OS EFEITOS DA INSTRUÇÃO COM ALTERNÂNCIA DE CÓDIGO NO APRENDIZADO DE L2: UMA SÍNTESE DE PESQUISA

THE EFFECTS OF CODE-SWITCHED INSTRUCTION ON L2 LEARNING: A RESEARCH SYNTHESIS

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Resumo: A ideia de que o ensino de línguas deve ser feito exclusivamente na língua-alvo e de que os 'falantes nativos' são melhores professores ainda existe. Nesse contexto, há professores de língua que acreditam que a alternância de códigos é prejudicial ao aprendizado da língua-alvo, enquanto outros entendem que o uso da língua materna pode beneficiá-lo (Tian & Macaro, 2012). Buscando entender o que as pesquisas encontraram sobre os efeitos do ensino de línguas com alternância de código, realizamos uma síntese de pesquisa de estudos publicados entre 2008 e 2018. Nossas perguntas de pesquisa foram 1) quais são os efeitos da instrução com alternância de código no aprendizado de segunda língua? 2) este tipo de instrução leva a melhores resultados? e 3) quais são os contextos das pesquisas que investigaram a alternância de código e quem sãos seus participantes? Oito dos nove estudos encontrados apontam que a instrução com alternância de código obteve melhores resultados do que a instrução feita exclusivamente na língua-alvo, com efeitos positivos sendo reportados em todos eles. Assim, entendemos que a alternância de código não é necessariamente um sinal de falta de competência linguística e que ela não é prejudicial à aprendizagem de línguas.

Palavras-chave: Alternância de Código; Ensino de L2; Síntese de Pesquisa

Abstract: The belief that language instruction should be done exclusively in the target language and that 'native-speakers' are better language teachers is still around. In this context, there are language teachers who perceive code-switching as detrimental to language learning, while others believe L1 usage should not be excluded and can enhance L2 learning (Tian & Macaro, 2012). Seeking to understand what recent research has found on the effects of code-switched instruction on L2 learning, we conducted a research synthesis of experimental studies published from 2008 to 2018. Our research questions were 1) what are the effects of code-switched instruction on second language learning?; 2) does code-switched instruction lead to better learning results than target-language-only instruction?; and 3) what are the learning contexts of the research investigating code-switched instruction and who are their participants?. Eight out of the nine studies found that the code-switched instruction outperformed instruction done exclusively in the target language, with positive effects, such as reduced anxiety, being reported in all of them. Considering our results, we argue that code-switching is not necessarily a sign of diminished linguistic competence and that it is not detrimental to language learning.

Keywords: Code-switching; L2 Learning; Research Synthesis

1 INTRODUCTION

Although the belief that native-speakers of English are better suited to teach the language has been widely criticized made (Phillipson, 1992; Kabel, 2008, Houghton & Rivers, 2013), it still permeates second-language instruction around the globe. For Holliday (2006), it "plays a widespread and complex iconic role outside as well as inside the English-speaking West" (p. 385). This belief, along with 'English-only' policies rooted in the Direct Method (Sampson, 2011), has led many to the incorrect understanding that language classrooms are monolingual environments where only the target language (TL) should be allowed. Because of this, code-switching, which can be broadly defined as the alternating use of two codes in the same conversational event (Downs, 1984), has not always been well-accepted in language classrooms.

More recently, however, target-language-only policies have been questioned, while multilingual practices which see L1 as a potential resource rather than a barrier have received more attention (Lin, 2013). As Cenoz (2013) points out, under a holistic view of multilingualism, multilingual speakers "use the languages at their disposal as a resource in communication, and as their repertoire is wider, they usually have more resources available than monolingual speakers" (p. 11). Thus, there is room nowadays for language instruction that explores, with the goal of facilitating language learning, the resources multilinguals bring to classroom.

Code-switching has often been considered a strategy to fill linguistic gaps, which promotes the belief that those who do it are not fluent in either language and are in fact semilinguals (Das, 2012). However, code-switching may also take place because for social and interactional reasons. To Scotton and Ury (2009), code-switching happens when speakers wish to "redefine the interaction by moving it to different social arena" (p.5), which implies a relationship between the linguistic code used and the social meaning of the interaction. Moreover, multilinguals may continuously code-switch to avoid defining the interaction in terms of any specific social arena. Therefore, code-switching should not be limited to a strategy to compensate for the lack of proficiency.

Research has shown that language teachers use code-switching for specific reasons, such as explaining grammatical structures and providing equivalents for key words, and follow certain rules and limitations for its use (Iyitoglu, 2015; Rahimi, 2011). Language learners have also been found to code-switch with specific purposes, which include clarifying grammatical structures or vocabulary items and showing personal attitude (Fathimah, 2016; Iyitoglu, 2015).

As Tian and Macaro (2012) point out, although there is a body of research on teachers' beliefs regarding the use of code-switching and its functions, the literature on its effects on second language learning is scarcer. Considering this, it is important to integrate the studies which have already been carried out in order to present an updated state of the knowledge on the topic. Thus, through a research synthesis, this paper aims at understanding the effects of code-switched instruction on the learning of a second language[1]. The following section contains the method used to achieve this objective.

2 METHOD

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[1] Although the term second language is employed, the articles reviewed for this study dealt with both foreign and second language learning. Therefore, the term 'second language learning' is used here as a neutral and superordinate term to encompass both foreign/second language learning (Ellis, 1994).

The main purpose of this research synthesis[2] was to examine intervention studies that investigated the effects of code-switched instruction[3] on the learning of a second language. To do so, it attempted to answer the following research questions: 1) what are the effects of code-switched instruction (CSI) on second language learning?; 2) does code-switched instruction lead to better results[4] than target-language-only instruction (TLI)?; and 3) what are the learning contexts of the research investigating code-switched instruction and who are their participants? Our hypothesis is that code-switching, as long as it is not excessive, can create a learning environment where learners feel less pressure and are more willing to participate, which can leads to better results.

To find research in line with the objective of this study, an exhaustive search was conducted in the following electronic databases: Academic Research Premier, *Portal de Periódicos Capes,* and Web of Science. First, an advanced search was conducted in each database with the keywords "code-switching/code-switched" + "effect" + "instruction". 2.823 results were found with this search. A second search was conducted with the same keywords but spelling code-switching and code-switched without the hyphens so that the search included hyphenless spelling too. 682 results were found with this search.

In order to narrow down the search, some inclusion criteria were adopted. Studies were included only if they: a) were published in the past decade, that is, they were published between 2008 and 2018; b) were peer-reviewed articles; c) were written in English. Articles were excluded if they were not published in the past decade so that the data gathered for this study can be considered up-to-date. Although the articles had to be written in English, no exclusion was made based on the languages involved in the study. Moreover, articles were not excluded with regards to the type of language learning instruction.

The abstracts of the articles obtained with the search were read to ensure that they fulfilled the criteria aforementioned. Finally, nine studies were found to meet the criteria and to be in line with the goal previously presented. Because these studies investigated the effect of code-switching on the learning of either grammar, vocabulary or reading, a choice[5] was made to present their results according to the content of the instruction given to the participants.

The following section presents a synthesis of each of the studies found with the research criteria adopted, with a focus on their research methods and their participants and results.

3 RESULTS

3.1 RESEARCH ON THE EFFECT OF CODE-SWITCHED INSTRUCTION (CSI) ON THE LEARNING OF GRAMMAR

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[2] This research synthesis was initially conducted as part of the requirements for a course on Bilingualism and Multilingualism from the *Programa de Pós-Graduação em Inglês* from UFSC. The course was taught by Professor Mailce Borges Mota, whose knowledge and experience were of great importance for this article.

[3] The term code-switched instruction is used to encompass not only teachers' code-switching, but also instructional materials that involve code-switching, such as videos and code-switched reading.

[4] Our conceptualization of 'better results' was a quantitative one as we considered the results from posttests from that dealt with quantitative data, such as vocabulary and grammar knowledge tests. Therefore, we understood that code-switched instruction lead to better results than target-language only instruction when the participants from the CSI groups quantitatively outperformed those from TLI.

[5] The studies did not have to investigate grammar, vocabulary or reading to be included in this research synthesis. However, as the all the studies fit into one of these skills, we decided to group them as such.

The debate over the role of grammar instruction is one that has drawn considerable attention for the past decades. Nowadays, grammatical competence is accepted to be an integral part of communicative competence. Nonetheless, there is still debate on whether the target or the native language is better suited for grammar instruction. With this in mind, Viakinnou-Brinson et al. (2012) investigated the effects of French-only and French/English grammar instruction on students of elementary levels. The participants of the study were 40 college students of French from the United States, who enrolled in one of four separate sections of French 101. The classes met four days a week for 50 minutes and were taught French with the aid of a video-based course. Ten of these days were used for the instruction of grammar for their study, and a total of 8 target- grammar structures were taught. A within-subject design was adopted, which meant that each structure was taught in two conditions: French-only and French with the possibility of code-switching between French and English.

Viakinnou-Brinson et al. (2012) used a 12-item multiple-choice grammar test as a pretest and as a posttest to measure the participant's gains on the instructed grammar structures. Their results revealed gains for both conditions, but better gains for the students who were taught exclusively in the TL. The increase in mean scores was greater for the French-only group, which also obtained higher mean scores in the posttest. The authors suggest that a target-language-only instruction is likely to have pushed students to think in French, thus leading then to work harder. They also believe that, because the teaching of form-focused grammar was not divorced from the communicative needs of students, instruction in the TL was more likely to be successful.

Another experimental study which investigated the effect of code-switching on the learning of grammar was carried out by Kashi (2018). With the goal of comparing the effect of inter-sentential vs intra-sentential code-switching on the learning of English past tense, the English past tense was taught to 60 Iranian students who were learning English as a Foreign Language (EFL) at elementary levels. They were divided into two groups. The first one received instruction that allowed for inter-sentential code-switching only, that is, the grammatical explanation of the past was done with one sentence completely in Persian (the participants' L1) and the other sentence completely in English. For the second group, only intra-sentential code-switching was used, which meant that code-switching only took place within sentences.

Upon finishing the treatment period of ten sessions, a grammar post-test was applied to both groups. The results from this post-test show that the inter-sentential group obtained a mean score of 24.00 (SD = 4.51), while the intra-sentential group had a mean score of 19.16 (SD = 5.43). To the author, these results allow one to infer that, when it comes to the learning of past tense by EFL learners, inter-sentential code-switching is more effective than intra-sentential code-switching. Nevertheless, Kashi does not attempt to explain the reasons why this type of code-switching led to better results, which is a limitation of the study.

In a similar study, Enama (2016) investigated whether code-switching in an EFL pre-intermediate classroom hinders or facilitates the development of not only grammar, but also speaking. More specifically, the study investigated if low-achieving bilingual EFL learners from Cameroon perform better when their first language of literacy (French) is also used for the instruction of English. To do so, two grammar and two speaking lessons were taught to 22 EFL students from a technical school. The researcher considered these students to be multicompetent because, apart from French and English, all of them used one or more languages among the 247 indigenous languages spoken in Cameroon. The students were divided into two groups. The control group (CG) was made up by the 11 students with the highest scores in the last three grammar and speaking tests taken before the start of the study. This group was taught exclusively in English. The experimental group (EG), on the other hand, was made up by the

11 students with lower results and was taught with code-switching, in accordance to Atkinson's (1987) nine instances which allow for the use of L1 in EFL classrooms.

While the EG mean scores in the speaking and grammar placement tests were lower than the CG, the EG obtained higher improvement percentage in the subsequent tests. In the first test, the EG had a 16.7% improvement in grammar and 4.3% improvement in speaking, compared to the 3.9% and 0.5% from the CG. Higher improvements were also found in the second phase of the study, which showed a mean improvement of 9.85% for the EG and 4.9% for the CG. To the author, these findings indicate that grammar and speaking are better learned when code-switching is allowed in EFL classrooms. She believes that it is likely that switching from English to French "sharpened learners cognitive abilities and metalinguistic awareness and lowered their anxiety, making them more disposed to comprehend linguistic input and respond to test instructions better" (Enama, 2016, p.26).

Instead of a pretest, the students' knowledge prior to Enama's study was measured by accessing a portfolio with the three last speaking and grammar tests conducted normally during the classes. Because of this, it is hard to know whether the results of the posttests provide reliable data. Moreover, as participants were not randomly distributed among the two groups, it is unclear whether the superior gains from the experimental group are a result of code-switched instruction. It could be the case that, because the participants from the experimental group were the ones who were the low-achieving ones, they benefited more from code-switching. A better design would be to have only low-achieving participants in both groups, with one receiving code-switched instruction and the other not. This way, the effect of code-switching would be better understood.

One of the aims of the study conducted by Nabifar and Khalilzad (2017) was to investigate the effect of teachers' code-switching on the acquisition of object relative clauses. The participants of the study were 54 EFL learners from Iran who were assessed to have an intermediate proficiency level. All of the participants were female due to the fact that the study was conducted in a female-only language course. They were divided into two groups: the EG, which received explicit grammar instruction with teachers code-switching to Farsi only when students had difficulty in understanding the content, and the CG, which received explicit grammar instruction only in English. The treatment period was made up of 10 sessions of one hour and 15 minutes each.

Once the treatment period was over, a multiple-choice post-test was given with the same questions from the pre-test to both groups. With regards to the effect of teachers' code-switching on the learning of object relative clauses, Nabifar and Khalilzad found that CSI yielded significantly better results than the English-only instruction. The authors believe that code-switching can help create an anxiety-free atmosphere which leads students to participate more in the classes. They also found that, because they were taught with the aid of code-switching, their attitudes towards this type of instruction improved.

The four studies presented so far investigated the effect of language instruction with code-switching on the learning of grammar. Enama (2016), Nabifar and Khalilzad (2017) and Kashi (2018) found that instruction with code-switching had positive effects, while only Viakinnou-Brinson et al. (2012) indicated that instruction using only the TL yielded better results. Besides grammar, the search conducted found three pieces of research investigating the impact of code-switching on the learning of vocabulary in a second language, which are presented in the following section.

3.2 RESEARCH ON THE EFFECT OF CSI ON THE LEARNING OF VOCABULARY

Once viewed as a neglected aspect of language learning (Meara, 1981; Carter, 2012), it is now widely accepted that vocabulary acquisition is an essential aspect of learning a language. With this in mind, one of the goals Tian and Macaro (2012) was to provide evidence to help understand the effect of teacher code-switching on student vocabulary learning. In order to do that, 117 Chinese participants learning EFL were allocated to three groups through stratified random allocation, two of them being EGs and one a CG. These groups were randomly assigned three conditions: the non-codeswitching condition (NCS), which only received instruction in English; the code-switching condition (CS), which allowed the teacher to briefly switch to Chinese to explain target lexical items; and the control condition (CONT), which did not receive any vocabulary explanation. The instructional intervention consisted of 9 weeks of English classes with 1.5 hours each week, with the main activity being listening comprehension. The lessons were planned to have a lexical focus-on-form, meaning that incidental attention was paid to vocabulary in the context of meaning-focused instruction. Once the instructional intervention was finished, six receptive vocabulary posttests were applied to all groups.

Concerning the effect of teacher code-switching on student vocabulary learning, Tian and Macaro (2012) found that, although both the NCS and the CS groups had significant vocabulary gains with the lexical focus-on-form instruction, the students from the CS group performed better than the NCS and the CG in all six posttests. All posttests combined, the NCS and CS mean scores were M = 69.9 and M = 78.3, respectively. Nevertheless, this difference did not hold for the delayed post-tests: the NCS obtained a mean score of M = 29 and the CS M = 30.6. Based on these results, the authors argue that "there is a limited advantage for codeswitching as opposed to exclusive use of the L2" (p. 381). They believe that the effects of teacher code-switching were positive because it was limited to brief switches for content words, while keeping English as the predominant language and not violating the grammars of any of the languages.

In similar fashion to Tian and Macaro (2012), Lugo-Neris et al. (2010) also attempted to understand the effect of teacher code-switching on vocabulary learning in another language. To be specific, their study had the goal of examining whether Spanish-speaking children with limited English proficiency benefit more from CSI in English and Spanish or from an English-only instruction. The participants were children (mean age of 62 months) from a summer migrant education program for children who did not speak English at home. At this program, they were taught primarily in English but their teachers were aided by Spanish-English bilingual high school students. Their families were mostly from Mexico (91%) and from El Salvador (7%). To ensure that the children had below-average knowledge of English vocabulary they took a Peabody Picture Vocabulary Test (Goriot et al., 2018). Normal scores on this test range from 85 to 115, so only the children who scored less than 85 participated in the study. Moreover, English and Spanish tests were applied to evaluate the children's proficiency in the languages. The scores were used to divide the participants into two groups: one with children who had low scores in English and Spanish, and one who had low scores only in English.

During the intervention sessions, the books were always read in English and the target words were always named in English. In the English-only condition, in the three times the target words appeared, a different semantic feature about the word was given to the participants. The same procedure was followed for the code-switching condition, the only difference being that the instructor provided these semantic features in Spanish. Researcher-created measures of target vocabulary were applied, and these revealed a significant improvement in naming, receptive knowledge and expressive definitions for children who were instructed with code-switching. Moreover, the children's initial proficiency was found to affect their gains from the intervention, as the children who had low scores in Spanish had smaller gains in English than those with strong Spanish skills.

Although the studies hitherto mentioned have had participants from different countries and from different backgrounds, no single study has worked with participants from different age groups. Lee and Macaro (2013) believe that little research on the relation between teachers' code-switching and learners' age, which led them to investigate the effect of teachers' code-switching on vocabulary acquisition and retention by two age groups: elementary school children (n = 443) and adult university students (n = 286). On average, the former group had had 3.7 years of instruction and the latter 9.2 years, with both groups having been taught by English teachers from Korean and by teachers from English-speaking countries, referred to as *native-speaker* teachers in the study.

The researchers observed the classes from the bilingual teachers and learned that although English was the predominant language, they usually code-switched to Korean to explain difficult English vocabulary and sometimes with classroom management purposes. The native-speaker teachers, on the other hand, did not code-switch because they spoke very little or no Korean. Having found that reading comprehension tasks with vocabulary focus were common in both age group contexts, this type of activity was chosen for the instructional sections, which lasted 40 minutes for young learners and 50 minutes for adults. The pretests showed no significant differences between the English-only group (EO) and the code-switching group (CS). To measure the vocabulary gains, receptive recall and receptive recognition tests were applied as immediate posttests and delayed posttests. The results show that, for the young learners, CS instruction significantly outperformed the EO condition in the immediate posttests and delayed posttests. For the adult learners, the CS instruction resulted in better scores for the immediate recall test and for the both recognition tests, but not for the delayed recall test. Considering these findings, both age groups benefited from teacher code-switching, but young learners benefited more. The authors acknowledge that the study might have suffered from a teacher effect, as the bilingual teachers could have created a more facilitating learning environment and thus contributed to better vocabulary learning.

Ong and Zhang (2018) examined the efficacy of code-switched reading tasks in the learning of L2 vocabulary. CS reading texts are texts in the learners' L1 that contain a few unfamiliar lexical items in an L2. According to the Involvement Load Hypothesis (Laufer & Hulstijn, 2001), code-switched reading can be considered a high involvement load task and, because of that, is likely to result in better retention and recall of target vocabulary for learners. With this in mind, Ong and Zhang compared the recall of target words by EFL learners who read code-switched texts to their counterparts reading in an incidental learning design. The participants were 154 Chinese EFL learners who were taking undergraduate courses at a university in Singapore. They were randomly divided into a code-switched reading group (the experimental group) and the graded reading (control) group. The experimental group read a graded reading which had been translated into Chinese, leaving only 5 target words in English, while the control group read the original graded reading. Once the participants read the text, they had to infer five target words from the texts and write down their responses on a Vocabulary Knowledge Scale.

The results from Ong and Zhang (2018) show that the experimental group outperformed the control group in immediate lexical retention-retrieval, with a medium effect size between the groups (d = 0.69). For the delayed retrieval, a large effect size was found (d = 1.27), indicating that the experimental group retained and recalled significantly more words than the control group in this test. Their results corroborate Laufer and Hulstijn's (2001) Involvement Load Hypothesis and suggest that CS reading can be a viable approach to enhance lexical retention by EFL learners, as long as it is combined with other strategies for vocabulary learning.

Together, these studies show that CSI led to better results than instruction which did not allow for code-switching. However, both Tian and Macaro (2012) and Lee and Macaro (2013) found that the effect of CSI is not as strong in the long term, reinforcing the idea that CSI alone is not enough for vocabulary consolidation, and that multiple exposures to target vocabulary are still necessary for long if this goal is to be achieved.

3.3 RESEARCH ON THE EFFECT OF CSI ON THE LEARNING OF READING

Yeganepoor and Seifoori (2016) investigated the impacts of code-switching on reading comprehension. The participants of the study were 70 Iranian bilinguals who were learning English. They obtained homogeneous scores on a reading pre-test and were then randomly assigned to either an EG or to a CG. Both groups attended English classes for reading comprehension twice a week for roughly ten weeks, with the only difference between the groups being that the teacher of the experimental group was allowed to switch from English to Farsi or Azeri (the learners' L1 and L2, respectively) if there were any comprehension problems. In other words, code-switching was allowed for the experimental group bur forbidden for the CG.

The results from Yeganepoor and Seifoori reading post-test show that the experimental group obtained a mean score of M = 62.20, while the CG scored M = 47.31 in the same test, which was deemed statistically significant by the researchers, indicating that code-switching had a positive effect on Iranian EFL learners' reading comprehension. The authors believe that one of the reasons for the positive impact of CS may have to do with the participants' restricted "exposure to genuine English outside the classroom" (p.176), suggesting that the participants still needed the aid of their L1 and L2 to understand the target content and to decipher meanings more adequately while reading.

3.4 SUMMARY OF RESULTS

Table 1 summarizes the nine studies included in this research synthesis. The table briefly describes the participants, the content of intervention they were given and whether the CSI led to better results than target-language-only instruction (TLI).

Table 1 - Summary of 9 studies of the effects of code-switched instruction.

Study	Participants	Participants' age	Design of the experiment	What was the content of the instruction?	Did CSI lead to better results than the TLI?
Viakinnou-Brinson et al. (2012)	40 college students of French from the United States	18 - 21	Pretest-posttest	Speaking and Grammar	No
Kashi (2018)	60 EFL learners from Iran	17-32	Pretest-posttest	Grammar	Yes
Enama (2016)	22 EFL learners from Cameron	11-16	Quasi-experimental with portfolio as pretest	Grammar	Yes
Nabifar and Khalilzad (2017)	54 EFL learners from Iran	14-23	Pretest-posttest	Grammar	Yes
Tian and Macaro (2012)	117 EFL learners from China	~19	Pretest-posttest	Vocabulary	Yes, but not for delayed posttests

Lee and Macaro (2013)	443 elementary school children and 286 university students from Korea	12	Pretest-posttest	Vocabulary	Yes, mostly for children/young adults, but not for delayed posttests.
Ong and Zhang (2018)	154 EFL learners from China	17	Randomized Controlled Trial	Vocabulary	Yes
Lugo-Neris et al. (2010)	22 Spanish-speaking children from Mexico and El Salvador learning ESL.	5	Pretest-posttest	Vocabulary	Yes
Yeganepoor and Seifoori (2016)	70 bilingual Iranians studying English.	18+	Quasi-experimental pretest-post-test	Reading	Yes

Source: elaborated by the author.

As table 1 shows, four out of the nine studies investigated the effects of CSI on grammar, with another four investigating vocabulary and only one on reading. Eight of them found that CSI led to better results than TLI, with only Viakinnou-Brinson et al. (2012) suggesting an opposite effect as the participants in their study obtained better scores under the TL condition.

Most of the studies included in this synthesis investigated the learning of English in EFL contexts, that is, in countries where English was not the L1. There were two exceptions, though: Viakinnou-Brinson et al. (2012), which investigated the learning of French by US students, and Lugo-Neris et al. (2010), which examined the learning of English by Spanish-speaking children in an ESL context, as they were living in the United States.

With regards to the participants, they were, as stated, mostly EFL learners from 7 different countries. It was found that the mean number of participants was of M = 140.8, with a high standard deviation of SD = 224.7. The high SD value is mostly due to Lee and Macaro's study, which had 729 participants. Excluding this study, the mean number of participants would be of M = 67.3 with a standard deviation of SD = 46.4.

4 DISCUSSION

This research synthesis was conducted with the aim of examining studies that investigated the effects of CSI on the learning of a second language. Having reviewed the nine studies found with the search criteria adopted, it is now possible to readdress and discuss the aforementioned research questions.

With regards to the research question "what are the effects of CSI on second language learning?" all the studies reviewed mentioned positive effects on the learning of a second language. Code-switching to the learners' L1 facilitated the learning of grammar and vocabulary, especially when more marked structures and vocabulary were taught (Lee & Macaro, 2013; Nabifar & Khalilzad, 2017). CSI was also considered to lower learners' anxiety in classroom and to improve their attitudes towards this type of instruction.

Although Viakinnou-Brinson et al. (2012) found that TLI led to better scores in their grammar post-tests, their participants mentioned a positive effect of CSI: it helped them to grasp and clarify the grammar structures faster, as well as to confirm their understanding of grammar concepts. This shows that code-switching can have an important role even in contexts where the TLI is found to lead to better test scores.

Concerning the second research question "does CSI lead to better learning results than target-language-only instruction?" eight out of the nine studies reviewed found that instruction which allowed code-switching outperformed instruction in the TL only. As can be seen in table 1, CSI led to better posttests results than TLI in studies with different ages, proficiency levels and settings. In line with most of the studies reviewed, Lee and Macaro (2013) and Tim and Macaro (2012) found that instruction with code-switching had positive effects and led to better results than TLI. However, they also found that these effects were not felt in delayed posttests. This may have happened because students had few encounters with the target words during the experiments and did not consolidate the target words sufficiently to remember them in a delayed posttest. Future studies can probe into the long-term effects of CSI to evidence.

The exception was Viakinnou-Brinson et al. (2012), which found that the French-only condition yielded better results. According to the authors, instruction exclusive in French may have pressed students to apply the strategies they mentioned in their qualitative responses, which included "forcing students to figure things out, thinking in French and working harder" (Viakinnou-Brinson et al., 2012, p. 85). In other words, students already believed and were in favor of using the target language only during their classes, as it would promote the use of these strategies.

Because Viakinnou-Brinson et al. was the only study that did not have English as a TL, it is not possible to suggest that different TLs lead to different effects of CSI. Nonetheless, it is possible that their results diverged from those of other studies because of the type of CSI they employed. In their study, the instructors switched to English solely to present the rules of the targeted grammar structure. Because there were many instructors involved, the procedure for presenting grammar with code-switching was standardized and was very controlled to minimize possible experimental confounds. Other studies (Lee & Macaro, 2013; Ong & Zhang, 2018; Nabifar and Khalilzad, 2017; Tim & Macaro, 2012), on the other hand, used code-switching in a more incidental fashion, that is, code-switching was used if learners had doubts or needed clarifications on the content or if the instructors believed it was important for classroom management. It may be the case, then, that the effects of code-switching are optimized when it occurs more spontaneously, for example when language teachers feel it will help their students. Research comparing the effects of accidental versus planned code-switching could help shed light on whether there is an optimal condition for teachers to code-switch.

Even though Enama (2016) obtained better results for their code-switching group, questions can be raised regarding the methodology employed in the study. As stated, the use of a portfolio instead of pretests and the lack of random assignment for the control and experimental groups makes it unclear whether the significant gains obtained by the experimental group were the result of instruction with code-switching.

The third research question of this research synthesis was "what are the learning contexts of the research investigating teacher code-switching and who are their participants?". As the results show, the majority of the studies were conducted in countries where the TL was not spoken as an L1. A possible reason might be that code-switching is only useful if teachers and learners speak a common language, which is not always the case in ESL contexts, for example. The fact that all the studies involved English, either as an L1 or as a TL, highlights the current prominence of the language. Still, if a more comprehensive understanding of code-switching and of bilingualism is to be achieved, research investigating the learning of other languages with the aid of code-switching is necessary.

5 CONCLUSIONS

Fifteen years ago, Dewaele et al. (2003) observed that, worldwide, bilingualism was already far more common than monolingualism. This is especially true if we assume a broader definition of bilingualism that includes more unstable forms of bilingualism, one in which "languages take over from the other(s) on at least some occasions and for some instances of language use" (p. 1) and understands code-switching as a common practice of bilinguals. Thus, considering the bilingual world that we live in and the unprecedented upsurge of research on bilingualism, the number of studies investigating the effects of CSI on second language acquisition is small. Thus, further investigation is needed to better comprehend other variables that may play a role in CSI, such as the role of L1 proficiency and learners perceptions on code-switching.

Taking into account the positive effects of code-switching evidenced by the majority of the studies reviewed, it is of the utmost importance that second language teachers and learners understand that code-switching is not necessarily a sign of lack of linguistic competence and that it does not hinder learning, but can, in fact, enhance it.

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