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Developing morphological awareness across languages: translanguaging pedagogies in third language acquisition

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ABSTRACT

This article focuses on the development of morphological awareness in English as a third language. It analyses how the activation of previous linguistic knowledge can influence morphological awareness. Participants were 104 primary school students who were learning English as a third language and were already fluent in two other languages, Basque and Spanish. Participants in the experimental group took part in a pedagogical intervention aiming at the development of morphological awareness by using translanguaging pedagogies. The aim of the intervention was to enable participants to use their linguistic repertoire across languages and benefit from their multilingual resources. Results indicate that participants in the experimental group obtained higher scores in morphological awareness than the control group from the same school. In addition, participants in the experimental group perceived that the use of translanguaging strategies was useful for their learning and also enjoyable as a teaching approach.

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Morphological awareness; translanguaging; multilingual education; multilingualism; multilingual repertoire

Introduction

Morphemes are the smallest units that embody semantic and syntactic information and morphological awareness has been defined as “the ability to reflect upon and manipulate morphemes and employ word formation rules” (Kuo & Anderson, 2006, p. 161). It can be considered, along with phonological, syntactic and pragmatic awareness, as part of meta-linguistic awareness. Morphological awareness has been related to literacy skills in educational contexts. Nowadays, many schools can be considered, to a certain extent, multilingual because they have several languages in the curriculum and/or because of the diversity of students’ home languages. Multilinguals can potentially use more linguistic resources than monolinguals and can compare the morphology of the languages in their linguistic repertoire if their knowledge is used across languages. However, it is common to find school policies that follow a strict separation of languages and focus on one language at a time.

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This article focuses on the development of morphological awareness and pays special attention to the way students use their linguistic resources when learning additional languages. The structure of the article is as follows: First, we look at morphological awareness and literacy skills. Then, we relate morphological awareness to translanguaging pedagogies before ending the section by formulating the research questions. Afterwards, the methodology and characteristics of the pedagogical intervention are described and the results are reported. The final section discusses the results and teaching implications.

Morphological awareness and literacy skills

Morphological awareness includes the ability to reflect about inflection, derivation and compounding. In order to create new words, Basque, Spanish and English use derivational morphology, which includes affixes (prefixes and suffixes) and compounding. In the three languages, prefixes and suffixes are added to the base morpheme in order to build a word with a different meaning or belonging to a different category. An example of a prefix could be '*un-*' when added to a word such as *happy* to become *unhappy*. An example of a suffix can be '*-er*' when added to a word such as *farm* to become *farmer*. Compounding creates new words by combining two existing words such as when *hair* + *cut* becomes *haircut*. Interestingly, in the case of compounds, the order of the stem is closer between Basque and English than between these languages and Spanish. In Basque and in English compounds are head-final (kortxo-kentzeko or corkscrew) but in Spanish they are head-initial (sacacorchos).

When measuring morphological awareness, Carlisle (2000) makes a distinction between creating new meanings by adding affixes to a base (*farm*-*farmer*) and decomposing tasks (*farmer* = *farm* + *er*) because adding affixes requires knowledge of grammatical rules while relational knowledge is enough to complete decomposing tasks (see also McBride-Chang, Wagner, Muse, Chow, & Shu, 2005). There can also be differences between the first and the second or additional languages regarding the use of affixes and compounding. For example, compounding is widely used in Chinese but prefixes and suffixes are not (see for example Koda, Lü, & Zhang, 2014).

Morphological awareness has been related to literacy development including vocabulary development and reading comprehension (Ke & Xiao, 2015; Kim et al., 2015; Pasquarella, Chen, Lam, Luo, & Ramirez, 2011). Regarding vocabulary development, Nation (2008) explains that word part analysis is one of the most effective vocabulary strategies because it involves recognition of the parts of the word, the ability to attach a relevant meaning to the most useful of those parts and the ability to relate the meaning of word parts to the whole word. Morphological awareness is also related to reading subskills such as lexical inferencing, decoding, spelling or word identification (Ke & Xiao, 2015).

Research has shown that specific instruction on morphological structure can develop morphological awareness. In a meta-analysis of 22 studies from pre-K to Grade 8, Bowers, Kirby, and Deacon (2010) reported a positive effect on vocabulary size and reading comprehension. Moreover, this positive effect could extend to students' motivation to investigate words. When students develop morphological awareness by using strategies to analyse unfamiliar words, they are more likely to use these strategies proactively when they are reading and find words they do not know. Goodwin and Ahn (2010, 2013) also concluded

that morphological instruction can have a positive effect on morphological awareness and literacy skills. Morphological awareness can be enhanced by explicitly teaching students how to infer unknown words made up of familiar morphemes. Zhang (2016) reported an intervention aimed at developing morphological awareness in Singapore and found that the teaching of English derivation had a positive effect, both on English and Malay morphological awareness and word reading tasks. Meanwhile, Carlo et al. (2004) reported the positive effect of morphological instruction on learning academic words, awareness of polysemy, the use of contextual clues, and morphological and cross-linguistic aspects of word meaning.

In sum, research on morphological awareness not only shows that it is an important aspect of language learning but also that it is closely linked to the development of literacy skills.

Morphological awareness and translanguaging

Even when several languages are taught at school, there are usually hard boundaries between them, and the idea of avoiding the use of the L1 when learning other languages is also well established. The compartmentalization of languages takes place at the curricular and organizational level. Often different language syllabuses are developed for each language and collaboration among language teachers is not encouraged (Arocena, Cenoz, & Gorter, 2015). This traditional view has been contested in recent years and there is a growing belief that connections between languages and collaboration among language teachers should be encouraged. One of the concepts that is widely used is translanguaging. This concept has been used mainly in reference to bilingualism but in this article we report a study carried out in a multilingual context involving three languages. Baker (2011, p. 288) defined translanguaging as “the process of making meaning, shaping experiences, gaining understanding and knowledge through the use of two languages”. García (2009, p. 45) went beyond the idea of considering the co-existence of two separate languages and defines translanguaging as “multiple discursive practices in which bilinguals engage, in order to make sense of their bilingual worlds”. Bilinguals have a unique linguistic repertoire which is used strategically to communicate in diverse multilingual settings. Most studies about translanguaging have focused on analysing its functions in the classroom. For example, Creese and Blackledge (2010) identified strategies that adopt “flexible bilingualism” in complementary schools in the United Kingdom. Translanguaging was used to engage students, to establish their identities and to provide more access to the curriculum content.

Cenoz and Gorter (2017a) proposed a distinction between spontaneous translanguaging and pedagogical translanguaging. Spontaneous translanguaging refers to the fluid use of languages both inside and outside school, while pedagogical translanguaging refers to the designed instructional strategies that integrate two or more languages. Cenoz and Gorter (2017b) describe different types of pedagogical translanguaging strategies, such as using input and output in different languages, translation, comparison of language structures and derivational morphology, and the use of cognates. Pedagogical translanguaging implies that cross-lingual connections are made so as to use the whole multilingual repertoire, that is the totality of an individual’s languages, as a resource. In the same vein, there are proposals to use the students’ first language as a cognitive tool in language and content learning (see for example Levine, 2011; Swain & Lapkin, 2013; Turnbull & Dailey-O’Cain, 2009). Cummins

(2007, 2017) highlights the need to teach effective learning strategies in a coordinated way across languages (see also Lyster, 2015). Cummins and Persad (2014, p. 18) advocate for pedagogies that integrate students' background knowledge so as to incorporate new knowledge in previously acquired structures or schemata, meaning that "students should be encouraged to use their L1 to activate and extend their conceptual knowledge" (Cummins & Persad, 2014, p. 18). Escamilla et al. (2013) also adopt a holistic approach for teaching and assessing Spanish and English literacies, proposing cross-linguistic strategies to develop students' metalinguistic awareness. Jones and Lewis (2014) analysed 100 lessons in 29 different schools in Welsh-English bilingual schools. They concluded that translanguaging, understood in the original Welsh way as using different languages for input and output, was a useful tool because it facilitated the understanding of content. The potential benefits of pedagogical translanguaging have also been highlighted by Canagarajah (2011) or Leonet, Cenoz, and Gorter (2017).

Translanguaging pedagogies can be useful for instruction aiming at the development of morphological awareness because students can relate word formation in the language(s) they know better to other languages. Research studies have shown that cross-linguistic influence can facilitate its development (see for example Candry, Deconinck, & Eyckmans, 2017; Deacon, Wade-Woolley, & Kirby, 2007; Ke & Xiao, 2015; Pasquarella et al., 2011). It has also been reported that cross-linguistic interaction at the morphological level can take place in the case of typologically distinct languages (Ke & Xiao, 2015; Pasquarella et al., 2011). This is relevant for the study reported here because the languages involved – Basque, Spanish and English – are relatively distant from a typological perspective.

Some examples of an intervention to develop metalinguistic awareness by using cross-linguistic resources in French immersion programmes in Canada are reported by Lyster, Collins, and Ballinger (2009) and Lyster, Quiroga, and Ballinger (2013). The first study is a pedagogical intervention on alternating languages while reading aloud in French and English. The French language teacher read aloud in French and then the English teacher continued reading the same book in English. The project aimed to encourage collaboration among teachers so that they became aware of their students' resources as bilinguals. The results of the project indicate that their students were highly motivated and collaboration among teachers was also highly appreciated. A few years later, Lyster et al. (2013) conducted another project on the development of derivational morphology in French and English. The results indicated that students in the experimental group outperformed students in the control group in the Morphological Awareness Test in French. Students had very positive attitudes towards the intervention in word derivation.

The studies discussed above provide some evidence on the effect of instruction across languages on morphological awareness. Moreover, this type of instruction can be carried out by using translanguaging pedagogies. These pedagogies include instruction across languages to develop morphological awareness but are much wider because they can potentially affect any area of instruction provided that resources from the whole multilingual repertoire are used. The aim of this study is to examine whether instruction on derivational morphology (prefixes, suffixes and compounding) using cross-linguistic strategies can influence students' morphological awareness. The intervention reported here encompasses three languages: Basque, Spanish and English. Basque is a non-Indo-European language while Spanish and English are both Indo-European but belonging to different branches: Germanic and Romance. Even though there is typological distance between the three languages, they

share some vocabulary from Latin and Greek. Moreover, Basque and Spanish are spoken in the same territory and are in intensive language contact. Given the minority status of Basque, there is considerable influence of Spanish on Basque vocabulary. Basque and English have some similarities in compounding.

This study examined the following research questions:

RQ1. Do translanguaging pedagogies across three languages influence students' morphological awareness?

RQ2. Do translanguaging pedagogies across three languages influence students' perception of their multilingual repertoire?

In order to answer these research questions, a mixed-method approach combining quantitative and qualitative research was applied.

Method

Participants

Participants were 104 multilingual school students in the fifth and sixth years of primary education (age~10.67). The school is public and located in the Basque Autonomous Community (Spain). Basque is the main language of instruction at the school and Basque, Spanish and English are taught as school subjects. Language classes sum up to 11 hours per week: four for Basque, four for Spanish and three for English. Participants were divided into two groups: experimental and control. Participants in the experimental group took part in a pedagogical intervention while participants in the control group followed their regular programme. There was a total of five classes, of which three were experimental classes ($n=64$) and two were control classes ($n=40$). Over half of the students ($n=59$) were female and 45 were male. Participants declared Spanish (51.9%), Basque (26.9%) or both Basque and Spanish (21.2%) as their mother tongue. Basque is the main language of instruction at school for all the students but Spanish is the dominant language in society. All the students learn English as a third language for three hours per week. [Table 1](#) shows students' self-reported language proficiency scores. Participants were asked to rate their language proficiency in the three languages in a scale from 1 (none) to 10 (very well). Basque and Spanish were rated similarly although the scores for Spanish, the majority language, were slightly higher. As could be expected, English, the third language, was rated lower than the two other languages.

Pedagogical intervention

This study was part of a larger research project that aimed to develop communicative and academic competences in Basque, Spanish, and English. The specific focus of this research

Table 1. Self-reported language proficiency.

	<i>Understanding</i>	<i>Speaking</i>	<i>Reading</i>	<i>Writing</i>
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>
Basque	8.60 (1.31)	8.21 (1.37)	8.47 (1.20)	7.72 (1.49)
Spanish	8.92 (1.21)	8.92 (1.04)	8.75 (1.05)	7.98 (1.23)
English	6.52 (1.85)	6.24 (1.92)	6.68 (1.89)	6.53 (1.92)

study was the development of morphological awareness. The pedagogical intervention took place in the three language classes for 12 weeks. The main objectives of the pedagogical intervention were to improve multilingual competence in Basque, Spanish and English, and to promote students' multilingual and metalinguistic awareness. The intervention was part of daily instruction and took place during the Basque, Spanish and English language classes but only for 40-50% of the time. A pedagogical translanguaging approach towards morphological awareness as reported here differs from other approaches because students work with the three languages at the same time in each of the language classes. The idea is that their whole linguistic repertoire is activated during the intervention.

The intervention was designed so as to allow students to take advantage of all the resources in their linguistic repertoire. Participants in the experimental and control groups had the same number of hours for the three languages but there were important differences between the two groups regarding translanguaging pedagogies. While the control group had three different language classes in which the use of languages other than the target language was avoided, the approach was completely different in the case of the experimental group because the three languages were used in all the language classes. The activities in the experimental group followed the same syllabus as in the control group but crossed the boundaries between languages. The idea was that by translanguaging, students could benefit from their multilingualism by using resources from their whole linguistic repertoire.

The activities focused on oral and written language and mainly on vocabulary and discourse. Some exercises focused on derivatives and compounds in Basque, Spanish and English so that students realized that there can be similar word formation processes in the three languages even if the words are different. The idea was for students to develop metalinguistic awareness and strategies to improve the comprehension and production of vocabulary. One of the activities was to look at pictures of different shops, to discuss orally the type of shop in one of the languages and then to write the type of shop in the three languages so as to compare the similarities or differences. For example, "liburudenda, librería, bookstore" include two compounds in the same order (Basque "liburudenda" and English "bookstore") and a derivative (Spanish: "librería"). Another example of an activity was to read a text in English and to identify cognates in two or three languages. At the discourse level, some activities consisted on analyzing the structure of a text, for example, a description in one language and to write additional descriptions following the same structure in the other two languages. Some activities also included the use of two or more languages in the input and the output following the original translanguaging activities from Wales (Lewis, Jones, & Baker, 2012a). In this intervention translanguaging is designed and planned but it goes further than the use of different languages in the input and output by adding other activities. It also goes further because it involves three languages.

The pedagogical intervention was carried out by three teachers who took a short course on translanguaging pedagogies before the intervention. They were provided with teacher guides and were supported by the research team during the intervention. Before the intervention took place, general information about the school and specific information about the content and teaching methodology used in the three language arts classes (Basque, Spanish and English) was gathered so as to adapt the activities to the school. Several interviews were also carried out with teachers and school managers and some classes were observed.

Instruments

The present study employed four instruments to obtain information so as to answer the research questions: (a) Background questionnaire (b) Morphological Awareness Test (c) Translanguaging questionnaire and (d) Focus group discussion. Verbal and written instructions for each task were provided in Basque as it is the main language of instruction at this school.

Background questionnaire

All students in the experimental and control groups completed the background questionnaire in order to obtain personal and academic information before the pedagogical intervention took place.

Morphological awareness test

The Morphological Awareness Test used in this study was designed taking into account the age of the students, the English language curriculum in the school and the characteristics of the pedagogical intervention. It included two tasks to be carried out in English, which was more challenging for the students than Basque or Spanish because it was their third language. The test, which was designed ad hoc for this study after consulting other tests designed for other contexts such as the Morphological Awareness Test by Quiroga (2013, validated by Lyster et al., 2013). The Tham 2 test of metalinguistic abilities (Pinto, Candilera, & Iliceto, 2003, validated in Spanish by Núñez Delgado & Pinto, 2015) was also examined because it is aimed at the same age group. However, it was not used because its focus is not specifically on morphological awareness but on other aspects of metalinguistic awareness. The reliability score for the test used in this study was Cronbach's alpha = .83.

The test had two parts: (1) a morpheme identification task which assessed the ability to identify and decompose words into morphemes and (2) a word formation task to assess the ability of participants to create new meanings by adding prefixes and suffixes or combining two free morphemes. This second task requires more explicit knowledge. Most of the items in the Morphological Awareness Test were on derivatives because they are more common than compounds in the materials in the three languages for both the experimental and control groups.

In the morpheme identification task, students were given a set of seven multi-morphemic words in English and were asked to divide them into morphemes. One of the items (*unhappiness*) had two affixes and the other six had only one (*teacher*, *swimmer*, *surprising*, *enjoyable*, *mindful*, *dangerous*). Students were given the following example:

Sportsman can be divided like this: *sports/man*

The items were scored as follows:

- 3 points: both the prefix and the suffix correctly identified in the word *unhappiness*
- 2 points: the suffix correctly identified in the other six words
- 1 point: only one of the two affixes identified in the word *unhappiness*
- 0 points: words divided in an incorrect way (*tea/cher* instead of *teach/er*)

The maximum number of points for this task was 15.

The word formation task included nine items. In six of the items students were asked to provide a derivative word involving the stem plus a suffix (*friendly, runner, farmer, peaceful, darkness, enjoyable*) and in two of the items a stem plus a prefix (*disagree, unhappy*) were needed. There was another compound word comprised of two stems (*fireman*). Students were given the following example:

My sister is always ready to **help**. She is very(**helpful**).

The items were scored as follows:

2 points: stem and affix linked without any spelling mistake (run-runner)

0 points: incorrect words divided in an incorrect way (run-runned)

The maximum score for this task was 18.

All students in the experimental and control groups took the Morphological Awareness Test before and after the pedagogical intervention. They had an average time of 15 minutes to complete each task, adding up to 30 minutes for the whole test.

Translanguaging questionnaire

After the pedagogical intervention, students in the experimental group completed a questionnaire of nine items concerning their perceptions about translanguaging and the pedagogical intervention. In fact, at school the whole pedagogical intervention was referred to as translanguaging so students knew that the questionnaire was about the pedagogical intervention. Items were rated on a 10-point Likert scale, ranging from 1 (strongly disagree) to 10 (strongly agree). The aim of this questionnaire was to find out about students' perceptions of the pedagogical intervention. The nine items were the following:

1. *Basque, Spanish and English are closer than I thought*
2. *It is confusing to learn Basque, Spanish and English at the same time*
3. *You learn more when you use Basque, Spanish and English in the same class*
4. *It is helpful to analyse Basque, Spanish and English jointly to promote understanding*
5. *It is easy to distinguish parts of a word*
6. *I prefer to learn languages separately*
7. *I prefer to learn the three languages at once*
8. *I like to do translanguaging*
9. *It is fun to compare languages*

Participants had ten minutes to fill in the nine items of the questionnaire. The data of the questionnaires and tests were analysed with the SPSS programme, version 22.

Focus group discussions

Focus group discussions were conducted by four trained researchers with students in the experimental group. Students were assigned to 12 groups and, taking into account the age of the participants, the researcher asked students in each group to write individual responses on an answer sheet before proceeding with the discussion. Students were allowed to look at the written reflection sheet during the discussion but they were encouraged to interact

spontaneously. Focus group discussions were conducted in Basque, the school language of instruction, though participants were allowed to use any of the languages in their responses. Several questions were asked during the focus group session but the ones relevant for this study are the following:

1. You've been working with more than one language at the same time; have you learnt more or less that way?
2. When you look at two or more languages at the same time, do you see more or less similarities between them?

Each focus group discussion only took an average of 10 minutes due to the age of the students. Focus groups were audio-recorded and data from both written and oral reflection were transcribed and analysed with the programme Atlas.ti, version 8.

Results

In order to answer our research questions, quantitative and qualitative analyses were carried out. First, the results obtained in the two tasks of the Morphological Awareness Test will be presented, followed by the translanguaging questionnaires and focus group discussions.

The development of morphological awareness

The first research question aims to analyse whether the pedagogical intervention in three languages influences students' morphological awareness. Analyses of covariance (ANCOVA) were carried out so as to compare the experimental and control groups' overall performance in the two tasks of the Morphological Awareness Test: the morpheme identification task and the word formation task, as well as the differences between the pre-test and the post-test. ANCOVA allows us to explore differences between the two groups while statistically controlling the effects of initial between-group differences. Additionally, paired *t*-test analyses were conducted with the experimental and control group to see the development in each of the group separately.

Morpheme identification task

Table 2 shows the means, standard deviations and adjusted means in the morpheme identification task in the pre-test and post-test. The independent variable was the type of group (experimental group, control group), with the dependent variable being the scores on the morpheme identification task administered after the intervention (post-test). The covariant was the morpheme identification task in the pre-test.

The one-way ANCOVA in the morpheme identification task, where participants were asked to divide words into morphemes, shows no significant differences between the two

Table 2. Overall group analysis: Morpheme identification task.

	Pre-test	Post-test	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>Adj M (SE)</i>
Experimental	5.65 (3.19)	6.71 (3.13)	6.54 (.40)
Control	4.82 (3.38)	5.97 (4.41)	6.25 (.51)

groups on the post-test scores, $F(1, 101) = .19, p = .66$, after controlling for the results in the pre-test. **Figure 1** shows the means obtained before and after the intervention in the morpheme identification task.

For a more detailed understanding of the way in which students divided each word, a paired t -test was run for each of the groups comparing the pre-test and the post-test. Results are shown in **Tables 3** and **4**.

In the case of the experimental group, participants obtained higher scores in the post-test in five of the seven items, however the increase was only significant for the item “surprising” $t(58) = -2.43, p < .01, d = .32$ and for the item “enjoyable” $t(63) = -4.15, p < .00, d = .53$. The increase was marginally significant for the item “unhappiness” $t(58) = -1.91, p < .06, d = .24$.

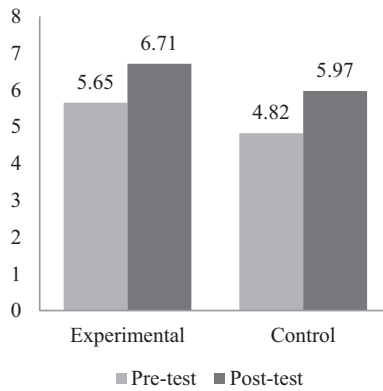


Figure 1. Pre- and post-test means by group in the morpheme identification task.

Table 3. Experimental group. Differences between pre-test and post-test in the morpheme identification task.

	Pre-test	Post-test	<i>T</i>	<i>S</i>
	<i>M (SD)</i>	<i>M (SD)</i>		
Unhappiness	.68 (.88)	.92 (.91)	-1.91	.06
Teacher	.64 (.94)	.58 (.91)	.42	.67
Swimmer	.61 (.92)	.44 (.83)	1.21	.22
Surprising	.71 (.96)	1.10 (.99)	-2.43	.01
Enjoyable	1.30 (.96)	1.80 (.60)	-4.08	.00
Mindful	1.62 (.79)	1.71 (.70)	-.83	.41
Dangerous	1.00 (1.00)	1.20 (.98)	-1.28	.20

Table 4. Control group. Differences between pre-test and post-test in the morpheme identification task.

	Pre-test	Post-test	<i>T</i>	<i>S</i>
	<i>M (SD)</i>	<i>M (SD)</i>		
Unhappiness	.61 (.78)	.70 (.63)	-.77	.44
Teacher	.53 (.89)	.71 (.97)	-1.13	.26
Swimmer	.53 (.89)	.65 (.95)	-.70	.48
Surprising	.70 (.96)	1.35 (3.30)	-1.11	.27
Enjoyable	.65 (.48)	.70 (.46)	-.57	.57
Mindful	1.41 (.92)	1.57 (.85)	-1.00	.32
Dangerous	.69 (.96)	.91 (1.01)	-1.27	.21

Participants in the control group scored higher in the post-test than in the pre-test in all of the items but the differences between the pre-test and the post-test were not significant for any of the seven items.

Word formation task

Table 5 shows the means, standard deviations and adjusted means in the word formation task in the pre-test and post-test. The independent variable was the type of group (experimental group, control group), with the dependent variable being the scores of the word formation task in the post-test. The covariant was the word formation task in the pre-test.

The one-way ANCOVA on the word formation task yielded a significant group effect, $F(1, 101) = 4.37, p = .03$, meaning that there were significant differences among the experimental and control groups at the time of the post-test. However, the effect size for this difference was not very high ($R^2 = 0.42$). The adjusted mean comparison shown in Table 5 revealed that the experimental group ($Adj M = 9.79$) outperformed the control group ($Adj M = 8.27$). Unadjusted means obtained before and after the intervention by both groups are shown in Figure 2.

In order to obtain a more detailed picture of the differences between both groups when creating new words from a given stem, t -tests were carried out separately for the experimental and control groups (Tables 6 and 7).

As can be seen in Table 6, the experimental group participants obtained a higher score in five of the seven items in the word formation task in the post-test, after being exposed to the pedagogical intervention. There was a statistically significant increase for the items "friendly" $t(60) = -3.93, p < .00, d = .50$ "unhappy" $t(57) = -3.30, p < .02, d = .43$ and "fireman" $t(43) = -3.62, p < .00, d = .55$. The control group obtained higher scores in five of the nine items in the post-test but the differences were not significant for any of the items. Thus, only the experimental group obtained statistically significant scores in some items.

Table 5. Overall group analysis: Word formation task.

	Pre-test	Post-test	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>Adj M (SE)</i>
Experimental	4.53 (2.83)	9.70 (3.71)	9.79 (.45)
Control	4.95 (3.86)	8.42 (4.54)	8.27 (.57)

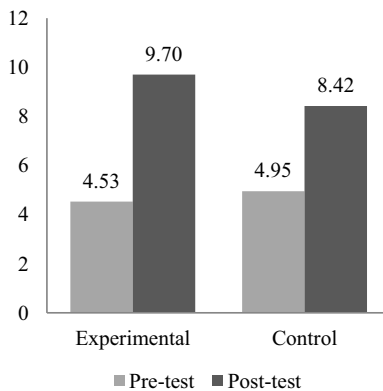


Figure 2. Pre- and post-test means by group in the word formation task.

If we take together the results of the word identification task and the word formation task, we can observe that the students in the experimental group obtained higher scores than those in the control group and that these differences were significant in some cases.

Students' perception of their multilingual repertoire

The second research question focused on the experimental group and aimed at analysing students' perception of their multilingual repertoire after the intervention. The data were obtained from the translanguaging questionnaire and the focus group discussions. **Table 8** shows the means and standard deviation of the nine items in the translanguaging questionnaire.

Students indicated their extent of agreement on a 10-point Likert scale from 1 (strongly disagree) to 10 (strongly agree). The score for item 1 is relatively high (6.98) taking into account the linguistic distance between the three languages. In spite of these differences, students seem to find some similarities between the languages. According to the results, students also perceive that using resources from their whole linguistic repertoire is not confusing (item 2) but helpful to understand and learn (items 3, 4). Item 5 with a score of 8.58 refers to the morphological task of distinguishing parts of a word and it is relatively high. The data also indicate that students also enjoy using resources from other languages in pedagogical translanguaging (items 6, 7, 8, 9).

Students' perception of their multilingual repertoire could also be seen in their participation in the focus group discussions. In excerpt 1 we can see that students provided valuable

Table 6. Experimental group. Differences between pre-test and post-test in the word formation task.

	<i>Pre-test</i>	<i>Post-test</i>	<i>T</i>	<i>S</i>
	<i>M (SD)</i>	<i>M (SD)</i>		
Friendly	.79 (.98)	1.33 (.92)	-3.93	.00
Runner	1.33(.90)	1.22 (.93)	.880	.382
Farmer	1.04 (1.00)	1.15 (.97)	-.84	.401
Disagree	.06 (.33)	.06 (.23)	.00	1.00
Peaceful	.20 (.60)	.16 (.54)	.37	.70
Enjoyable	1.11 (1.00)	.93 (1.00)	1.04	.30
Unhappy	.21(.61)	.59 (.91)	-3.30	.02
Darkness	.02 (.14)	.07 (.33)	-1.00	.32
Fireman	.34 (.74)	.89 (.97)	-3.62	.00

Table 7. Control group. Differences between pre-test and post-test in the word formation task.

	<i>Pre-test</i>	<i>Post-test</i>	<i>T</i>	<i>S</i>
	<i>M (SD)</i>	<i>M (SD)</i>		
Friendly	1.06 (.99)	1.24 (.96)	-1.18	.24
Runner	1.50 (.86)	1.27 (.90)	1.22	.22
Farmer	1.22 (.93)	1.19 (.92)	.22	.82
Disagree	.15 (.55)	.08 (.27)	.43	.67
Peaceful	.48 (.87)	.57 (.92)	-.43	.66
Enjoyable	1.20 (1.00)	1.20 (1.00)	.00	1.00
Unhappy	.28 (.70)	.34 (.76)	-.57	.57
Darkness	.25 (.68)	.38 (.80)	-1.00	.33
Fireman	1.19 (.98)	1.38 (.95)	-1.00	.33

Table 8. Experimental group. Means and SDs for students' perceptions on translanguaging.

Min = 1- max = 10	M (SD)
1. Basque, Spanish and English are closer than I thought	6.98 (2.08)
2. It is confusing to learn Basque, Spanish and English at the same time	3.42 (2.75)
3. You learn more when you use Basque, Spanish and English in the same class	8.57 (1.93)
4. It is helpful to analyse Basque, Spanish and English jointly to promote understanding	9.01 (1.43)
5. It is easy to distinguish parts of a word	8.58 (1.58)
6. I prefer to learn languages separately	3.98 (2.98)
7. I prefer to learn the three languages at once	7.48 (2.78)
8. I like to do translanguaging	7.87 (2.22)
9. It is fun to compare languages	7.98 (1.71)

insights about the way they perceive their learning process when they are aware of their own resources.

Excerpt 1

Researcher: Bi edo hiru hizkuntzatan lan egin duzu. Ariketa mota honekin gehiago ala gutxiago ikasten da? [*You've been working with two or three languages; do you learn more or less with this type of exercise?*]

(...)

023: Errazagoa izan da hiru hizkuntzekin egitea lan. [*It has been easier to work with the three languages together.*]

Researcher: Ah bai? [*Really?*]

016: Kontzeptuak hobeto sartzen dira buruan. [*The concepts are better assimilated this way.*]

Researcher: Eta zergatik sartzen dira hobe kontzeptuak buruan? [*And why are concepts better assimilated this way?*]

009: Ze badituzu beste hizkuntzetan hobeto eta orduan ... [*Because you know them better in the other languages, so ...*]

007: Errazago ikasten da. [*It is easier to learn.*]

016: Eta delako gai berdina. Eta gai berdina ematen duzunean badakizu: Ah! Hau beste hizkuntzen egiten da horrela ba hizkuntza honetan egingo dut berdina, baina ingelesez. [*And because it's the same topic. And when you do the same topic you realise, ah! If it is done this way in the other languages, I will do the same in English.*]

009: Daukagu maila desberdina, adibidez: euskaran altuena ... Orduan egiten genuen ba ingelesez baxuagoa eta orain juntatu ditugunean hiruak egiten da askosaz ere errazagoa. [*We have different levels, for example, the highest in Basque... we used to do simpler things in English before, but now that we work with the three languages together, we do it much easier.*]

007: Ya! Eske lehen egiten genuen bakarrik hizkuntza bat. [*Yeah! Before, we used to work with one language at a time*]

016: Lehen, igual L1 aurrizkiak euskaraz, eta gero aurrizkiak eta atzizkiak erdaraz. Denbora desberdinetan egiten genuen hiru hizkuntzatan, eta ahazten ziren kontzeptuak. Eta orain dena

egiten dugu elkarrekin eta uste dut nik hobe egiten dugula lana. [*Before, we used to do, for example, prefixes in the Basque language class, and then prefixes and suffixes in Spanish. We did things at different times in the three languages and that way, concepts are forgotten. But now, we do everything together, I think we work better this way*]

The four students who provide explanations in this example seem to agree about the idea that they learn more when multilingual resources are used. They say that concepts are assimilated better because they are used in the different languages. They also add that when the languages are separate they tend to forget what they learn more easily because it is not reinforced in the other languages.

When asked about the way they perceive similarities and differences between the languages, another group of students showed that they had become aware of the similarities, as can be seen in excerpt 2.

Excerpt 2

Researcher: Hizkuntzak batera ikusten ditugunean, hizkuntzen arteko antzekotasun gehiago ikusten duzu ala ez? [*When you look at two or more languages at the same time, do you see more or fewer similarities between them?*]

030: Ez dakit. [*I don't know.*]

027: Gehiago. Antza daukalako hitz batzuk. [*More because some words are similar.*]

045: Gehiago, ikusten duzunean batera gehiago ikusten dira antzekotasunak. [*More because when you see it, you see the similarities better.*]

034: Ba, gehiago, hiruak batera badaude ikusten da oso ondo. [*More, it can be seen very well with the three at the same time.*]

048: Ba nik antzekotasun gehiago ikusi dut eta niretzako da errazago, ze ez badakizu hitz bat, dagoenez hiru hizkuntzetan, ez badakizu ingelesez, baina bai erdaraz, ikusten duzu erdaraz eta ya badakizu zer esan nahi duen. [*I see more similarities and it is easier for me, if you don't know a word, as it is in three languages, if you don't know it in English and you do in Spanish, you look at the Spanish and then you know what it means.*]

032: Gehiago, baina ez dakit nola azaldu zergatik. [*More but I don't know how to explain why.*]

Furthermore, as can be seen in excerpt 3, the students reported that they became aware of the fact that the procedure of word formation works in a similar way in Basque and in English even if the languages have a different origin:

Excerpt 3

Researcher: Hizkuntzak batera ikusten ditugunean, hizkuntzen arteko antzekotasun gehiago ikusten duzu? [*When you look at two or more languages at the same time, do you see similarities between them?*]

Various St: Bai. [*yes*]

Researcher: Zeintzuk ikusi dituzue? [*Which similarities, for example?*]

059: Adibidez, 'playground'. 'Play' da jolastu eta 'ground' da 'toki' bat eta gero euskaraz da 'jolastoki'. [*For example, playground. Play is jolastu (to play) and ground is 'tokia' (place), and then in Basque is 'jolastoki' (playground).*]

Researcher: Orduan da, hitz elkartu bat eta berdina da ingelesez eta euskaraz. Eta zer gehiago, zer antzekotasun gehiago topatu dituzue? [*Then it is a compound and it is the same in English and Basque. And what else, did you find other similarities?*]

071: Hitzen artean, antzekotasunak daudela. [*That there are similarities between words.*]

Here we see how student 59 is able to relate the structure of compound nouns in English to those in Basque.

In sum, the results of the translanguaging questionnaire and the examples from the focus group discussions indicate that students are more aware of the relationships between the languages in their multilingual repertoire. The results indicate that translanguaging pedagogies across the three languages influence students' perception of their multilingual repertoire. They also found the pedagogical intervention both useful and enjoyable.

Discussion

The first research question addresses the influence of the pedagogical intervention on students' morphological awareness. The results of the Morpheme Awareness Test show some differences between the experimental and the control groups. The differences did not reach significance in the case of the total score in the morpheme identification task but the experimental group scored significantly higher in three of the seven items. The differences between the two groups were significant in the total score of the word formation task. The results also indicate that in this test the experimental group obtained significantly higher scores in the post-test than in the pre-test in three items while there were no differences between the pre-test and post-test for any of the items in the case of the control group. These results indicate that the pedagogical intervention based on translanguaging had a positive effect on the development of morphological awareness. These results are consistent with other studies showing the effect of instruction on the development of morphological awareness (Bowers & Kirby, 2010; Deacon et al., 2007; Zhang, 2016). They are also consistent with the results obtained by Lyster et al. (2013) who reported higher scores in the test of morphological awareness in French for students who had taken part in a pedagogical intervention using cross-linguistic resources as is the case in this study.

Our results indicate that there are more differences in the case of the word formation task than in the morpheme identification task. Following Carlisle (2000), these differences can be explained by the different characteristics of the tasks. The identification task only requires relational knowledge and as participants in this study are students in the fifth and sixth years of primary school, it is likely that they have already developed some skills of decomposing words due to their exposure to orthographic representation (see also Carlisle & Stone, 2005). Therefore, it is likely that the effect of the pedagogical intervention was more moderate for this reason. Producing derived forms requires more complex abilities than morpheme identification because it requires knowledge of grammatical rules and the meanings of suffixes (Carlisle, 2000; Koda et al., 2014). The fact that students who received instruction on morphological awareness obtained significantly higher scores in the morpheme derivation task could be explained by the instruction effect indicating that when the task is more complex, instruction has more effect. As Bowers and Kirby (2010) explain, explicit instruction facilitates the recognition of the base in derived words that could be ignored without the scaffolding of word structure knowledge. This could explain why there

are also some differences in items in the morpheme identification task. Students who received explicit instruction were able to accurately identify morphemes within the most opaque words in the test (*unhappiness, surprising*). Spelling changes between the items *unhappiness* and *surprising* occur according to consistent suffixing patterns, as can be seen in the *y/i* change in *unhappiness* and the replacement of the single silent *e* in *surprising*, making identification more difficult (Bowers et al., 2010; Lubliner & Hiebert, 2011). Knowledge of the meaning of affixes may also affect students' performance in the morpheme derivation task. The significant differences found in some items could be due to the higher exposure to affixes during the intervention.

The second research question addresses students' perception of their whole linguistic repertoire. In our case, during the intervention, translanguaging pedagogies are used to relate the three languages in the school curriculum. The results of the translanguaging questionnaire and the focus group discussions show the enthusiasm exhibited by experimental group students about the intervention, and the opportunities given for cross-lingual comparisons. The use of cross-linguistic resources has also been highly valued in other studies (Lyster et al., 2009, 2013; White & Horst, 2012).

In our study, students showed a clear preference for working with the three languages together instead of learning them separately. They reported that they learn more when they work with the three languages simultaneously because translanguaging provides opportunities for comparison across languages. The results indicate that working with the three languages can be positive for the acquisition of the L3 because students can use the resources they have already acquired in the other two languages. These findings are consistent with recent trends to soften boundaries between languages (e.g., Cenoz & Gorter, 2015; Cummins & Persad, 2014; García, 2009; Lewis, Jones, & Baker 2012b; Lewis et al., 2012a; Swain & Lapkin, 2013; Turnbull & Dailey-O'Cain, 2009). Swain and Lapkin (2013) and Jones and Lewis (2014) explain that the use of L1 supports language and content comprehension and this idea is consistent with the students' explanations in some of the focus group discussions.

Another interesting point is students' perception of the distance between Basque, Spanish and English. The perception of language distance is considered a decisive factor in cross-linguistic influence, since the subjective perception of language similarity influences the identification of objective similarities between languages (Cenoz, Hufeisen, & Jessner, 2001). Translanguaging pedagogies highlight specific similarities between the three languages and the results obtained here made clear that students in the experimental group perceived these pedagogies as useful. The results indicate that cross-linguistic identifications may have decreased the perception of language distance. Students become more aware of their own resources as multilinguals when the pedagogical intervention highlights similarities in derivational morphology.

In sum, the quantitative and qualitative data converge showing that translanguaging pedagogies can potentially develop morphological awareness and the perception multilingual students have of their multilingual repertoire. This study has some limitations because it has been carried out in a specific context and with a limited number of students. The students' age can also be considered a limitation because it has not allowed for long focus group discussions.

In spite of these limitations, the findings obtained in this study support those obtained in other research studies because they show that instruction in morphological awareness can be positive for L3 acquisition. In fact, this study contributes to research on

morphological awareness instruction by revealing the possibility of using more than one language at the same time as a resource in pedagogical translanguaging. Our findings imply that more opportunities for cross-linguistic connections should be made in language teaching. Students should be encouraged to identify similarities between languages so as to benefit from their linguistic repertoire by becoming increasingly aware of the relationships between new words in the target language and the words they already know. Softening boundaries between languages and acknowledging the resources multilingual students bring to the classroom by using translanguaging pedagogies can have an important potential in all areas of language teaching including morphological awareness.

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References

- Arocena, E., Cenoz, J., & Gorter, D. (2015). Teachers' beliefs in multilingual education in the Basque country and in Friesland. *Journal of Immersion and Content-Based Language Education*, 3(2), 169–193. doi:10.1075/jicb.3.2.01aro
- Baker, C. (2011). *Foundations of bilingual education and bilingualism* (vol. 79). Bristol: Multilingual matters.
- Bowers, P. N., & Kirby, J. R. (2010). Effects of morphological instruction on vocabulary acquisition. *Reading and Writing*, 23(5), 515–537. doi:10.1007/s11145-009-9172-z
- Bowers, P. N., Kirby, J. R., & Deacon, S. H. (2010). The effects of morphological instruction on literacy skills a systematic review of the literature. *Review of Educational Research*, 80(2), 144–179. doi:10.3102/0034654309359353
- Canagarajah, S. (2011). Codemeshing in academic writing: Identifying teachable strategies of translanguaging. *The Modern Language Journal*, 95(3), 401–417. doi:10.1111/j.1540-4781.2011.01207.x
- Candry, S., Deconinck, J., & Eyckmans, J. (2017). Metalinguistic awareness in L2 vocabulary acquisition: Which factors influence learners' motivations of form-meaning connections? *Language Awareness*, 26(3), 226–243. doi:10.1080/09658416.2017.1400040
- Carlisle, J. F. (2000). Awareness of the structure and meaning of morphologically complex words: Impact on reading. *Reading and Writing*, 12(3/4), 169–190.
- Carlisle, J. F., & Stone, C. (2005). Exploring the role of morphemes in word reading. *Reading Research Quarterly*, 40(4), 428–449. doi:10.1598/RRQ.40.4.3
- Carlo, M. S., August, D., McLaughlin, B., Snow, C. E., Dressler, C., Lippman, D. N., ... White, C. E. (2004). Closing the gap: Addressing the vocabulary needs of English-language learners in bilingual and mainstream classrooms. *Reading Research Quarterly*, 39(2), 188–215. doi:10.1598/RRQ.39.2.3

- Cenoz, J., Hufeisen, B., & Jessner, U. (Eds.). (2001). *Crosslinguistic influence in third language acquisition: Psycholinguistic perspectives*. Clevedon, UK: Multilingual Matters.
- Cenoz, J., & Gorter, D. (2015). Towards a holistic approach in the study of multilingual education. In J. Cenoz & D. Gorter (Eds.), *Multilingual education: Between language learning and translanguaging* (pp. 1–15). Cambridge: Cambridge University Press.
- Cenoz, J., & Gorter, D. (2017a). Minority languages and sustainable translanguaging: Threat or opportunity? *Journal of Multilingual and Multicultural Development*, 38(10), 901–912. doi:10.1080/01434632.2017.1284855
- Cenoz, J., & Gorter, D. (2017b). Translanguaging as a pedagogical tool in multilingual education. In J. Cenoz, D. Gorter & S. May (Eds.), *Encyclopedia of language and education* (3rd ed., pp. 1–14). Cham: Springer.
- Creese, A., & Blackledge, A. (2010). Translanguaging in the bilingual classroom: A pedagogy for learning and teaching? *The Modern Language Journal*, 94(1), 103–115. doi:10.1111/j.1540-4781.2009.00986.x
- Cummins, J. (2007). Rethinking monolingual instructional strategies in multilingual classrooms. *Canadian Journal of Applied Linguistics/Revue Canadienne de Linguistique Appliquée*, 10(2), 221–240.
- Cummins, J. (2017). Teaching for transfer in multilingual school contexts. In O. García, A. Lin & S. May (Eds.), *Encyclopedia of language and education* (3rd ed., pp. 103–115). Cham: Springer.
- Cummins, J., & Persad, R. (2014). Teaching through a multilingual lens: The evolution of EAL policy and practice in Canada. *Education Matters: The Journal of Teaching and Learning*, 2(1), 4–40.
- Deacon, S. H., Wade-Woolley, L., & Kirby, J. (2007). Crossover: The role of morphological awareness in French immersion children's reading. *Developmental Psychology*, 43(3), 732–746. doi:10.1037/0012-1649.43.3.732
- Escamilla, K., Hopewell, S., Butvilofsky, S., Sparrow, W., Soltero-González, L., Ruiz-Figueroa, O., & Escamilla, M. (2013). *Biliteracy from the start: Literacy squared in action*. Philadelphia, PA: Caslon Publishing.
- García, O. (2009). *Bilingual education in the 21st century: A global perspective*. Hoboken, NJ: John Wiley & Sons.
- Goodwin, A. P., & Ahn, S. (2010). A meta-analysis of morphological interventions: Effects on literacy achievement of children with literacy difficulties. *Annals of Dyslexia*, 60(2), 183–208. doi:10.1007/s11881-010-0041-x
- Goodwin, A. P., & Ahn, S. (2013). A meta-analysis of morphological interventions in English: Effects on literacy outcomes for school-age children. *Scientific Studies of Reading*, 17(4), 257–285. doi:10.1080/10888438.2012.689791
- Jones, B., & Lewis, W. G. (2014). Language arrangements within bilingual education. In W. G. Lewis, B. Jones, G. Lewis & E. M. Thomas (Eds.), *Advances in the study of bilingualism* (pp. 141–170). Bristol: Multilingual Matters.
- Ke, S., & Xiao, F. (2015). Cross-linguistic transfer of morphological awareness between Chinese and English. *Language Awareness*, 24(4), 355–380. doi:10.1080/09658416.2015.1114624
- Kim, T. J., Kuo, L.-J., Ramírez, G., Wu, S., Ku, Y.-M., de Marin, S., ... Eslami, Z. (2015). The relationship between bilingual experience and the development of morphological and morpho-syntactic awareness: A cross-linguistic study of classroom discourse. *Language Awareness*, 24(4), 332–354. doi:10.1080/09658416.2015.1113983
- Koda, K., Lü, C., & Zhang, D. (2014). L1-induced facilitation in biliteracy development in Chinese and English. In X. Chen, Q. Wang & Y. Luo (Eds.), *Reading development and difficulties in monolingual and bilingual Chinese Children. Literacy studies* (pp. 141–169). Dordrecht: Springer.
- Kuo, L. J., & Anderson, R. C. (2006). Morphological awareness and learning to read: A cross-language perspective. *Educational Psychologist*, 41(3), 161–180. doi:10.1207/s15326985ep4103_3
- Leonet, O., Cenoz, J., & Gorter, D. (2017). Challenging Minority Language Isolation: Translanguaging in a Trilingual School in the Basque Country. *Journal of Language. Identity & Education*, 16(4), 216–227. doi:10.1080/15348458.2017.1328281
- Levine, G. S. (2011). *Code choice in the language classroom*. Bristol: Multilingual Matters.
- Lewis, G., Jones, B., & Baker, C. (2012a). Translanguaging: Origins and development from school to street and beyond. *Educational Research and Evaluation*, 18(7), 641–654. doi:10.1080/13803611.2012.718488

- Lewis, G., Jones, B., & Baker, C. (2012b). Translanguaging: Developing its conceptualisation and contextualisation. *Educational Research and Evaluation*, 18(7), 655–670. doi:10.1080/13803611.2012.718490
- Lyster, R. (2015). Using form-focused tasks to integrate language across the immersion curriculum. *System*, 54, 4–13. doi:10.1016/j.system.2014.09.022
- Lyster, R., Collins, L., & Ballinger, S. (2009). Linking languages through a bilingual read-aloud project. *Language Awareness*, 18(3–4), 366–383. doi:10.1080/09658410903197322
- Lyster, R., Quiroga, J., & Ballinger, S. (2013). The effects of biliteracy instruction on morphological awareness. *Journal of Immersion and Content-Based Language Education*, 1(2), 169–197. doi:10.1075/jicb.1.2.02lys
- Lubliner, S., & Hiebert, E. H. (2011). An analysis of English–Spanish cognates as a source of general academic language. *Bilingual Research Journal*, 34(1), 76–93. doi:10.1080/15235882.2011.568589
- McBride-Chang, C., Wagner, R. K., Muse, A., Chow, B. W. Y., & Shu, H. U. A. (2005). The role of morphological awareness in children's vocabulary acquisition in English. *Applied Psycholinguistics*, 26(3), 415–435. doi:10.1017/S014271640505023X
- Nation, P. (2008). Lexical awareness in second language learning. In J. Cenoz & N.H. Hornberger (Eds.), *Encyclopedia of language and education* (2nd ed., pp. 1924–1934). Boston, MA: Springer US.
- Núñez Delgado, P., & Pinto, M. A. (2015). *THAM-2. Test de Habilidades Metalingüísticas n°2 (9-14 años) [MAT-2. Metalinguistic Ability Tests 2 (9-14 years)]*. Roma: Sapienza Università.
- Pasquarella, A., Chen, X., Lam, K., Luo, Y. C., & Ramirez, G. (2011). Cross-language transfer of morphological awareness in Chinese–English bilinguals. *Journal of Research in Reading*, 34(1), 23–42. doi:10.1111/j.1467-9817.2010.01484.x
- Pinto, M. A., Candilera, G., & Illiceto, P. (2003). *TAM-2 Test di abilità metalinguistiche 2 (9-14 anni). La valutazione dello sviluppo metalinguistico tra scuola elementare e scuola media. [TAM-2. Metalinguistic Ability Tests 2 (9-14 years). Evaluation of the metalinguistic development in elementary and middle school.]*. Roma: Scione Editore.
- Quiroga, J. (2013). *Measuring morphological awareness across languages*. (Unpublished master's thesis). McGill University, Montreal: Canada.
- Swain, M., & Lapkin, S. (2013). A Vygotskian sociocultural perspective on immersion education: The L1/L2 debate. *Journal of Immersion and Content-Based Language Education*, 1(1), 101–129. doi:10.1075/jicb.1.1.05swa
- Turnbull, M., & Dailey-O'Cain, J. (2009). Concluding reflections: Moving forward. In M. Turnbull, & J. Dailey-O'Cain (Eds.), *First language use in second and foreign language learning* (pp. 182–186). Bristol: Multilingual Matters.
- White, J. L., & Horst, M. (2012). Cognate awareness-raising in late childhood: Teachable and useful. *Language Awareness*, 21(1–2), 181–196. doi:10.1080/09658416.2011.639885
- Zhang, D. (2016). Morphology in Malay–English biliteracy acquisition: An intervention study. *International Journal of Bilingual Education and Bilingualism*, 19 (5), 546–562. doi:10.1080/13670050.2015.1026873