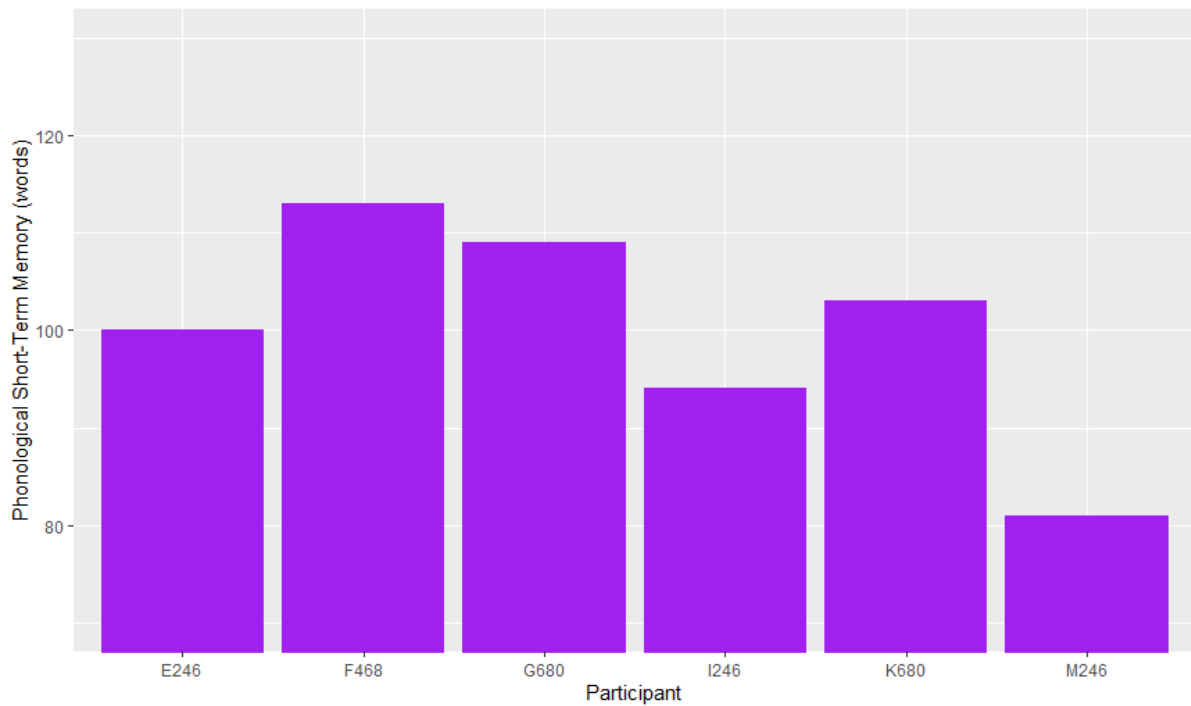
Source: the author.

In the word repetition subtest, the participants did not vary much in terms of standard scores. Apart from 1 participant (M246), who was classified as having low PSTM, all the participants were classified as having medium PSTM. The highest score was 113 and the lowest score was 81 (*M*=102, *SD*=11,45425685).

Figure 8: Scores of each participant in the Phonological Short-term Memory - nonword repetition subtest
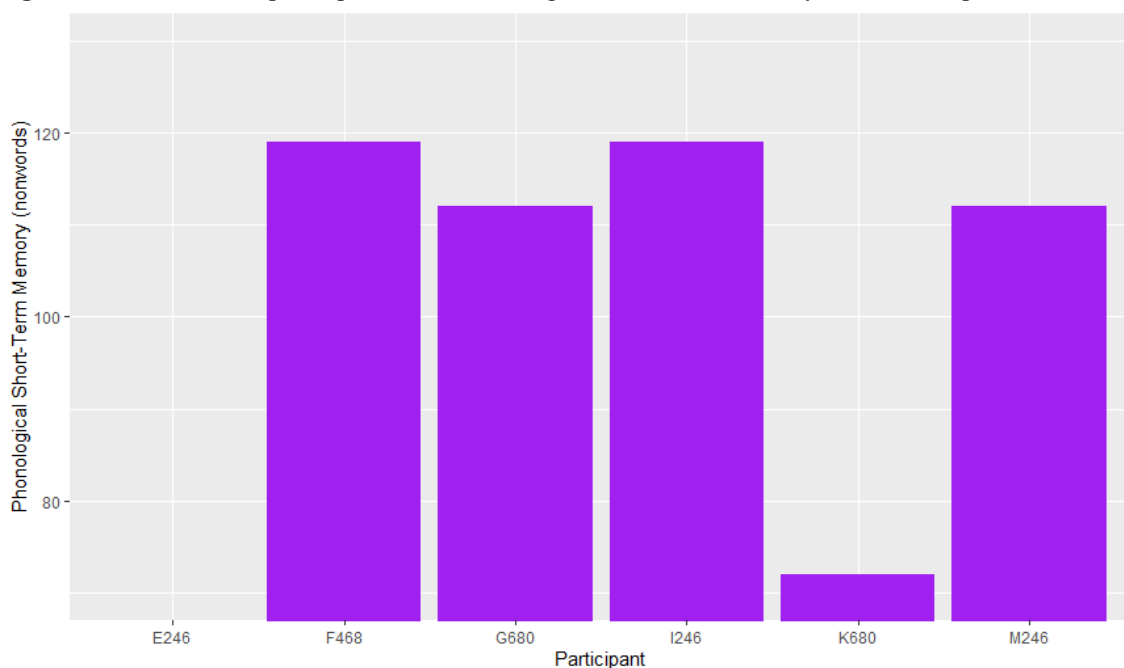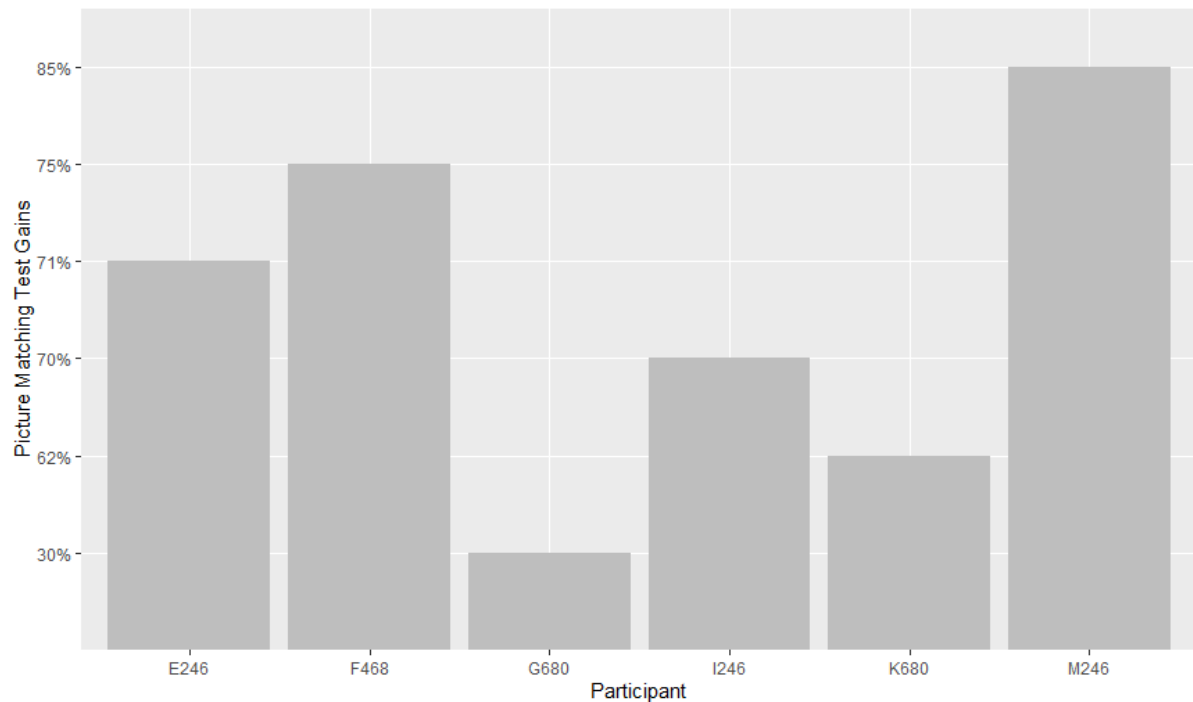

Source: the author.

On the other hand, in the nonword repetition subtest, the participants varied more. The highest score was 119 and the lowest score was 0 (*M*=112, *SD*=47,04891072). As it is possible to see in Figure 8, one of the participants scored 0 (E246) and was classified as having very low PSTM and another participant was classified as having very low (K680) PSTM. Two participants were classified as having medium PSTM (G680 and M246) and the other two were classified as having high PSTM (F246 and I246). It was not possible to use the reference of standard score for the subtests together because the participants did not achieve the minimum total score for their age (word subtest score + nonword subtest score). This could imply that participants' PSTM was not in the range expected for their age.

4.1.5 Descriptive analysis of the picture-matching test

The picture-matching test was conducted twice, prior to and post the intervention sessions. The main objective was to measure how many words the participants learned during this process. Figure 9 shows the gains, in percentage, each participant had when comparing their pre and post-test.

Figure 9: The gains from pre to post-test of each participant in the Picture Matching Test

Source: the author.

As can be observed in Figure 9, all the participants had gains in relation to their pre-test, which means that they might have learned some of the words during the intervention. Nonetheless, some participants seem to have learned more than others. Participant M246 was the one who learned the most with 85% of gains and participant G680 was the one who learned the least with 30% of gains (M=71%, SD=19%).

4.1.6 Comparison of gains in vocabulary and PA tests

Since in the present study I was not able to collect data with sufficient participants to conduct an inferential analysis, it is difficult to observe any tendencies in the results presented. However, some considerations can be made based on the descriptive analysis. Table 4 shows in detail the results of the gains in the picture matching post-test test and the L1 and L2 PA tests, ordered from the highest gain to the lowest gain in the picture-matching post-test.

Table 4: Gains in the picture matching post-test and score in L1 and L2 PA tests

Participant	PMG[1]	PA1[2]	PA2[3]
M246	85%	105	100
F468	75%	131	108
E246	71%	83	74
I246	70%	116	65
K680	62%	116	99
G680	30%	109	94

Source: the author.
[1] Picture Matching test gains
[2] Phonological Awareness test (L1)
[3] Phonological Awareness test (L2)

When comparing the results of the gains for each participant and their perfomance in the L1 PA test, it does not seem to have any correlation, since the participant classified as having very high L1 PA (F468) was not the one who had the highest gain (M246). In the same line, the participant classified as having very low PA (E246) was not the one who had the lowest gain (G680).

In addition, the same happened to the L2 PA test. The highest score in the L2 PA test (F468) does not correspond to the highest gain (M246) and the lowest score in the L2 PA test (I246) does not correspond to the lowest gain (G680).

These results seem to indicate that in this study, it was not necessarily PA that influenced their gains in vocabulary.

4.1.7 Exploratory analysis

In order to better understand the data presented, some other descriptive analyses were conducted. Since it did not seem to be PA the skill which was influencing (positively or negatively) vocabulary learning, an analysis was carried out to determine whether participants' skills in working memory or phonological short-term memory were playing a role in the results.

Table 5 shows a comparison between working memory scores and the gains in the picture-matching post-test. Once again, the participants' WM does not seem to be playing a role in the results. The lowest score was a participant who had a 71% gain in the post-test (I246) and one of the highest grades was a participant who had a 62% gain (K680).

Table 5: Gains in the picture matching post-test and score in the WM test

Participant	PMG[1]	WM[2]
M246	85%	18
F468	75%	17
E246	71%	19
I246	70%	14
K680	62%	19
G680	30%	17

Source: the author.
[1] Picture Matching test gains
[2] Working Memory test

However, perhaps the low score of participant I246 on the WM test could explain the low score in the participant's L2 PA test since the participant could not rely on previous knowledge of the language and had to rely more on remembering the phonological aspects of the items in the test.

Since differences in gains for each participant were still inconclusive, Table 6 shows the results of gains in comparison to the PSTM subtests.

Table 6: Gains in the picture matching post-test and scores in the PSTM subtests

Participant	PMG[1]	PSTM1[2]	PSTM2[3]
M246	85%	81	112
F468	75%	113	119
E246	71%	100	0
I246	70%	94	119
K680	62%	103	72
G680	30%	109	112

Source: the author.
[1] Picture Matching test gains
[2] Phonological Short-term memory (words)
[3] Phonological Short-term memory (non-words)

In terms of PSTM, in the first subtest (word repetition) the participants did not differ much. The only participant who was classified as having low PSTM skills in this test is the participant who had the highest percentage of gains in vocabulary (M246). In the second subtest (non-word repetition), the difference among the participants is higher, however, the participant who had the lowest score had the third highest percentage of gain (E246). Also, the participant with the highest gains in vocabulary and the participant with the lowest gains had the same score in the second subtest (112). Therefore, it is not possible to see any tendencies (positive or negative) in the relationship between PSTM and the gains in vocabulary.

Another aspect that could play a role in the gains is the relationship between phonological awareness and vocabulary size as previous research indicated (MARECKA et al., 2017). In Marceka's et al. study, L2 PA measures only made a difference in participants with smaller vocabulary sizes. Therefore, Table 7 shows the results of gains in comparison to the vocabulary size test and L2 PA test. The table below is organized from the highest to lowest L2 PA scores.

Table 7: Gains in the picture-matching post-test and scores in the VLT and L2 PA test

Participant	PA2[1]	VLT[2]	PMG[3]
F468	108	47%	75%
M246	100	53%	85%
K680	99	70%	62%
G680	94	50%	30%
E246	74	50%	71%
I246	65	37%	70%

Source: the author.
[1] Phonological Awareness test (L2)
[2] Vocabulary Levels Test
[3] Picture Matching test gains

One of the lowest vocabulary sizes (47%), corresponds to the highest L2 PA score (108) and also to one of the highest gains in vocabulary (75%). The highest vocabulary gain (85%) is also one of the highest L2 PA score and corresponds to a medium vocabulary size in the group (53%). However, the lowest vocabulary size (37%) also had the lowest L2 PA score (65), which seems to be in contrast with the findings in previous studies, as mentioned before. Nonetheless, L1 PA and vocabulary size could also be playing a role.

In order to analyze if there would be any relationship between these variables, L1 PA, vocabulary sizes, and the gains in vocabulary are described in Table 8.

Table 8: Gains in the picture-matching post-test and scores in the VLT and L1 PA test

Participant	PA1[1]	VLT[2]	PMG[3]
F468	131	47%	75%
I246	116	37%	70%
K680	116	70%	62%
G680	109	50%	30%
M246	105	53%	85%
E246	83	50%	71%

Source: the author.
[1] Phonological Awareness test (L1)
[2] Vocabulary Levels Test
[3] Picture Matching test gains

The lowest vocabulary size (37%), corresponds to one of the highest gains in vocabulary (70%) and L1 PA scores (116, participant I246). The highest L1 PA score (131, participant F468) corresponds to one of the highest gains in vocabulary (75%) and one of the lowest vocabulary sizes (47%). Whereas the highest vocabulary size (70%) corresponds to one of the lowest gains in vocabulary (62%), the same participant has one of the highest L1 PA scores (116, participant K680).

The highest gain in vocabulary corresponds to a medium vocabulary size (53%), however, it is also the participant with one of the lowest L1 PA (105, participant M246) in the group. The lowest gain in vocabulary (30%) corresponds to a medium L1 PA (109, participant G680) and a medium vocabulary size (50%).

According to the data presented, it seems that for some participants there is a relationship among L1 or L2 PA, vocabulary sizes, and their gains in vocabulary. However, this relationship does not seem to apply to every participant. Therefore, the claim that PA would make a difference in vocabulary gains seems to be the case if vocabulary sizes are taken into account. However, it did not happen only in participants with high L2 PA and low vocabulary sizes, but also with participants with high L1 PA and low vocabulary sizes which was not the case in Marecka's et al. study.

5. DISCUSSION

As previously mentioned, the objective of the present study was to investigate whether L1 (Portuguese) and L2 (English) phonological awareness both have an influence on L2 vocabulary learning in children from the 6th grade of Elementary school. In order to investigate this relationship, the study had a pre-test, intervention, and post-test design. It was investigated if the participants' phonological awareness would influence the gains they might have had in the vocabulary that was taught during the intervention. The present study was not able to find a relationship between PA, alone, and vocabulary learning. Due to the small number of participants, the present study can neither refute nor confirm the hypotheses tested.

Before presenting the discussion of the results, it is important to highlight some aspects intrinsic to the present study. This study was conducted during the pandemic of COVID-19, and due to this circumstance, it went through many adaptations in order to be completed. The initial objective was to conduct the study in person, in different public schools in Florianópolis. However, because of the pandemic, adaptations were made. Part of the study had to be done remotely and it was only possible to collect data in one public school. An attempt to collect data was done during the second semester of 2021 when schools were closed and only had classes remotely. Data from one participant was collected entirely through remote meetings, including the intervention sessions. As is well known, the situation was very complicated, not only for research but for the education system itself. The teachers did not have live classes all weeks, most of the students did not open the camera or microphone during class, and communication with the students was entirely through an online platform provided by the school, among other issues.

Since the pandemic was not something the Brazilian educational system was prepared for, the schools and teachers were having their own difficulties dealing with their students and keeping the classes. In some schools, not all students had access to computers to participate in remote classes. Most of the difficulties were beyond our reach to be solved. This situation made it hard to contact participants during 2021 and delayed data collection to 2022 in the hope the schools would come back to in-person classes. When classes resumed in person, in February 2022, the pandemic was still ongoing. All the COVID-19 sanitary procedures were being followed by the school in which the data collection happened (use of masks, social distancing, among others). Only then was data collection concluded. These events affected not only the data collection of the present study but the participants themselves. All the

participants had remote classes for approximately 1 year prior to data collection. Their evaluations, the activities they did, and the interaction among them, among other aspects, were drastically different from the norm during their entire 5th grade.

Having this setting in mind, the methodological procedures adopted in the present study will be readdressed. The study was composed of 6 different tests (L1 and L2 PA, Vocabulary Levels test, Picture Matching test, Working Memory test, and Phonological Short-term Memory test). After performing all the tests, the participants had 4 classes (around 30-45min) in which vocabulary was taught. After the intervention, the picture-matching test was performed again. The picture-matching test was the only test conducted twice (pre and post-intervention). As previously presented in the results sections, all the participants had gains in terms of vocabulary (they all learned some target-words in English). None of the participants learned all the target words. In relation to their scores in the PA tests, even though some participants had very low scores in the PA tests, they still gained 70% or more in terms of the target-words. In addition, the opposite also happened: even though some participants had high scores on the PA tests, some of them did not have great gains in terms of the target-words (achieving only 30% of gains).

As was already mentioned in the literature review, it was expected that PA would influence their L2 vocabulary gains, meaning that higher PA skills would be related to higher L2 vocabulary gains (GOTTARDO et al., 2008; HU, 2003; HU, 2008; LUND et al., 2015). This finding was inconsistent with the results in the present study since higher scores on the PA tests did not indicate higher gains in vocabulary. Nonetheless, there was a study that did not find any correlation between PA skills and L2 vocabulary learning as well (NICOLAY; PONCELET, 2013), which is more in line with the findings in the present study. However, in their study they found a positive correlation between PSTM and vocabulary learning, which was not found in the present study.

However, there was also a study in which the relationship between L2 PA scores and L2 vocabulary learning only happened with participants with small vocabulary sizes (MARECKA et al., 2017). This study was conducted in a setting more similar to the one in the present study (foreign language learning in a non-immersive context). This result is more in line with the findings of the present study since the same tendency seemed to have appeared, although it seemed that L1 PA could also be playing a role when taking into consideration vocabulary sizes. This could mean that the gains in vocabulary would only be influenced by PA skills if the child has a small vocabulary size.

Although working memory and phonological short-term memory were also analyzed, none of these abilities seemed to show an effect in the participants' results. Most of the participants had similar scores but fairly different gains in vocabulary learning after the treatment sessions.

One of the reasons the results might not have indicated the relationship between PA and vocabulary learning is the great differences in the studies conducted in this area. All the studies mentioned used different tests to measure PA. The tests varied in the stimuli, the type, and the number of tasks. Also, the studies varied in terms of contexts, some of them were conducted in immersion contexts (GOTTARDO et al., 2008; KAHLIA et. al, 2018), some with immersion programs in school (NICOLAY; PONCELET, 2013), and some in non-immersive contexts (MARECKA et al., 2017). Moreover, there were differences in how the studies evaluated vocabulary knowledge and how they conducted the intervention.

Moreover, some pieces of information were also not mentioned in the articles published, such as the complete tests used and how the intervention was conducted. These aspects made it difficult to replicate the studies. This issue brings awareness to the importance of transparency in research and how relevant the debate over open science is to continue to improve future research.

5.1 READDRESSING THE RESEARCH QUESTIONS AND HYPOTHESES

Having discussed the results, I will now readdress the research questions and hypotheses.

R1: Does phonological awareness in L1 (PT) predict the acquisition of receptive vocabulary in L2 (ENG) in children?

H1: Children with higher phonological awareness scores in their L1 will outperform children with lower phonological awareness scores in their L1 after vocabulary learning treatment. This hypothesis was based on Hu (2003), Hu (2008), and Lund et al. (2015) who argue and show evidence that L1 phonological awareness can predict L2 vocabulary learning.

The results of the present study, based on the data of 6 participants, do not allow me to refute or confirm this hypothesis with confidence. Nonetheless, it seems that L1 PA indeed influenced vocabulary learning, but only in the case of participants with small vocabulary sizes.

R2: Does phonological awareness in L2 (ENG) predict the acquisition of receptive vocabulary in L2 (ENG) in children?

H2: Children with higher phonological awareness scores in their L2 will outperform children with lower phonological awareness scores in their L2 after vocabulary learning treatment. This hypothesis was based on Gottardo et al. (2008) who argue and show evidence that L2 phonological awareness can predict L2 vocabulary learning.

The results of the present study, based on the data of 6 participants, do not allow me to refute or confirm this hypothesis with confidence. Nonetheless, it also seems that L2 PA indeed influenced vocabulary learning, but only in the case of participants with small vocabulary sizes.

6. CONCLUSION

This final chapter presents the conclusions, limitations, and suggestions for further research. The objective of the present study was to investigate the influence of L1 and L2 phonological awareness on L2 vocabulary learning. In order to achieve that, a pre-test, intervention, and post-test study was conducted. Therefore, the study had three different phases. In the first phase, the 6 participants performed 6 different tests (L1 and L2 PA, Vocabulary Levels test, Picture Matching test, Working Memory test, and Phonological Short-term Memory test). In the second phase, the participants had 4 classes in which they learned 10 words in English. In the third and last phase, the participants performed one last test, the picture-matching test.

The results demonstrated that all the participants learned some target words. However, some participants seemed to have learned more words than other participants. Why did some children learn more words than other children? The assumption was that PA would be the answer, which means that, if the child had a higher PA score (in L1 or L2) their gains in vocabulary would be greater than their peers' gains. However, in the present study, L1 and L2 PA did not seem to influence L2 vocabulary learning. The participants with the highest scores in the L1 or L2 PA tests were not the ones who learned the most amount of words and the participants with the lowest scores in the L1 or L2 tests were not the ones who learned the least amount of words. Therefore, contrary to the expectations, PA did not seem to play a role in L2 vocabulary learning. This was also true when taking into consideration children's working memory and phonological short-term memory.

Nonetheless, when taking vocabulary size into consideration, L1 and L2 PA seemed to play a role in L2 vocabulary learning. Children with low vocabulary sizes and high or medium L1 or LA PA scores had great gains in L2 vocabulary learning. Children with low vocabulary sizes and great gains in vocabulary either had a high/medium score in the L1 PA test or in the L2 PA test. This finding seems to indicate that PA only influences L2 vocabulary learning in children with low vocabulary sizes since children who had the same or similar PA scores differed in terms of gains in L2 vocabulary.

Nevertheless, there were few participants and we must be cautious when drawing conclusions. Even though there seems to be a tendency in relation to low vocabulary size, high L1 or L2 PA scores, and high gains in vocabulary, this was not the case for every

participant. Therefore, further research should investigate this with more participants to see if the tendency will arise.

In conclusion, researching L2 vocabulary learning can be fascinating and extremely challenging. There are many different variables to be observed and, most of the time, they interact with one another, which makes it difficult to analyze what is influencing the learning process. Nevertheless, the variables mentioned in the present study seem to be playing a role and further research may investigate them more thoroughly.

6.1 LIMITATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

In this section, I will address the limitations of the present study. One of the main limitations was the number of participants. Due to several reasons, I was not able to recruit enough participants to run an inferential analysis and make the results more robust. One of the reasons for the small number of participants was the pandemic of COVID-19. Another reason was that one of the schools I was supposed to collect data started a strike as soon as they reopened after the lockdown. Therefore, I had to collect data in only one school and it consequently limited my options for recruitment. One more issue that I think is important to highlight is the difficulty of contacting and entering public schools for research purposes. Many schools that I contacted did not answer me. Further research with a bigger population might have different results or could even corroborate the findings of this study.

Another limitation is the test used to measure L2 PA. Since there were no tests available for free, I had to use the only one I could find (thanks to the author who kindly sent it to me). Due to time constraints, it was not possible to adapt or create a new L2 PA test. There is a pressing need to adapt or create an L2 PA test for the English-Portuguese language pair. As a result of the test not being designed for foreign language environments, it was not possible to transform the scores into standard scores, since the participants did not achieve the minimum in some subtasks. Further research may as well improve this aspect and have different or more robust findings.

The fact that it was not a longitudinal study could also be considered a limitation. Also, due to time constraints, the intervention phase was shorter than expected, which might have affected the results in the pre and post-tests. It would be interesting to have more classes in the intervention phase and to conduct a delayed post-test to investigate if participants still remembered the words learned. Replicating the present study taking into consideration the issues previously mentioned could corroborate greatly to the L2 vocabulary learning area.

6.2 PEDAGOGICAL IMPLICATIONS

The objective of this study was to investigate the influence of L1 and L2 PA on L2 vocabulary learning in a foreign language learning context. The purpose was to comprehend if the variables analyzed indeed influenced L2 vocabulary learning. Although L1 and L2 PA did not seem to influence L2 vocabulary learning, there are some considerations to be made in terms of pedagogical implications.

Regarding the pedagogical implications, the findings could help teachers comprehend the variables that might affect L2 vocabulary learning. Although the data was not sufficient to refute or confirm the hypotheses, there were some tendencies which might be important to consider. Since L1 and L2 phonological awareness seem to be factors in L2 vocabulary learning when vocabulary size is taken into account, this would be an interesting aspect for teachers to bear in mind. Thus, perhaps focusing on children's phonological awareness might help the ones who have low L2 vocabulary sizes to learn L2 vocabulary in foreign language contexts.

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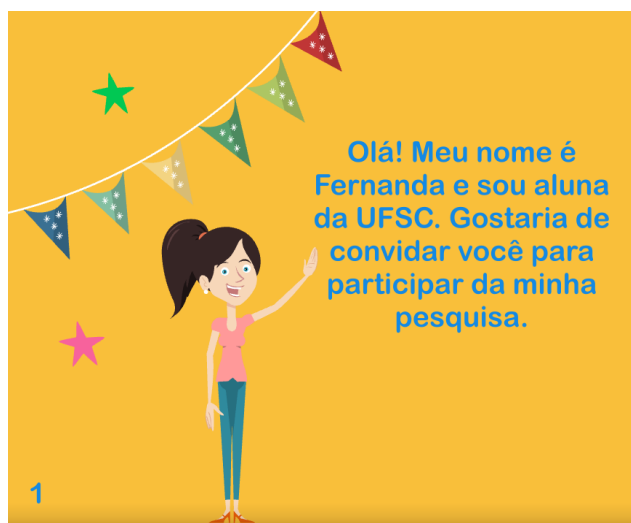
APPENDIX A – TERMO DE ASSENTIMENTO LIVRE E ESCLARECIDO PRESENCIAL

UNIVERSIDADE FEDERAL DE SANTA CATARINA
CENTRO DE COMUNICAÇÃO E EXPRESSÃO
PROGRAMA DE PÓS-GRADUAÇÃO EM INGLÊS
LABORATÓRIO DA LINGUAGEM E PROCESSOS COGNITIVOS

TERMO DE ASSENTIMENTO LIVRE E ESCLARECIDO

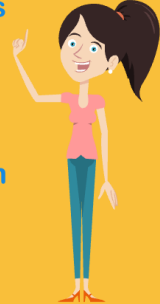*baseado na Resolução 510/16 do CNS (Conselho Nacional de Saúde)*
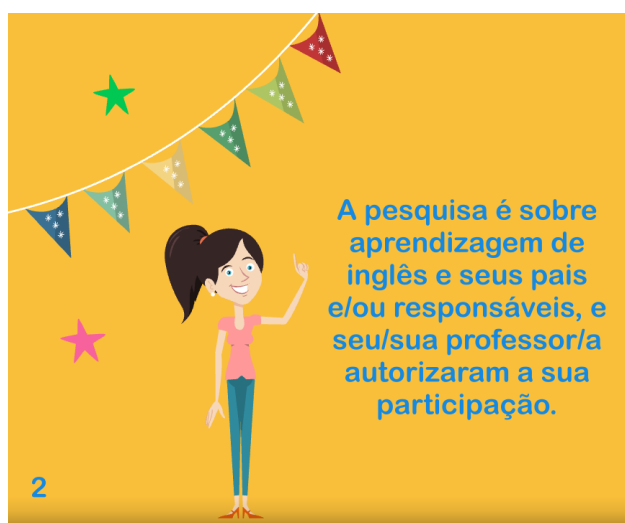
Se você aceitar participar, você vai fazer algumas tarefas.

5

Você vai fazer alguns exercícios de vocabulário. Por exemplo: você vai responder quais palavras conhece em inglês.

6

Também vamos brincar com as palavras. Você vai responder perguntas como "que palavra rima com cachorro?"

7

Vamos fazer também alguns exercícios de memória! Por exemplo, vou falar algumas palavras e números e você precisa lembrar deles para falar em voz alta.

8

E vou também pedir para você repetir em sequência algumas palavras que eu disser.

9

E por último você vai aprender palavras novas em inglês!

10

Essas atividades serão realizadas ou na sua escola presencialmente em um horário diferente das suas aulas ou remotamente também em um horário diferente das suas aulas. Os encontros das atividades durarão por volta de 30min. Já as aulas para aprender inglês serão na sua aula regular de inglês!

11

Se em algum momento você se sentir cansado(a), nervoso(a) ou chateado(a) você pode avisar! Você pode parar a atividade e continuar depois. Ou pode desistir também, sem problemas!

12

É importante você saber que seu nome, sua idade ou qualquer outra informação sua não serão compartilhados.

13

Você tem alguma pergunta? Você pode tirar suas dúvidas comigo antes de participar da pesquisa.

14

Ficarei muito feliz com a sua participação!!

15

Eu aceito participar da pesquisa da Fernanda sobre aprendizagem de inglês por crianças!

16
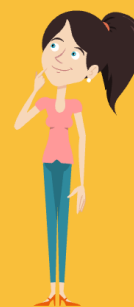
_____   Data _____/_____/_____

Assinatura e nome do(a) participante

_____   Data _____/_____/_____

Assinatura da pesquisadora

APPENDIX B – TERMO DE ASSENTIMENTO LIVRE E ESCLARECIDO REMOTO

5. Se você aceitar participar, você vai fazer algumas tarefas.

6. Você vai fazer alguns exercícios de vocabulário. Por exemplo: você vai responder quais palavras conhece em inglês.

7. Também vamos brincar com as palavras. Você vai responder perguntas como "que palavra rima com cachorro?"

8. Vamos fazer também alguns exercícios de memória! Por exemplo, vou falar algumas palavras e números e você precisa lembrar deles para falar em voz alta.

9. E vou também pedir para você repetir em sequência algumas palavras que eu disser.

10. E por último você vai aprender palavras novas em inglês!

11. Essas atividades serão realizadas de forma remota, em um horário diferente da aula que fique bom para você e seus/suas colegas. Elas serão feitas em dias diferentes e durarão por volta de 30min cada sessão.

12. Se em algum momento você se sentir cansado(a), nervoso(a) ou chateado(a) você pode avisar! Você pode parar a atividade e continuar depois. Ou pode desistir também, sem problemas!

13. É importante você saber que seu nome, sua idade ou qualquer outra informação sua não serão compartilhados.

14. Você tem alguma pergunta? Você pode tirar suas dúvidas comigo antes de participar da pesquisa.

15. Ficarei muito feliz com a sua participação!!

CREATED USING POWTOON

Por favor escolha uma das opções *

○ Eu aceito participar da pesquisa.

○ Eu não aceito participar da pesquisa.

Voltar   Próxima   Página 2 de 3   Limpar formulário

Nunca envie senhas pelo Formulários Google.

A Influência da Consciência Fonológica em L1 e L2 na Aprendizagem de Vocabulário na L2

Sua resposta foi registrada. Uma via de sua resposta será enviada para o email informado. Agradeço a sua disponibilidade.

Enviar outra resposta

APPENDIX C - TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO PRESENCIAL

UNIVERSIDADE FEDERAL DE SANTA CATARINA
CENTRO DE COMUNICAÇÃO E EXPRESSÃO
PROGRAMA DE PÓS-GRADUAÇÃO EM INGLÊS
LABORATÓRIO DA LINGUAGEM E PROCESSOS COGNITIVOS

TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO – TCLE
baseado na Resolução 510/16 do CNS (Conselho Nacional de Saúde)

Pesquisa: **A INFLUÊNCIA DA CONSCIÊNCIA FONOLÓGICA EM L1 E L2 NA APRENDIZAGEM DE VOCABULÁRIO NA L2**

Senhores Pais e/ou responsáveis,

Eu, Fernanda da Costa Alves, aluna de Mestrado do Programa de Pós-Graduação em Inglês – Estudos Linguísticos e Literários, sob orientação da professora Dra. Mailce Borges Mota na Universidade Federal de Santa Catarina – UFSC, gostaria de convidar seu/sua filho/a para participar como voluntário/a deste estudo, com seu consentimento.

O objetivo geral desta pesquisa é investigar a influência da habilidade de reconhecer e manipular os sons da língua em português e em inglês na aprendizagem de vocabulário em língua estrangeira (inglês) em crianças do sexto ano do ensino fundamental, em ambiente de sala de aula, ou seja, durante a aprendizagem escolar.

Seu/sua filho/a será solicitado/a a realizar as seguintes atividades:

1. **Algumas tarefas para avaliar o conhecimento de vocabulário na língua estrangeira (inglês):** São atividades aplicadas em português de conhecimento de palavras da língua inglesa.

2. **Algumas tarefas de manipulação e reconhecimento dos sons em português e inglês:** trata-se de atividades de curta duração adequadas à faixa etária em que seu/sua

filho/a será requisitado/a a responder perguntas tais quais "qual palavra rima com cama?", "qual dessas palavras começa com o mesmo som: areia, bota, arena ou maçã?".

3. **Algumas tarefas de memória fonológica de curto prazo:** trata-se de duas atividades de curta duração adequadas à faixa etária em que seu/sua filho/a será requisitado/a a repetir uma sequência de palavras faladas pela pesquisadora.

4. **Uma tarefa de memória de trabalho:** trata-se de uma atividade de curta duração adequada à faixa etária em que seu/sua filho/a terá que repetir em ordem uma sequência de números e letras falados pela pesquisadora.

5. **Aulas para o ensino de vocabulário da língua estrangeira:** Serão ministradas aulas visando ensinar novas palavras em inglês.

A realização destas atividades pode causar algum desconforto, tédio, nervosismo ou cansaço físico para seu/sua filho/a. Para evitar que as atividades sejam cansativas ou desconfortáveis garantiremos intervalos entre as tarefas e períodos curtos na fase de ensino de vocabulário (por volta de 30min). Seu/sua filho/a terá como um possível benefício, a aprendizagem de vocabulário em inglês. Entretanto, seu/sua filho/a pode desistir a qualquer momento sem prejuízo de qualquer natureza para ele/ela.

As tarefas poderão ser realizadas de forma presencial ou remota. Caso o/a seu/sua filho/a possa comparecer em um horário alternativo às aulas regulares, será feita de forma presencial. Caso seu/sua filho/a não tenha essa possibilidade, as tarefas poderão ser feitas remotamente em um horário alternativo às aulas regulares. Já as aulas para ensino de vocabulário da língua estrangeira serão realizadas no período da aula regular de inglês do/da seu/sua filho/a (em comum acordo com a professora responsável) de forma presencial.

Caso o/a Sr(a) dê o seu consentimento e seu/sua filho/a aceite participar da pesquisa, é garantido que a identidade e privacidade do seu/sua filho/a será totalmente preservada, não haverá divulgação de nomes ou identificação dos participantes de qualquer forma. Cada criança receberá um código e é este código que será usado na pesquisa. Mesmo que não seja a vontade das pesquisadoras, pode acontecer de outras pessoas terem acesso às respostas e informações pessoais dos participantes. Para evitar que isso aconteça, as tarefas serão realizadas individualmente com cada aluno/a e os dados serão armazenados no Laboratório da Linguagem e Processos Cognitivos (LabLing) e apenas as pesquisadoras responsáveis terão acesso.

Os dados gerados nesta pesquisa serão disponibilizadas em uma plataforma de acesso público chamada *Open Science Framework* (OSF). Essa prática será adotada para garantir que

mais pesquisadores possam verificar a veracidade do estudo conduzido, bem como a possível replicação do presente estudo. Entretanto, garantimos que a identidade do seu/sua filho/a ou até mesmo da escola não será revelada em nenhum momento. A planilha que será disponibilizada com os dados será toda em formato de números (médias das pontuações nos tarefas) e códigos alfanuméricos (código dos participantes). Por exemplo, A456 (código do participante) - 6 (pontuação média na tarefa realizada). Dessa forma, não será possível associar esse dado a nenhum participante, garantindo assim que a identidade do seu/sua filho/a não será revelada neste processo. Caso o/a Sr(a) queira que os dados do seu/sua filho/a sejam retirados da plataforma, o/a Sr(a) poderá fazer essa requisição a qualquer momento e os dados serão retirados.

Os resultados desta pesquisa poderão ser divulgados em eventos ou publicações científicas, mas nenhuma informação sobre você ou seu/sua filho/a será mencionada em momento algum. O/A Sr(a) pode receber os resultados a qualquer momento. Para isso, é só entrar em contato com as pesquisadoras. Se o/a Sr(a) ou seu/sua filho/a tiverem alguma despesa por causa da pesquisa, vocês têm direito a receber ressarcimento. Se o/a Sr(a) ou seu/sua filho/a tiverem prejuízos por causa da pesquisa, vocês têm direito à indenização.

O presente estudo foi aprovado pelo Comitê de Ética em Pesquisas com Seres Humanos da Universidade Federal de Santa Catarina (CEPSH-UFSC). Nós, pesquisadoras, nos comprometemos a realizar a pesquisa de acordo com a Resolução do Conselho Nacional de Saúde no 510, de 07 de abril de 2016, que estabelece as normas éticas para as pesquisas em Ciências Humanas e Sociais. O CEPSH-UFSC é um órgão colegiado interdisciplinar, deliberativo, consultivo e educativo e está vinculado à Universidade Federal de Santa Catarina. O CEPSH-UFSC foi criado para defender os seus direitos, garantir que eles sejam respeitados e que a pesquisa seja realizada de forma ética, assegurando todos os seus direitos e bem estar.

Informo que o/a Sr(a) tem a garantia de acesso, a qualquer momento, a esclarecimentos sobre o estudo. Caso haja alguma consideração ou dúvida sobre a pesquisa, entre em contato pelo e-mail: dcafernanda@gmail.com; ou pelo fone (XX)XXXXXXXXX); ou também com a professora Dra. Mailce Borges Mota, através do e-mail mailce.mota@ufsc.br, telefone (48) 3721-3792 ou no prédio do Centro de Comunicação e Expressão, Prédio B, Sala 513, CEP 88040-900, na Universidade Federal de Santa Catarina (UFSC). Você também pode entrar em contato com o Comitê de Ética em Pesquisa com Seres Humanos da UFSC, através do telefone (48) 3721-6094, e-mail cep.propesq@contato.ufsc.br ou no Prédio Reitoria II, Rua Desembargador Vitor Lima, n° 222, 7° andar, sala 701 – Trindade – CEP 88040-400 –

Florianópolis/SC.

Como informado acima, é garantida a liberdade da retirada de consentimento a qualquer momento e seu/sua filho/a pode deixar de participar do estudo, sem qualquer prejuízo ou punição.

Anexo está o consentimento livre e esclarecido para ser assinado caso não tenha ficado qualquer dúvida.

Termo de Consentimento Livre e Esclarecido

Concordo voluntariamente em permitir a participação do(a) meu(minha) filho(a) na pesquisa **A INFLUÊNCIA DA CONSCIÊNCIA FONOLÓGICA EM L1 E L2 NA APRENDIZAGEM DE VOCABULÁRIO NA L2,** conduzida por Fernanda da Costa Alves.

_____ Data _____/_____/_____

Assinatura do pai/mãe ou responsável

Nome: _____

_____ Data _____/_____/_____

Assinatura da pesquisadora

Nome da criança:_____

APPENDIX D - TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO REMOTO

A Influência da Consciência Fonológica em L1 e L2 na Aprendizagem de Vocabulário na L2

dcafernanda@gmail.com Alternar conta

*Obrigatório

Termo de Consentimento Livre e Esclarecido

Pesquisa: A INFLUÊNCIA DA CONSCIÊNCIA FONOLÓGICA EM L1 E L2 NA APRENDIZAGEM DE VOCABULÁRIO NA L2

Senhores Pais e/ou responsáveis,

Eu, Fernanda da Costa Alves, aluna de Mestrado do Programa de Pós-Graduação em Inglês – Estudos Linguísticos e Literários, sob orientação da professora Dra. Mailce Borges Mota na Universidade Federal de Santa Catarina – UFSC, gostaria de convidar seu/sua filho/a para participar como voluntário/a deste estudo, com seu consentimento.

O objetivo geral desta pesquisa é investigar a influência da habilidade de reconhecer e manipular os sons da língua em português e em inglês na aprendizagem de vocabulário em língua estrangeira (inglês) em crianças do sexto ano do ensino fundamental, em ambiente de sala de aula, ou seja, durante a aprendizagem escolar.

Seu/sua filho/a será solicitado/a a realizar as seguintes atividades:

1. Algumas tarefas para avaliar o conhecimento de vocabulário na língua estrangeira (inglês): São atividades aplicadas em português de conhecimento de palavras da língua inglesa.

2. Algumas tarefas de manipulação e reconhecimento dos sons em português e inglês: trata-se de atividades de curta duração adequadas à faixa etária em que seu/sua filho/a será requisitado/a a responder perguntas tais quais "qual palavra rima com cama?", "qual dessas palavras começa com o mesmo som: areia, bota, arena ou maçã?".

3. Algumas tarefas de memória fonológica de curto prazo: trata-se de duas atividades de curta duração adequadas à faixa etária em que seu/sua filho/a será requisitado/a a repetir

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3. Algumas tarefas de memória fonológica de curto prazo: trata-se de duas atividades de curta duração adequadas à faixa etária em que seu/sua filho/a será requisitado/a a repetir uma sequência de palavras faladas pela pesquisadora.

4. Uma tarefa de memória de trabalho: trata-se de uma atividade de curta duração adequada à faixa etária em que seu/sua filho/a terá que repetir em ordem uma sequência de números e letras falados pela pesquisadora.

5. Aulas para o ensino de vocabulário da língua estrangeira: Serão ministradas aulas visando ensinar novas palavras em inglês.

As atividades e as aulas serão realizadas de forma remota, por plataformas como o Formulários Google e o Zoom, em dias alternados e em um horário diferente do horário da aula regular de inglês. A realização destas atividades pode causar algum desconforto, tédio, nervosismo ou cansaço físico para seu/sua filho/a devido a duração das atividades e tarefas ou ao modelo remoto. Para evitar que as atividades sejam cansativas, desconfortáveis ou que seu/sua filho/a passe tempo demais em frente ao computador, garantiremos intervalos entre as tarefas e períodos curtos na fase de ensino de vocabulário (por volta de 30min). Seu/sua filho/a terá como um possível benefício, a aprendizagem de vocabulário em inglês. Entretanto, seu/sua filho/a pode desistir a qualquer momento sem prejuízo de qualquer natureza para ele/ela.

Caso o/a Sr(a) dê o seu consentimento e seu/sua filho/a aceite participar da pesquisa, é garantido que a identidade e privacidade do seu/sua filho/a será totalmente preservada, não haverá divulgação de nomes ou identificação dos participantes de qualquer forma. Cada criança receberá um código e é este código que será usado na pesquisa. Mesmo que não seja a vontade das pesquisadoras, pode acontecer de outras pessoas terem acesso às respostas e informações pessoais dos participantes. Para evitar que isso aconteça, as tarefas serão realizadas individualmente com cada aluno/a e as respostas ficarão em um dispositivo acessível somente por senha pessoal das pesquisadoras responsáveis.

Os dados gerados nesta pesquisa serão disponibilizadas em uma plataforma de acesso público chamada Open Science Framework (OSF). Essa prática será adotada para garantir que mais pesquisadores possam verificar a veracidade do estudo conduzido, bem como a possível replicação do presente estudo. Entretanto, garantimos que a identidade do seu/sua filho/a ou até mesmo da escola não será revelada em nenhum momento. A planilha que será disponibilizada com os dados será toda em formato de números (médias das pontuações nas tarefas) e códigos alfanuméricos (código do participante). Por exemplo, A456 (código do participante) - 6 (pontuação média na tarefa realizada). Dessa forma, não será possível associar esse dado a nenhum participante, garantindo assim que a identidade do seu/sua filho/a não será revelada neste processo. Caso o/a Sr(a) queira que os dados do seu/sua filho/a sejam retirados da plataforma, o/a Sr(a) poderá fazer essa requisição a qualquer momento e os dados serão retirados.

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Os resultados desta pesquisa poderão ser divulgados em eventos ou publicações científicas, mas nenhuma informação sobre você ou seu/sua filho/a será mencionada em momento algum. O/A Sr(a) pode receber os resultados a qualquer momento. Para isso, é só entrar em contato com as pesquisadoras. Se o/a Sr(a) ou seu/sua filho/a tiverem alguma despesa por causa da pesquisa, vocês têm direito a receber ressarcimento. Se o/a Sr(a) ou seu/sua filho/a tiverem prejuízos por causa da pesquisa, vocês têm direito à indenização.

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Como informado acima, é garantida a liberdade da retirada de consentimento a qualquer momento e seu/sua filho/a pode deixar de participar do estudo, sem qualquer prejuízo ou punição.

Por favor, escolha alguma das opções: *

○ Concordo voluntariamente em permitir a participação do(a) meu(minha) filho(a) na pesquisa A INFLUÊNCIA DA CONSCIÊNCIA FONOLÓGICA EM L1 E L2 NA APRENDIZAGEM DE VOCABULÁRIO NA L2, conduzida por Fernanda da Costa Alves. Declaro que li este documento e que compreendi as informações do Termo de Consentimento Livre e Esclarecido. Eu compreendo meus direitos como responsável, bem como os direitos do meu(minha) filho(a) e permito a participação dele(dela) neste estudo e em ceder os dados do meu(minha) filho(a) para a pesquisa. Compreendo o objetivo do estudo, a forma como ele será realizado e que poderei retirar o meu consentimento a qualquer momento, antes ou durante a pesquisa, sem penalidade, prejuízo ou perda de qualquer benefício que eu possa ter adquirido. Receberei uma via do termo de consentimento no meu e-mail após o envio deste formulário.

○ Não autorizo meu(minha) filho(a) a participar da pesquisa.

Voltar   Próxima   ▭▭▭▭▭ Página 2 de 3   Limpar formulário

A Influência da Consciência Fonológica em L1 e L2 na Aprendizagem de Vocabulário na L2

Sua resposta foi registrada. Uma via de sua resposta será enviada para o email informado. Agradeço pela disponibilização do seu tempo.

Enviar outra resposta

Google Formulários

APPENDIX E - PERSONAL BACKGROUND QUESTIONNAIRE

QUESTIONÁRIO: LEVANTAMENTO DE PERFIL DOS PARTICIPANTES

Instruções: Por favor, responda todas as questões.

Código do participante:
Idade:
Nacionalidade:
Sexo: ( ) M ( ) F

1) Você estuda inglês na escola desde que ano?
   ( ) 1º ano
   ( ) 2º ano
   ( ) 3º ano
   ( ) 4º ano
   ( ) 5º ano
   ( ) 6º ano

2) Instrução em Língua inglesa: Você frequentou aulas de inglês em um curso de línguas fora da escola?

   ( )Sim ( ) Não

   Se 'sim' quanto tempo você frequentou as aulas (um mês, um ano, etc.)?

3) Você ainda frequenta aulas de inglês em um curso de línguas?

   ( ) Sim ( ) Não

   Se 'sim', qual o seu nível?

4) Em uma escala de 1-4 (sendo 1 - nunca uso e 4 - uso frequentemente) o quanto você usa inglês fora da escola?

   ( ) 1 - eu nunca uso inglês fora da escola
   ( ) 2 - eu uso muito pouco inglês fora da escola
   ( ) 3 - eu razoavelmente uso inglês fora da escola
   ( ) 4 - eu frequentemente uso inglês fora da escola

5) Você usa o inglês fora da sala de aula?

   ( ) Sim ( ) Não

Se 'sim', assinale todas as alternativas que se aplicam ao seu caso.
( ) lendo livros e revistas
( ) navegando na internet
( ) jogando vídeo-game
( ) assistindo filmes

Sinta-se à vontade para citar outros contextos em que você usa o inglês:

6) Você fala alguma outra língua estrangeira (por exemplo, espanhol)?

( ) Sim ( ) Não

Se sim, qual (ou quais)?

APPENDIX F - VOCABULARY LEVELS TEST

Tarefa de níveis em vocabulário: Versão 1

(NATION, 1983 revisado por SCHMITT et al., 2001), adaptado por de Souza (2015) e Mota e Souza (2016)

Instrução: Esta é uma tarefa de vocabulário. Escolha a palavra certa para cada significado. Escreva o número da palavra na linha do significado correspondente. Como no exemplo:

l business _____ Uma parte da casa

2 clock _____ Um animal com quatro patas

3 horse _____ Algo usado para escrever

4 pencil

5 shoe

6 wall

Você pode responder da seguinte maneira:

l business __6__ Uma parte da casa

2 clock __3__ Um animal com quatro patas

3 horse __4__ Algo usado para escrever

4 pencil

5 shoe

6 wall

Algumas palavras estão no teste para aumentar o desafio. Você não precisa encontrar um significado para as outras palavras. No exemplo acima, as palavras de desafio são business, clock, shoe. Tente fazer todas as partes do teste!

Versão 1 Nível das 2.000 palavras

1 birth

2 dust   _____ jogo

3 operation   _____ ganhar

4 row   _____ nascer

5 sport

6 victory

1 choice

2 crop   _____ calor, frio

3 flesh   _____ carne

4 salary   _____ dinheiro pago regularmente por um trabalho feito

5 secret

6 temperature

1 cap

2 education   _____ ensinar e aprender

3 journey   _____ números usados para medir algo

4 parent   _____ ir a um lugar distante

5 scale

6 trick

1 attack

2 charm   _____ ouro e prata

3 lack   _____ qualidade atraente

4 pen   _____ não ter algo

5 shadow

6 treasure

1 cream

2 factory   _____ parte do leite integral

3 nail   _____ muito dinheiro

4 pupil   _____ uma pessoa que estuda

5 sacrifice

6 wealth

1 adopt

2 climb   _____ subir

3 examine   _____ olhar de perto

4 pour   _____ estar por todos os lados

5 satisfy

6 surround

1 bake

2 connect   _____ juntar, unir

3 inquire   _____ andar sem rumo

4 limit   _____ manter algo em certo tamanho

5 recognize

6 wander

1 burst

2 concern   _____ estourar

3 deliver   _____ melhorar

4 fold   _____ levar algo a alguém

5 improve

6 urge

1 original

2 private   _____ primeiro

3 royal   _____ não é público

4 slow   _____ tudo somado

5 sorry

6 total

1 brave

2 electric   _____ feito costumeiramente

3 firm   _____ querer comida

4 hungry   _____ não ter medo

5 local

6 usual

Versão 1 Nível das 3.000 palavras

1 belt

2 climate _____ ideia

3 executive _____ parte de dentro da mão

4 notion _____ faixa de couro usada na cintura

5 palm

6 victim

1 acid

2 bishop _____ sensação de frio

3 chill _____ animal de fazenda

4 ox _____ organização

5 ridge

6 structure

1 bench

2 charity _____ assento longo

3 jar _____ ajuda aos necessitados

4 mate _____ parte de um país

5 mirror

6 province

1 boot

2 device _____ oficial militar

3 lieutenant _____ um tipo de rocha

4 marble _____ tubo por onde o sangue flui

5 phrase

6 vein

1 apartment

2 candle   _____ um lugar para morar

3 draft   _____ chances de algo acontecer

4 horror   _____ primeira versão de algo escrito

5 prospect

6 timber

1 betray

2 dispose   _____ assustar

3 embrace   _____ dizer publicamente

4 injure   _____ machucar seriamente

5 proclaim

6 scare

1 encounter

2 illustrate   _____ encontrar

3 inspire   _____ implorar por ajuda

4 plead   _____ fechar completamente

5 seal

6 shift

1 assist

2 bother   _____ ajudar

3 condemn   _____ cortar com precisão

4 erect   _____ girar rapidamente

5 trim

6 whirl

1 annual

2 concealed   _____ selvagem

3 definite   _____ claro e preciso

4 mental   _____ acontece uma vez ao ano

5 previous

6 savage

1 dim

2 junior   _____ estranho

3 magnificent   _____ maravilhoso

4 maternal   _____ com pouca iluminação

5 odd

6 weary

Versão 1 Nível das 5.000 palavras

1 balloon

2 federation   _____ balde

3 novelty   _____ coisa incomum e interessante

4 pail   _____ saco de borracha cheio de ar

5 veteran

6 ward

1 alcohol

2 apron   _____ etapa de desenvolvimento

3 hip   _____ estado de sujeira e desorganização

4 lure   _____ peça usada na frente do corpo para proteger suas roupas

5 mess

6 phase

1 apparatus

2 compliment _____ expressão de admiração

3 ledge _____ instrumentos ou maquinário

4 revenue _____ dinheiro recebido por um governo

5 scrap

6 tile

1 bulb

2 document _____ cavalo fêmea

3 legion _____ grande grupo de soldados ou pessoas

4 mare _____ um pedaço de papel contendo informações

5 pulse

6 tub

1 concrete

2 era _____ forma circular

3 fibre _____ topo de uma montanha

4 loop _____ um longo período de tempo

5 plank

6 summit

1 blend

2 devise _____ misturar

3 hug _____ planejar ou inventar

4 lease _____ abraçar

5 plague

6 reject

1 abolish

2 drip   _____ terminar algo com uma lei

3 insert   _____ adivinhar o futuro

4 predict   _____ acalmar ou reconfortar alguém

5 soothe

6 thrive

1 bleed

2 collapse   _____ vir antes

3 precede   _____ cair de repente

4 reject   _____ mover-se com passos ou saltos rápidos

5 skip

6 tease

1 casual

2 desolate   _____ com cheiro forte

3 fragrant   _____ único

4 radical   _____ bom para a saúde

5 unique

6 wholesome

1 gloomy

2 gross   _____ vazio

3 infinite   _____ sombrio, triste

4 limp   _____ sem fim

5 slim

6 vacant

Versão 1 Nível das 10.000 palavras

1 antics

2 batch   _____ comportamento tolo

3 connoisseur   _____ um grupo de coisas iguais

4 foreboding   _____ pessoa que conhece arte, música, etc.

5 haunch

6 scaffold

1 auspices

2 dregs   _____ mistura confusa

3 hostage   _____ líquido naturalmente produzido pela boca

4 jumble   _____ partes mais inúteis de alguma coisa

5 saliva

6 truce

1 casualty

2 flurry   _____ número de mortos ou feridos

3 froth   _____ estar longe de outras pessoas

4 revelry   _____ celebração barulhenta e feliz

5 rut

6 seclusion

1 apparition

2 botany   _____ fantasma

3 expulsion   _____ estudo das plantas

4 insolence   _____ poça d'água

5 leash

6 puddle

1 arsenal

2 barracks   _____ felicidade

3 deacon   _____ situação difícil

4 felicity   _____ ministro em uma igreja

5 predicament

6 spore

1 acquiesce

2 bask   _____ aceitar sem protestos

3 crease   _____ sentar-se ou deitar-se no calor

4 demolish   _____ dobra em pano ou papel

5 overhaul

6 rape

1 blaspheme

2 endorse   _____ escorregar

3 nurture   _____ dar cuidados e alimentação

4 skid   _____ falar mal de Deus

5 squint

6 straggle

1 clinch

2 jot   _____ mover-se rapidamente

3 mutilate   _____ causar dano ou ferimento

4 smoulder   _____ queimar lentamente, sem criar chamas

5 topple

6 whiz

1 auxiliary

2 candid   _____ de mau humor

3 luscious   _____ cheio de si

4 morose   _____ quem dá apoio e ajuda

5 pallid

6 pompous

1 dubious

2 impudent   _____ rude, grosseiro

3 languid   _____ muito antigo

4 motley   _____ de vários tipos diferentes

5 opaque

6 primeval

APPENDIX G – PICTURE MATCHING TASK

Data:

Código do participante:

Escola:

Instrução: Escreva a alternativa que corresponde à figura:

1.   2.   3.   4.

( ) Strawber ( ) Cookie ( ) pie ( ) Butter

5.   6.   7.   8.

( ) Grape ( ) Carrot ( ) Cake ( ) Pea

9.   10.   11.   12.

( ) Pineapple ( ) Toast ( ) Bread ( ) Wine

13.   14.   15.

( ) Flour ( ) Pancake ( ) Jam ( ) Candy

17   18.   19.   20.

( ) Pepper ( ) Rice ( ) Honey ( ) Garlic

21.
( ) Corn

22.
( ) Peach

23.
( ) Melon

24.
( ) Tomato

25.
( ) Onion

26.
( ) Lettuce

27.
( ) Watermelon

28.
( ) Cucumber

29.
( ) Mushroom

30.
( ) Pear

31.
( ) Plum

32.
( ) Blackberry
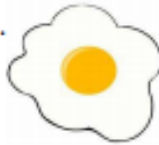
33.
( ) Sugar

34
( ) Beef

35.
( ) Egg

36.
( ) Chicken

37.
( ) Avocado

38.
( ) Potato

39.
( ) Turkey

40.
( ) Cauliflower

APPENDIX H – PROVA DE CONSCIÊNCIA FONOLÓGICA

Prova de Consciência Fonológica por produção Oral
(SEABRA; CAPOVILLA, 2013)

Síntese Silábica: A criança deve unir as sílabas faladas pelo aplicador, dizendo qual palavra resulta da união.

Instruções: Vamos jogar o jogo do robô, eu vou fazer de conta que sou um robô que fala as partes (sílabas) das palavras lentamente (com taxa de uma sílaba por segundo), e você deve adivinhar o que o robô está falando.

Treino: que palavra resulta da união de:

/pa/ - /pel/;

/pro/ - /fe/ - /sso/ - /ra/.

Tarefa: que palavra resulta da união de:

/lan/ - /che/→ /lanche/;

/ca/ - /ne/ - /ta/ → /caneta/;

Síntese Fonêmica: A criança deve unir os fonemas falados pelo aplicador, dizendo qual palavra resulta da união.

Instruções: Vamos jogar novamente o jogo do robô, mas agora eu vou falar os sons (fonemas) das palavras lentamente (com taxa de uma sílaba por segundo), e você deve adivinhar o que o robô está falando.

Treino: que palavra resulta da união de:

/f/ - /o/ - /i/;

/l/ - /a/ - /ç/ - /o/.

Tarefa: que palavra resulta da união de:

/s/ - /ó/ → /só/;

/m/ - /ã/ - /e/ → /mãe/;

Rima: A criança deve julgar, dentre três palavras, quais são as duas que terminam com o mesmo som.

Instruções: Vou dizer três palavras, duas terminam com o mesmo som, e uma termina com um som diferente. Diga quais são as duas que terminam com o mesmo som.

Treino: quais palavras terminam com o mesmo som:

/bolo/, /mala/, /rolo/ → /bolo/, /rolo/;

/baleia/, /sereia/, /canoa/ → /baleia/, /sereia/.

Tarefa: quais palavras terminam com o mesmo som:

/mão/, /pão/, /só/ → /mão/, /pão/;

/queijo/, /moça/, /beijo/ →/queijo/, /beijo/;

Aliteração: A criança deve julgar, dentre três palavras, quais são as duas que começam com o mesmo som.

Instruções: Vou dizer três palavras, duas começam com o mesmo som, e uma começa com um som diferente. Diga quais são as duas que começam com o mesmo som.

Treino: quais palavras começam com o mesmo som:

/fada/, /face/, /vila/ → /fada/, /face/;

/escola/, /menino/, /estrada/ → /escola/, /estrada/.

Tarefa: quais palavras começam com o mesmo som:

/boné/, /rato/, /raiz/ → /rato/, /raiz/;

/colar/, /fada/, /coelho/ → /colar/, /coelho/;

Segmentação Silábica: A criança deve separar uma palavra falada pelo aplicador nas suas sílabas componentes.

Instruções: Vou dizer uma palavra, e agora você é quem vai fingir ser o robô, repetindo a palavra bem devagar, falando cada parte separadamente.

Treino: separar as sílabas de:

/livro/ → /li/ - /vro/;

/bexiga/ → /be/ - /xi/ - /ga/.

Tarefa: separar as sílabas de:

/bola/ → /bo/ - /la/;

/lápis/ → /lá/ - /pis/;

Segmentação Fonêmica: A criança deve separar uma palavra falada pelo aplicador nos fonemas componentes.

Instruções: Vou dizer uma palavra, e você vai fingir ser o robô, repetindo a palavra bem devagar, mas agora falando as partes menores ainda da palavra, falando cada som separadamente.

Treino: separar os fonemas de:

/nó/ → /n/ - /ó/;

/dia/ → /d/- /i/ - /a/;

Tarefa: separar os fonemas de:

/pé/ → /p/ - /é/;

/aço/ → /a/- /ç/ - /o/;

Manipulação Silábica: A criança deve adicionar e subtrair sílabas de palavras dizendo qual a palavra formada.

Instruções: Você vai dizer como fica uma palavra quando se coloca ou se tira um pedaço.

Treino:

adicionar /rrão/ ao fim de /maca/ → /macarrão/;

subtrair /sa/ do início de /sapato/ → /pato/.

Tarefa:

adicionar /na/ ao fim de /per/ → /perna/;

subtrair /ba/ do início de /bater/ → /ter/;

Manipulação Fonêmica: A criança deve adicionar e subtrair fonemas de palavras dizendo qual a palavra formada.

Instruções: Você vai dizer como fica uma palavra quando se coloca (ou se tira) um pedaço.

Treino:

adicionar /r/ no fim de /come/ → /comer/;

subtrair /p/ do início de /punha/ → /unha/.

<u>Tarefa:</u>

adicionar /r/ no fim de /pisca/ → /piscar/;

subtrair /f/ do início de /falta/ → /alta/;

Transposição Silábica: A criança deve inverter as sílabas de palavras dizendo qual a palavra formada.

<u>Instruções:</u> Você vai falar uma palavra de trás para frente, invertendo as partes da palavra.

<u>Treino:</u> inverter as sílabas de:

/pata/ → /tapa/;

/dona/ → /nado/;

<u>Tarefa:</u> inverter as sílabas de:

/boca/ → /cabo/;

/lobo/ → /bolo/;

Transposição Fonêmica: A criança deve inverter os fonemas de palavras dizendo qual a palavra formada.

<u>Instruções:</u> Agora você vai falar a palavra de trás para frente, mas invertendo cada som da palavra.

<u>Treino:</u> inverter os fonemas de:

/és/ → /sé/;

/sai/ → /ias/;

<u>Tarefa:</u> inverter os fonemas de:

/olá/ → /alô/;

/sala/ → /alas/;

APPENDIX I – L2 PHONOLOGICAL AWARENESS TEST

Queensland University Inventory of Literacy (QUIL)

(DODD; HOLM; OERLEMANS; MCCORMICK, 1996)

1. NONWORD SPELLING

Repetitions	Discontinuation	Additional Materials
One allowed	Grade 1: Items 1-5	Nonword Spelling Response Sheet
	Grades 2-3: Items 1-12	
	Grades 4-7: Items 1-24	

Circle 1 for each plausible spelling. Plausible spellings are spellings which reflect your pronunciation. Circle 0 for an implausible spelling or for no response Refer to Test Manual for guide to plausible spelling.

I'm going to say some words to you. I want you to listen carefully because they are made up words so you won't have heard them before. I'll say each word two times. I want you to write down how you think the made up word could be spelled. Even if you're not sure I want you to try and write them down.

	Stimuli	Pronunciation	Score	
1.	dorf	dɔf	1	0
2.	lont	lɒnt	1	0
3.	sheve	ʃiv	1	0
4.	wump	wʌmp	1	0
5.	suts	sʌts	1	0
6.	craid	kreɪd	1	0
7.	strecker	strɛkə	1	0
8.	pitfair	pɪtfɛə	1	0
9.	truckow	trʌkaʊ	1	0
10.	baytle	beɪtəl	1	0
11.	klondly	klɒndli	1	0
12.	delsom	dɛlsɒm	1	0
13.	tismuppered	tɪsmʌpəd	1	0
14.	strapobees	stræpəubiːz	1	0
15.	beartelfoam	bɛatəlfoʊm	1	0
16.	soptipal	sɒptəpəl	1	0
17.	elinam	ɛlɪnɑːm	1	0
18.	klepperinq	klɛpərɪŋ	1	0
19.	churtlesneedee	tʃɜtəlsnidiː	1	0
20.	complefation	kɒmplɪfeɪʃən	1	0
21.	shepelartoe	ʃɛpəlatoʊ	1	0
22.	diskerpilishine	dɪskəpɪlʃaɪn	1	0
23.	dramplehoffer	dræmpəlhɒfə	1	0
24.	strimperdiction	strɪmpədɪkʃən	1	0
		Raw Score		

2. NONWORD READING

Repetitions	Discontinuation	Additional Materials
Instructions may be repeated once	4 consecutive errors/NR	Nonword Reading Stimulus Sheet

Circle 1 for each plausible response, 0 for an implausible response and NR for no response. A plausible response is any that can be logically derived from the spelling. There is space for you to transcribe responses if you want to. All responses should be tape recorded to check the accuracy of the transcriptions.

Here are some words. I want you to read as many of them as you can. You won't have seen these words before because they're made up but I want you to try to read as many as possible.

	Stimuli	Transcription	Score		
1.	acked		1	0	NR
2.	slet		1	0	NR
3.	bocks		1	0	NR
4.	sord		1	0	NR
5.	sed		1	0	NR
6.	jint		1	0	NR
7.	cralp		1	0	NR
8.	squck		1	0	NR
9.	framyip		1	0	NR
10.	unyen		1	0	NR
11.	balty		1	0	NR
12.	enuf		1	0	NR
13.	wissul		1	0	NR
14.	bicoz		1	0	NR
15.	querdly		1	0	NR
16.	stinter		1	0	NR
17.	dickshenree		1	0	NR
18.	didderent		1	0	NR
19.	acksident		1	0	NR
20.	domplimint		1	0	NR
21.	stradamus		1	0	NR
22.	ritriffick	~	1	0	NR
23.	licorish		1	0	NR
24.	ocksidgen		1	0	NR
		Raw Score			

3. SYLLABLE IDENTIFICATION

Repetitions	Discontinuation	Additional Materials
One allowed	5 consecutive errors/NR	None

Circle 1 for each correct response, 0 for an incorrect response and NR for no response.

Some words have parts that sound the same. Like the words helping and jumping - they both end with "ping" - the ends of the words are the same. Which part of compete and compare sound the same? (Give appropriate feedback.) I'm going to say some pairs of words and I want you to tell me which part sounds the same. Some of the words won't have any parts the same like pillow and birthday. You'll have to listen very carefully and tell me if they don't have any parts the same, or if they have the same beginning or the same ending.

Let's try some more before we start (provide appropriate feedback):
- *racket - locket* (ending);
- *provide - enough* (nothing);
- *party - partner* (beginning).

Continue on to test items but do not provide any feedback. Be careful not to stress the syllables that are the same.

Stimuli	Position		Score	
1. awful - helpful	ending	1	0	NR
2. level - number	nothing		0	NR
3. hidden - sudden	ending	1	0	NR
4. ticket - tickle	beginning		0	NR
5. kitten - yellow	nothing	1	0	NR
6. maiden - maybe	beginning	1	0	NR
7. correct - direct	ending	1	0	NR
8. garden - passage	nothing	1	0	NR
9. raccoon - cocoon	ending	1	0	NR
10. letter - lettuce	beginning	1	0	NR
11. behind - begin	beginning	1	0	NR
12. forest - dinner	nothing	1	0	NR
	Raw Score			

4. SYLLABLE SEGMENTATION

Repetitions	Discontinuation	Additional Materials
None allowed	4 consecutive errors/NR	None

Circle 1 for each correct response, 0 for an incorrect response and NR for no response. Clapping or tapping out the syllables is allowed.

Do you know what a syllable is? Syllables are parts of words. (If the concept of syllables is known use the term "syllables" instead of "parts" throughout the instructions.)

Your name is (client's name). *Let's see if we can count the number of parts in your name.* Segment the name while tapping (clapping/counting on fingers etc.) out the syllables. *There are X parts in your name.*

How many parts are there in the word coffee? (Provide appropriate feedback.) *How about the word* candlestick?

Now I'm going to ask you to listen to some more words and I want you to tell me how many parts there are in each one.

Stimuli	No. of Syllables		Score	
1. table	2	1	0	NR
2. inhabitant	4	1	0	NR
3. hospital	3	1	0	NR
4. university	5	1	0	NR
5. betrayal	3	1	0	NR
6. chaos	2	1	0	NR
7. multiplication	5	1	0	NR
8. economy	4	1	0	NR
9. democracy	4	1	0	NR
10. anger	2	1	0	NR
11. investigation	5	1	0	NR
12. animal	3	1	0	NR
	Raw Score			

5. SPOKEN RHYME RECOGNITION

Repetitions	Discontinuation	Additional Materials
None allowed	All items should be given	None

Mark the client's responses as Yes or No. The correct responses are shaded. Circle 1 for each correct response or 0 for an incorrect response.

Some words rhyme. When two words rhyme they have the same sounds at the end like sit and fit or hat and rat I'm going to say some pairs of words. Some of the words will rhyme, they won't be exactly the same but they will sound the same at the end. You have to tell me if the two words rhyme or not. You'll have to listen carefully because I can only say them once. We'll do a few together to practise.

shell / bell   *These words sound alike - shell, bell - they rhyme.*
road / broad   *These words don't rhyme - road, broad.*
fort / brought   *What about these words? Do they sound alike?*
bout / bait   *Do they rhyme?* Give appropriate feedback.

Present the test items. *Do these words rhyme?*

Stimuli	Response		Score	
	Yes	No		
1. jar / tar	▓		1	0
2. fit / fat		▓	1	0
3. said / paid	▓		1	0
4. through / new	▓		1	0
5. wait / wet		▓	1	0
6. fate / mate	▓		1	0
7. were / where		▓	1	0
8. fought / port	▓		1	0
9. rang / sang	▓		1	0
10. bear / rear		▓	1	0
11. laugh / staff	▓		1	0
12. beg / bag		▓	1	0
		Raw Score		

6. VISUAL RHYME RECOGNITION

Repetitions	Discontinuation	Additional Materials
Instructions may be repeated once	All items should be given	Visual Rhyme Recognition Response Sheet

The client will mark their responses on the Response Sheet Transfer their responses to the analysis table below. The correct responses are shaded. Circle 1 for each correct response or 0 for an incorrect response.

Some words look alike but they don't sound alike Other words sound alike but they don't look alike. I want you to look at these words and decide which pairs of words sound alike Listen to them in your head as you read them and tick the Yes box if they sound alike and the No box if they sound different

Lets practise by looking at these words together. Refer to the Visual Rhyme Recognition Response Sheet and work through the examples. The client should tick the boxes. Point out the difference between looking alike and sounding alike.

Now look at these words. Do these words sound alike? Present test items but do not provide feedback.

Stimuli	Response		Score	
	Yes	No		
1. sing / ring	▓		1	0
2. rot / rat		▓	1	0
3. post / lost		▓	1	0
4. maid / grade	▓		1	0
5. ball / bill		▓	1	0
6. wife / life	▓		1	0
7. worm / form		▓	1	0
8. fist / missed	▓		1	0
9. song / wrong	▓		1	0
10. lace / lice		▓	1	0
11. core / raw	▓		1	0
12. steak / peak		▓	1	0
		Raw Score		

7. SPOONERISMS

Repetitions	Discontinuation	Additional Materials
Two repetitions allowed	3 consecutive errors/NR on both elements	None

Score 1 for each correct response, 0 for an incorrect response or for no response. The two elements of the spoonerism are scored individually. Simple reversal of the elements with correct spoonerising is an acceptable response.

We're going to make some spoonerisms out of pairs of words. Do you know what spoonerisms are? A spoonerism is what happens when you mix two words up. You take the first sound off each word and swap them so that you make new words. If I take the first sounds off felt *and* made *and swap them over I get* melt *and* fade: felt made *becomes* melt fade. *I've taken the /m/ from* made *and put it on* felt *to make* melt *And I've taken the /f/ from* felt *and put it on* made *to make* fade. *So* felt made *becomes* melt fade. *I'll let you try some. How would you do it for* long sigh? (Provide appropriate feedback and work through the remaining examples.) **shoe tin; thin chat; cray true.** Emphasise that it is the first sound not the first letter that should be moved.

Stimuli	Correct Spoonerism		Score	
	Element 1	Element 2	Element 1	Element 2
1. sit fun	fit	sun		
2. can mat	man	cat		
3. dark ship	shark	dip		
4. that pear	pat	there		
5. chilly seats	silly	cheats		
6. shirt head	hurt	shed		
7. thin chick	chin	thick		
8. brown crew	crown	brew		
9. shin thought	thin	short		
10. flown blurt	blown	flirt		
		Totals		
		Raw Score		

8. PHONEME DETECTION

Repetitions	Discontinuation	Additional Materials
One repetition allowed	All items should be given	None

Circle the client's choice. Score 1 for each correct response, 0 for an incorrect response or for no response. The correct responses are capitalised.

I'm going to say four words in a row. Three of the words will have something the same but one will be different. I'll tell you which part of the words will be the same and then you'll have to listen and tell me which one is the odd one out. Listen to the first sound in these words - log let sip lap *- which word was different?* (Give appropriate feedback.)

This time I want you to listen to the end sounds - had mad bad rug *- which one was different that time?* (Give appropriate feedback.)

How about the very last sound in - head bag rod guard *- which word had a different last sound?* (Give appropriate feedback.)

This time I want you to listen to the middle sounds in the words - mugger digging wagon pillow *- which word had a different sound in the middle?* (Give appropriate feedback.)

Listen to the _____ sound in these words.

Position	Stimuli				Score
1. First	bed	bag	MOP	bus	
2.	mug	mad	moth	TEN	
3.	ROD	pin	peg	pat	
4. End	ran	DOLL	can	fan	
5.	BED	lip	sip	rip	
6.	sit	bit	pit	CAN	
7. Last	mop	hip	SUN	keep	
8.	rug	HOT	wig	tag	
9.	RAN	dot	let	cut	
10. Middle	water	hated	settle	TIPPING	
11.	CALLER	maple	sipping	happen	
12.	yellow	healer	RIPPLE	falling	
				Raw Score	

9. PHONEME SEGMENTATION

Repetitions	Discontinuation	Additional Materials
One repetition allowed	4 consecutive errors/NR	None

Record the client's response. The correct number of sounds in each word is presented in the table. Circle 1 for each correct response, 0 for an incorrect response or NR for no response.

I'm going to say some words and you will have to listen carefully because you are going to count up the individual sounds in the word that I say. Like in the word it *there are two sounds* i - t (break the word up into its component sounds). *Some of the words I'm going to say are made-up words and some will be real words.*

Proceed through the practise items providing appropriate feedback. If it appears that the client is thinking of the spelling of the word remind them that they have to think of how the word sounds not how it looks.

How many sounds can you hear in the word
baby? (4)   **fom?** (3)   **knife?** (3)   **stelp?** (5)   **sledge?** (4)

Continue with the test items but do not provide feedback.

Stimuli	Sounds	Response	Score		
1. big	3		1	0	NR
2. oskad	5		1	0	NR
3. itch	2		1	0	NR
4. frog	4		1	0	NR
5. lek	3		1	0	NR
6. on	2		1	0	NR
7. plate	4		1	0	NR
8. vist	4		1	0	NR
9. dancer	5		1	0	NR
10. og	2		1	0	NR
11. white	3		1	0	NR
12. stamp	5		1	0	NR
		Raw Score			

10. PHONEME MANIPULATION

Repetitions	Discontinuation	Additional Materials
One repetition allowed	4 consecutive errors/NR	None

Circle 1 for each correct response, 0 for an incorrect response or NR for no response.

I'm going to say some words and I want you to say the word back to me But I'm going to say a sound that you're not allowed to say in that word You have to think what the word would sound like without that sound in it I'll do some first: belt *without saying the /t/ sounds like* bel; *and* name *without the /n/ sounds like* aim. *The sound that you can't say might be from the beginning, the middle or the ending of the word*

What would hill *sound like without the /h/?* (Provide appropriate feedback.)
What about frog *without the /r/?* (Provide appropriate feedback.)
What would sent *sound like without the /n/?* (Provide appropriate feedback.)

Continue with the test items but do not provide further feedback.

Stimuli	Without	Sounds like	Score		
1. told	/t/	old	1	0	NR
2. spin	/s/	pin	1	0	NR
3. thought	/t/	thaw	1	0	NR
4. hunt	/n/	hut	1	0	NR
5. brow	/r/	bow	1	0	NR
6. hurt	/t/	her	1	0	NR
7. clean	/l/	keen	1	0	NR
8. near	/n/	ear	1	0	NR
9. nest	/s/	net	1	0	NR
10. trim	/t/	rim	1	0	NR
		Raw Score			

APPENDIX J – WORKING MEMORY TEST

Subteste Sequência de Números e Letras

(WECHSLER, 2013) como em Mascarello (2016) e Mascarello e Mota (2019)

Instrução: Agora eu vou dizer um grupo de números e letras. Quando eu terminar você repete primeiro os números, em ordem, começando pelo número mais baixo. Depois você diz as letras em ordem alfabética. Por exemplo, se eu disser A – 1, você deve dizer 1 – A. Primeiro você diz o número e depois a letra.

Critério de interrupção: Após 3 erros consecutivos dentro de um item.

Pontuação: 10 pontos por item, 30 pontos ao total.

Item de exemplo:

Tentativa 1

Para apresentar a tarefa, dizer: Agora eu vou dizer um grupo de números e letras. Quando eu terminar você repete primeiro os números, em ordem, começando pelo número mais baixo. Depois você diz as letras em ordem alfabética.
Por exemplo, se eu disser A – 1, você deve dizer 1 – A. Primeiro você diz o número e depois a letra. Vamos treinar. A – 2.

Resposta correta: [2 – A]: passar para a tentativa 2
Resposta incorreta: Dizer: não é bem isso. Eu disse A – 2, assim, você deveria dizer 2 – A.
Primeiro você diz o número, depois a letra. Vamos tentar outra vez. 2 – A
Passar para tentativa 2, seja qual for a resposta do examinando.

Tentativa 2

Dizer: vamos fazer outro. B – 3.
Resposta correta: [3 – B]: Passar para o item 1
Resposta incorreta: Dizer: Não é bem isso. Eu disse B – 3, então você deveria dizer 3 – B.
Primeiro você diz o número, depois a letra. Vamos tentar outra vez. B – 3
Passar para o item 1, seja qual for a resposta do examinando.

Itens 1-2

Dizer: Agora que nós já treinamos, vamos fazer mais alguns.
Não esqueça, diga os números primeiro, em ordem crescente.
Depois diga as letras em ordem alfabética.

Passar para o item 1 e prosseguir com os itens seguintes, até o critério de interrupção ser atingido.

Item	Tentativa	Respostas corretas	Resposta do participante
1.	**1. A – 3** *Se o examinando não disser o primeiro número na tentativa 1, deve-se corrigi-lo imediatamente, dizendo: Lembre que você precisa dizer os números primeiro, em ordem crescente. Depois diga as letras em ordem alfabética. Vamos fazer outro. Passar para a tentativa 2.	3 – A A – 3	
	2. B – 1	1 – B B – 1	
	3. 2 – C	2 – C C – 2	

Item	Tentativa	Respostas corretas	Resposta do participante
2.	**1. C – 4**	4 – C C – 4	
	2. 5 – E	5 – E E – 5	
	3. D – 3	3 – D D – 3	

Item	Tentativa	Respostas corretas	Resposta do participante
3.	**1. B – 1 – 2**	1 – 2 – B B – 1 – 2	
	2. 1 – 3 – C	1 – 3 – C	

| | | C – 1 – 3 | |
| | 3.   2 – A – 3 | 2 – 3 – A
A – 2 – 3 | |

Item	Tentativa	Respostas corretas	Resposta do participante
4.	1. D – 2 – 9	2 – 9 – D D – 2 – 9	
	2. *R – 5 – B *Se o examinando não mudar a ordem das letras na tentativa 2 (responde 5 – R – B ou R – B – 5), dizer: lembre-se de dizer as letras em ordem.	5 – B – R B – R – 5	
	3. H – 9 – K	9 – H – k H – k – 9	

Item	Tentativa	Respostas corretas	Resposta do participante
5.	1. *3 – E – 2 * Se o examinando não mudar a ordem dos números na tentativa 1 (responde 3 – 2 – E ou E – 3 – 2), dizer: Lembre-se de falar os números em ordem.	2 – 3 – E E – 2 – 3	
	2. 9 – J – 4	4 – 9 – J J – 4 – 9	
	3. B – 5 – F	5 – B – F B – F – 5	

Item	Tentativa	Respostas corretas	Resposta do participante
6.	**1.** **1 – C – 3 – J**	1 – 3 – C – J C – J – 1 – 3	
	2. **5 – A – 2 – B**	2 – 5 – A – B A – B – 2 – 5	
	3. **D – 8 – M – 1**	1 – 8 – D – M D – M – 1 – 8	

Item	Tentativa	Respostas corretas	Resposta do participante
7.	**1.** **1 – B – 3 – G – 7**	1 – 3 – 7 – B – G B – G – 1 – 3 – 7	
	2. **9 – V – 1 – T – 7**	1 – 7 – 9 – T – V T – V – 1 – 7 – 9	
	3. **P – 3 – J – 1 – M**	1 – 3 – J – M – P J – M – P – 1 – 3	

Item	Tentativa	Respostas corretas	Resposta do participante
8.	**1.** **1 – D – 4 – E – 9 – G**	1 – 4 – 9 – D – E – G D – E – G – 1 – 4 – 9	
	2. **H – 3 – B – 4 – F – 8**	3 – 4 – 8 – B – F – H B – F – H – 3 – 4 – 8	
	3. **7 – Q – 6 – M – 3 – Z**	3 – 6 – 7 – M – Q – Z M – Q – Z – 3 – 6 – 7	

Item	Tentativa	Respostas corretas	Resposta do participante
9.	**1.** S – 3 – K – 4 – Y – 1 – G	1 – 3 – 4 – G – K – S – Y G – K – S – Y – 1 – 3 – 4	
	2. 7 – S – 9 – K – 1 – T – 6	1 – 6 – 7 – 9 – K – S – T K – S – T – 1 – 6 – 7 – 9	
	3. L – 2 – J – 6 – Q – 3 – G	2 – 3 – 6 – G – J – L – Q G – J – L – Q – 2 – 3 – 6	

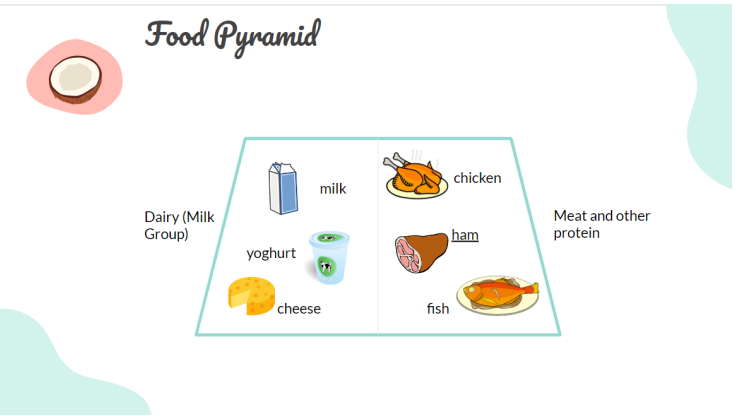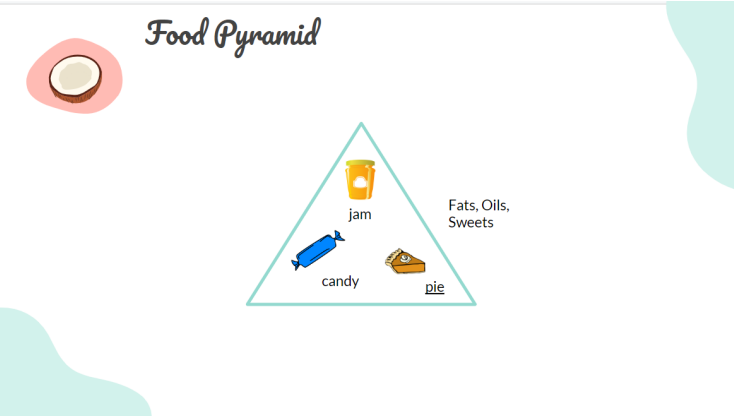| Item	Tentativa	Respostas corretas	Resposta do participante
10.	**1.** 4 – B – 8 – R – 1 – M – 7 – H	1 – 4 – 7 – 8 – B – H – M – R B – H – M – R – 1 – 4 – 7 – 8	
	2. J – 2 – U – 8 – A – 5 – C – 4	2 – 4 – 5 – 8 – A – C – J – U A – C – J – U – 2 – 4 – 5 – 8	
	3. 6 – L – 1 – Z – 5 – H – 2 – W	1 – 2 – 5 – 6 – H – L – W – Z H – L – W – Z – 1 – 2 – 5 – 6	

APPENDIX K – WORD AND NONWORD REPETITION TEST

Teste de Repetição de Palavras e Pseudopalavras
(SEABRA; CAPOVILLA, 2013)

Instrução: "Vou dizer algumas palavras. Escute cuidadosamente e, quando eu acabar, você deve repeti-las da mesma forma".

Pontuação: 1 ponto para cada sequência repetida corretamente.

Critério de interrupção: Após dois erros consecutivos.

Código do participante: _____

Repetição de Palavras

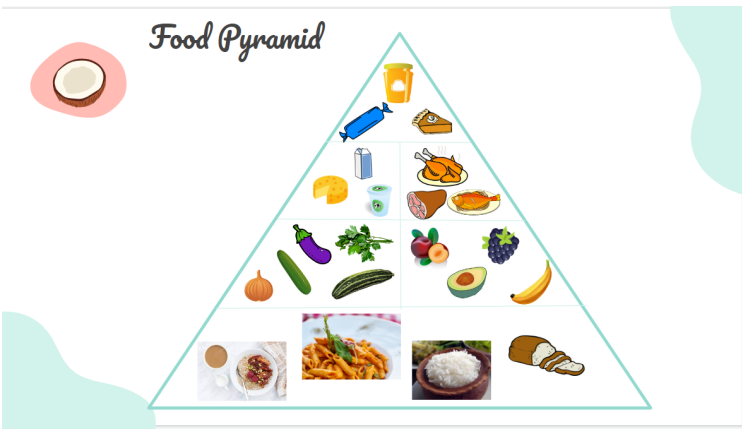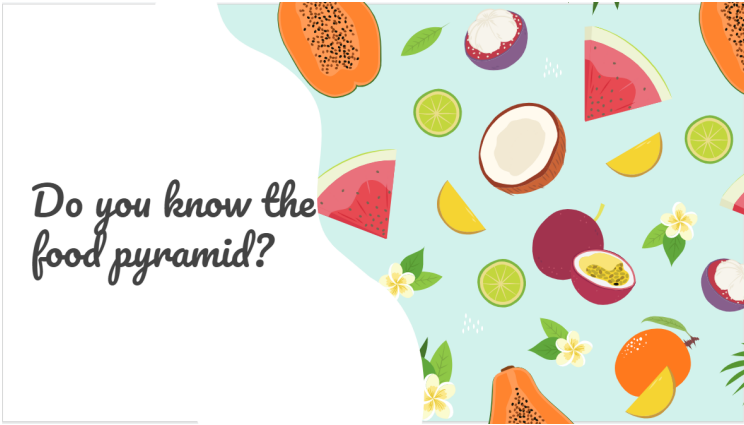| Sequência	Pontuação
1. bota cara	
2. cola moça	
3. cone pele dono	
4. rabo data modo	
5. roda tira pesa selo	
6. cola face neve jogo	
7. tema bota sapo peso toca	
8. vale rola pena gude robô	
9. faca late pelo viva solo pote	
10. nova faço pede cedo bode soma	
Total:	

Repetição de Pseudopalavras

Sequência	Pontuação
1. balí suta	
2. tadé rofu	
3. soqué jerrá deguí	
4. bilá gavi nolú	
5. domú xuté pivá derú	
6. niló pinú zimá bepú	
7. quelí jucô fetú gaxá xirê	
8. zetú ragí zorí sufê bivá	
9. dossa zifê guipó marrú quexí juré	
10. mabú copé nivá guirré faxú dejí	
Total:	

APPENDIX L – ACTIVITY 1: L2 VOCABULARY LEARNING TREATMENT

Powerpoint presentation adapted from an activity of de Souza (2015).

Do you know the food pyramid?

Food Pyramid

Food Pyramid

jam

Fats, Oils, Sweets

candy

pie

Food Pyramid

milk

chicken

Dairy (Milk Group)

Meat and other protein

yoghurt

ham

cheese

fish

Food Pyramid

Vegetables

parsley
eggplant
zucchini
onion
cucumber

Fruits

plum
blackberry
avocado
banana

Grains

oatmeal
rice
pasta
bread

Let's do an activity!
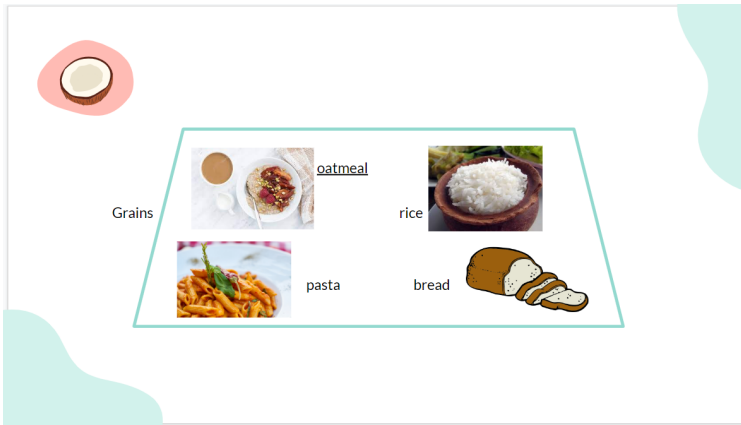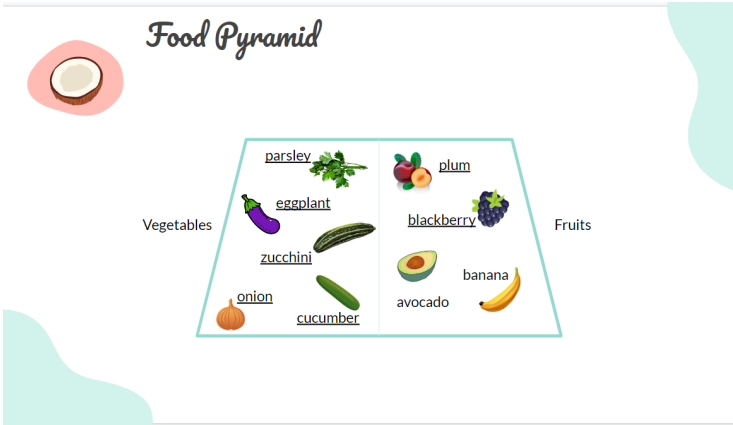
APPENDIX M - ACTIVITY 2: L2 VOCABULARY LEARNING TREATMENT

Data:
Escola:
Nome:

Exercício 1 – Tipos de Comida

Assinale a alternativa correta sobre o tipo de comida de acordo com a pirâmide de alimentos:

1. Apple, **plum**, pineapple, **blackberry**
( ) Fruit
( ) Vegetables
( ) Grains

2. Chicken, meat, **ham**
( ) Dairy (milk group)
( ) Meat and other protein
( ) Grains

3. Cookie, **pie**, butter
( ) Sweets
( ) Grains
( ) Fruit

4. Pasta, bread, rice, **oatmeal**
( ) Vegetables
( ) Fat
( ) Grains

5. **Eggplant**, **onion**, lettuce

6. Egg, cheese, milk
( ) Meat and other protein
( ) Fruit
( ) Dairy (milk group)

7. **Zucchini**, **cuccumber**, carrot, **parsley**
( ) Fruit
( ) Grains
( ) Vegetables

Source: adapted from de Souza (2015)

APPENDIX N – ACTIVITY 3: L2 VOCABULARY LEARNING TREATMENT

Escola:
Nome do(a) participante:
Data:

Relacionar as colunas abaixo de acordo com o desenho correspondente:

1. Carrot   (   )

2. Pineapple   (   )

3. Onion   (   )

4. Plum   (   )

5. Bread   (   )

6. Lettuce   (   )

7. Rice   (   )

8. Garlic   (   )

9. Butter   (   )

10. Jam   (   )

Source: de Souza (2015)

APPENDIX O – ACTIVITY 4: L2 VOCABULARY LEARNING TREATMENT

Escola:
Nome do(a) participante:
Data:

1. Leia atentamente o texto e responda as perguntas.

John: What do you want for the picnic?

Amanda: Hmm. How about some jam sandwiches of bread, butter or plum fruit jam?

John: OK. But we also have some cookies, a pineapple pie and rice.

Amanda: Rice? I don't want rice.

Amanda: Do you have any drinks?

John: No, we need some.

Amanda: All right. Let's get some lemonade.

John: And let's buy some potato salad.

Amanda: Sure. Everyone likes potato salad.

John: The store doesn't have any potato salad.

Amanda: Well, we have lots of potatoes. Let's make some!

John: Ok. Do we have any mayonnaise?

Amanda: No, we need to buy some.

John: We need some onions, too.

Amanda: Oh, I don't want any onions. I hate onions!

John: Then let's get some carrots and lettuce.

Amanda: No, I don't want any carrots or lettuce in my potato salad. But let's put some garlic in it.

**John:** Garlic in potato salad? That sounds awful!

Adapted from: Interchange – Third Edition, Jack C. Richards
Themes For Teaching – www.t4tenglish.ufsc.br

2. Agora, com base no diálogo e na pirâmide de alimentos apresentados, responda as perguntas a seguir em inglês.

a) Aonde John e Amanda pretendem ir? O que eles pretendem levar?

b) Que tipo de salada John e Amanda querem levar? E o que estava faltando para fazer a salada?

c) Que vegetal Amanda desejava colocar na salada?

d) Releia o texto e escreva aqui as comidas que você já conhece em inglês. Responda em inglês.

e) Qual é o tema central do texto?

f) Quais comidas você mais gosta daquelas presentes no texto?

Source: de Souza (2015)

APPENDIX P – ACTIVITY 5: L2 VOCABULARY LEARNING TREATMENT

Game as the final activity - Baamboozle
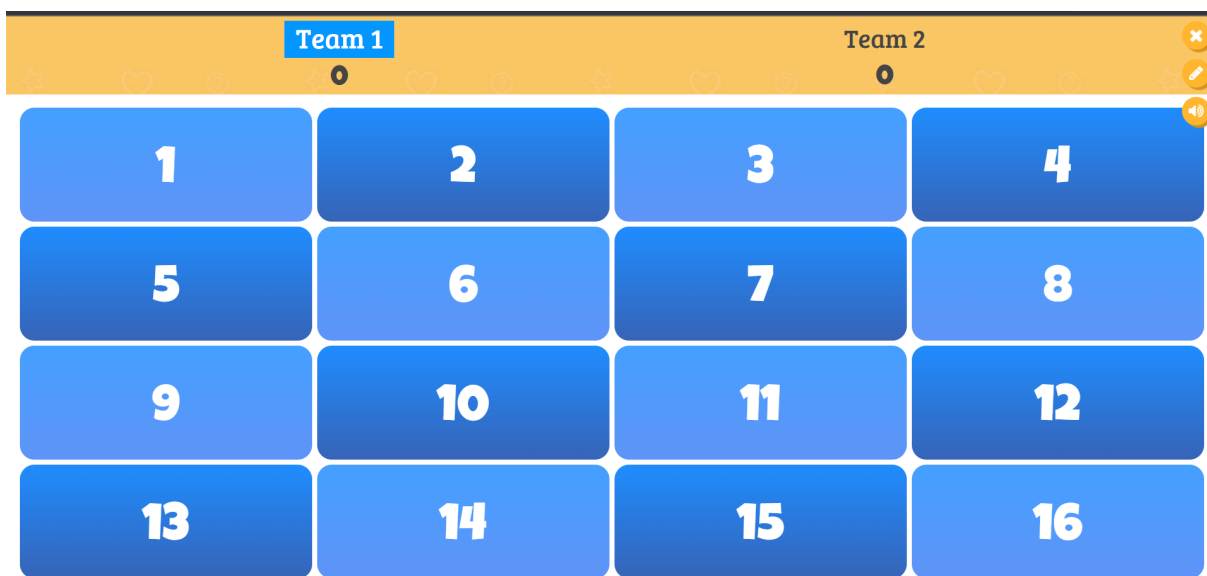
APPENDIX Q – ACTIVITY 6: L2 VOCABULARY LEARNING TREATMENT

Escola:

Nome do(a) participante:

Data:

1. Preencha os espaços em branco com o nome dos alimentos em inglês. A lista abaixo do texto contém as palavras em português para ajudá-lo.

John: What do you want for the picnic?

Amanda: Hmm. How about some chicken sandwiches _____ mayonnaise or _____, chicken and _____?

John: OK. But we also have _____ pie and _____.

Amanda: Please don't forget to pick up the _____ _____ in the fridge.

John: By the way, we need some potatoes and _____ for a potato salad.

Amanda: Oh, I don't want any _____. I hate _____!

John: Then let's get some _____.

Amanda: No, I don't want any _____ in my potato salad either. But let's put some _____ in it.

John: _____ in potato salad? That sounds awful!

Adapted from: Interchange – Third Edition, Jack C. Richards

Themes For Teaching – www.t4tenglish.ufsc.br

Lista de palavras em português:

1. Cenoura;	6. Cebola;
2. Abacaxi;	7. Geleia;
3. Alho;	8. Arroz;
4. Ameixa;	9. Manteiga;
5. Pão;	10. Alface.

Source: de Souza (2015)

APPENDIX R - TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO - TCLE (PROFESSORES)

UNIVERSIDADE FEDERAL DE SANTA CATARINA
CENTRO DE COMUNICAÇÃO E EXPRESSÃO
PROGRAMA DE PÓS-GRADUAÇÃO EM INGLÊS
LABORATÓRIO DA LINGUAGEM E PROCESSOS COGNITIVOS

TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO – TCLE
baseado na Resolução 510/16 do CNS (Conselho Nacional de Saúde)

Pesquisa: **A INFLUÊNCIA DA CONSCIÊNCIA FONOLÓGICA EM L1 E L2 NA APRENDIZAGEM DE VOCABULÁRIO NA L2**

Caro/a professor/a,

Embora esta pesquisa não tenha o objetivo de estudar elementos de sua prática pedagógica, achamos pertinente solicitar seu consentimento para desenvolvê-la com crianças que são seus alunos. Dessa forma, você está sendo solicitado(a) a dar o seu consentimento para a realização da fase de intervenção da pesquisa "A Influência da Consciência Fonológica em L1 e L2 na Aprendizagem de Vocabulário na L2", que será realizada por mim, Fernanda da Costa Alves, aluna de Mestrado do Programa de Pós-Graduação em Inglês – Estudos Linguísticos e Literários, sob orientação da professora Dra. Mailce Borges Mota na Universidade Federal de Santa Catarina – UFSC. Para que tenhamos o seu consentimento para desenvolver a pesquisa, necessitamos que você assine este Termo de Consentimento Livre e Esclarecido, também chamado de TCLE, um documento em que os convidados a participarem de pesquisas científicas ou os responsáveis por eles são informados de todas as características, objetivos, procedimentos, riscos, benefícios e garantias ao participante, entre outros aspectos relacionados à pesquisa, além de fornecer aos pesquisadores sua anuência para a realização do estudo.

O objetivo geral desta pesquisa é investigar a influência da habilidade de reconhecer

e manipular os sons da língua em português e em inglês na aprendizagem de vocabulário em língua estrangeira (inglês) em crianças do sexto ano do ensino fundamental, em ambiente de sala de aula, ou seja, durante a aprendizagem escolar. Seu consentimento se refere à autorização para que a fase de intervenção (aulas para ensino de vocabulário em inglês) aconteça durante as suas aulas regulares de inglês. Não coletaremos nenhum dado relacionado a você, apenas relacionados aos alunos, mas garantimos a manutenção do sigilo quanto à sua identidade e da sua privacidade durante toda a pesquisa. Caso você concorde em autorizar a fase de intervenção durante a sua aula, precisamos que você conceda um período de três aulas para a realização da fase de intervenção. Os alunos que quiserem participar da pesquisa realizarão as seguintes atividades:

1. **Algumas tarefas para avaliar o conhecimento de vocabulário na língua estrangeira (inglês):** São atividades aplicadas em português de conhecimento de palavras da língua inglesa.

2. **Algumas tarefas de manipulação e reconhecimento dos sons em português e inglês:** trata-se de atividades de curta duração adequadas à faixa etária em que os/as alunos/as serão requisitados/as a responder perguntas tais quais "qual palavra rima com cama?", "qual dessas palavras começa com o mesmo som: areia, bota, arena ou maçã?".

3. **Algumas tarefas de memória fonológica de curto prazo:** trata-se de duas atividades de curta duração adequadas à faixa etária em que os/as alunos/as serão requisitados/as a repetir uma sequência de palavras faladas pela pesquisadora.

4. **Uma tarefa de memória de trabalho:** trata-se de uma atividade de curta duração adequada à faixa etária em que os/as alunos/as terão que repetir em ordem uma sequência de números e letras falados pela pesquisadora.

5. **Aulas para o ensino de vocabulário da língua estrangeira:** Serão ministradas aulas visando ensinar novas palavras em inglês.

Nós, pesquisadoras, acompanharemos o/a seu/sua aluno/a durante a realização de todas as tarefas. As tarefas acontecerão em dias alternados e durarão por volta de 30-45 minutos (em um período fora do horário de aula). Você, professor/a, não precisará estar presente em nenhuma dessas tarefas. Ressaltamos, porém, que todas as pesquisas com seres humanos envolvem algum tipo de risco, mesmo que seja mínimo. Entendemos que você pode se sentir incomodado/a com a nossa presença pelo tempo que vamos tomar com a fase de intervenção. Informamos que você poderá decidir quando nos atenderá e/ou remarcar,

interromper o diálogo completamente e/ou desistir de ceder suas aulas para a pesquisa na hora que desejar. Como não há a previsão de coleta de qualquer dado relacionado a você, entendemos que a possibilidade de quebra de sigilo quanto ao seu nome é remota. Em caso de quebra de sigilo ou em qualquer outra situação em que você se sentir lesado/a, você poderá solicitar indenização na forma da legislação corrente.

Os dados gerados nesta pesquisa serão disponibilizadas em uma plataforma de acesso público chamada *Open Science Framework* (OSF). Essa prática será adotada para garantir que mais pesquisadores possam verificar a veracidade do estudo conduzido, bem como a possível replicação do presente estudo. Entretanto, garantimos que a sua identidade, dos/as seus/suas alunos/as ou até mesmo da escola não serão reveladas em nenhum momento. A planilha que será disponibilizada com os dados será toda em formato de números (médias das pontuações nos tarefas) e códigos alfanuméricos (código dos participantes). Por exemplo, A456 (código do participante) - 6 (pontuação média na tarefa realizada). Dessa forma, não será possível associar esse dado a nenhum participante ou professor/a responsável, garantindo assim que a sua identidade e dos/as seus/suas alunos/as não serão reveladas neste processo.

Os resultados desta pesquisa poderão ser divulgados em eventos ou publicações científicas, mas nenhuma informação sobre você ou seus/suas alunos/as será mencionada em momento algum. Você pode receber os resultados a qualquer momento. Para isso, é só entrar em contato com as pesquisadoras. Se você tiver alguma despesa por causa da pesquisa, você tem direito a receber ressarcimento. Se você tiver prejuízos por causa da pesquisa, você tem direito à indenização. Essa pesquisa não prevê nenhum benefício direto a você mas pode auxiliar, num âmbito mais geral, a compreender como a consciência fonológica influencia a aprendizagem de vocabulário na segunda língua. A legislação brasileira não permite que um participante ou responsável pelos participantes da pesquisa tenham qualquer compensação financeira pela sua participação ou autorização. Lembramos ainda que, a qualquer momento, você pode desistir de dar sua autorização para esta pesquisa e retirar o seu consentimento sem qualquer prejuízo ou penalização.

O presente estudo foi aprovado pelo Comitê de Ética em Pesquisas com Seres Humanos da Universidade Federal de Santa Catarina (CEPSH-UFSC). Nós, pesquisadoras, nos comprometemos a realizar a pesquisa de acordo com a Resolução do Conselho Nacional de Saúde no 510, de 07 de abril de 2016, que estabelece as normas éticas para as pesquisas em Ciências Humanas e Sociais. O CEPSH-UFSC é um órgão colegiado interdisciplinar, deliberativo, consultivo e educativo e está vinculado à Universidade Federal de Santa Catarina. O CEPSH-UFSC foi criado para defender os seus direitos, garantir que eles sejam

respeitados e que a pesquisa seja realizada de forma ética, assegurando todos os seus direitos e bem estar.

Informo que você tem a garantia de acesso, a qualquer momento, a esclarecimentos sobre o estudo. Caso haja alguma consideração ou dúvida sobre a pesquisa, entre em contato pelo e-mail: dcafernanda@gmail.com; ou pelo fone (XX)XXXXXXXXX); ou também com a professora Dra. Mailce Borges Mota, através do e-mail mailce.mota@ufsc.br, telefone (48) 3721-3792 ou no prédio do Centro de Comunicação e Expressão, Prédio B, Sala 513, CEP 88040-900, na Universidade Federal de Santa Catarina (UFSC). Você também pode entrar em contato com o Comitê de Ética em Pesquisa com Seres Humanos da UFSC, através do telefone (48) 3721-6094, e-mail cep.propesq@contato.ufsc.br ou no Prédio Reitoria II, Rua Desembargador Vitor Lima, n° 222, 7° andar, sala 701 – Trindade – CEP 88040-400 – Florianópolis/SC. Como informado acima, é garantida a liberdade da retirada de autorização a qualquer momento, sem qualquer prejuízo ou punição.

Termo de Consentimento Livre e Esclarecido

Concordo voluntariamente em autorizar a fase de intervenção durante as minhas aulas regulares de inglês para a pesquisa **A INFLUÊNCIA DA CONSCIÊNCIA FONOLÓGICA EM L1 E L2 NA APRENDIZAGEM DE VOCABULÁRIO NA L2,** conduzida por Fernanda da Costa Alves.

_____ Data _____/_____/_____

Assinatura professor/a responsável

Nome professor/a responsável:_____

_____ Data _____/_____/_____

Assinatura da pesquisadora

Nome da pesquisadora:_____