Does learning to read in English delay primary school children's literacy acquisition in Italian?

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Abstract. Learning to read in two languages simultaneously – within an immersion programme - is still believed by many stakeholders in education to cause a delay in the process of literacy acquisition. Forty-one Italian-English bilingual first- and third-graders (attending a bilingual primary school in Italy) and a control group of thirty-seven monolingual Italian pupils in Grades 1 and 3 were administered tasks, in Italian, measuring the following skills: non-verbal reasoning, reading decoding and morphological awareness. Bilingual participants who had been exposed to Italian since birth and to English within the first three years of their lives did not lag behind monolingual in the reading performance in Italian. Moreover, even when a difference between the two groups was present in their Italian oral performance, this disappeared by Grade 3. Overall, it seems that, when dual-language exposure occurs at an early age, learning to read in an L1, Italian, and an L2, English, at the same time, does not have a negative impact on reading performance in Italian.

Keywords: Literacy, bilingualism, dual language, immersion programmes

Introduction

In Italian schools, teaching English from grade 1 has been compulsory since 2000. This language is learned as a school subject but is not used as a medium of instruction. However, there are many schools, mostly private, that offer bilingual programmes with the aim of promoting bilingualism, multilingualism, language maintenance and cultural enrichment. There are different types of programmes in which an additional language is not simply taught as a foreign language but as a language of

instruction for the various school subjects (Baker 2001). Among these programmes, we find *Immersion* programmes, which educate students in both L1 (native language) and L2 (an additional language) and vary according to the age at which the child starts the experience and to the amount of time spent in L2 immersion. These types of programmes are often carried out in two majority languages (e.g. English and French in Canada, English and Gaelic in Scotland). Another type of programme is *Two-Way* or *Dual-Language Education,* which provides bilingual instruction and is usually applied to school contexts which display equal numbers of language-minority and language-majority students (e.g. Spanish-English teaching in USA schools attended by both Spanish-speaking and English-speaking students).

Overall, bilingual programmes are superior to monolingual ones, especially in the long run. This statement is corroborated by a number of studies and meta-analyses that have compared the various approaches to dual-language education (see Baker 2001; Greene 1998; Rolstad, Mahoney & Glass 2005a;b; Slavin & Cheung 2003; 2005). In a recent study carried out in the USA by Berens, Kovelman & Petitto (2013), the reading and language performance of Grade-2 and Grade-3 children (7–9 years of age), placed in English-Spanish dual-language learning contexts, was compared to that of monolingual peers attending single-language English schools. The two groups – matched for age, sex and socioeconomic status (SES) – were administered tasks, in English, measuring the following linguistic abilities: phonological awareness, reading decoding, irregular word reading, passage comprehension and expressive language. Fifty-eight participants were from English-only-speaking homes but had been exposed to both English and Spanish since entering their bilingual school around the age of 3, whereas the remaining 49 students were also from English-only-speaking families but attended a single-language English school. The authors found that students placed in a dual-language learning context performed significantly better, in English, than children from monolingual schools on two tasks, i.e. irregular word reading and passage comprehension, and equally well on the other tasks. This result is especially interesting if we consider that the students placed in dual-language programmes were only instructed in English for 50% *or less* of their time at school yet still managed to outperform children who were instructed in English 100% of the time. Berens, Kovelman & Petitto (2013) concluded that a dual-language approach to education not only does not hinder the development of language and reading skills in L1, but, on the contrary, seems to provide a reading advantage in the students' native language. Furthermore, Kovelman, Baker & Petitto (2008) established that the age of first exposure to the L2 has an impact on the reading achievement of second- and third-graders (aged 7-9 years): in

their study, a total of 150 participants were recruited from three 50:50 Spanish-English bilingual schools (one located in California and the other two in Connecticut) and two monolingual English schools in New Hampshire. Three groups of participants came from Spanish-speaking homes belonging to the same socio-economic and cultural background (i.e. migrant families from Latin America with a low SES), but varied according to the age at which they were exposed to English for the first time: 25 children had been exposed to English for the first time within the first three years of their life, 19 students had first been exposed to English between the ages of 3 and 4 and the remaining 19 children's first bilingual exposure had taken place between 5 and 6 years of age. A fourth group included 36 students from English-speaking families whose age of first exposure to Spanish was 5-6 years. A fifth and final group, which served as a control condition, included 51 English-only-speaking children, who attended mainstream English education and had never been exposed to Spanish. Except for this final group, whose members were only tested in English, all the other participants were administered tasks in both languages, measuring the following skills: phonological awareness (initial phoneme deletion, final phoneme deletion and phoneme segmentation), reading (regular word, irregular word, pseudo-word and passage comprehension) and Language Competence/Expressive Proficiency (LCEP). Results showed that only early bilinguals, i.e. the children who had first been exposed to two languages within the first three years of their lives, reached a high level of reading proficiency in both languages; more specifically, participants with an early bilingual exposure performed just as well on the English reading tasks as their monolingual peers and, on the tests carried out in Spanish, they exhibited a reading performance equal to that of the Spanish-speaking children who had been monolingual until the age of 5-6. On the contrary, children who had been exposed to a second language after the age of 3 did not reach the same level of reading ability in second and third grade. However, it should be noted that an interesting exception to this result was found: students from English-speaking homes who had been exposed to Spanish for the first time between the ages of 5 and 6 actually outperformed the monolingual control group on the tasks measuring English phonological awareness. The most likely explanation for this finding is that the English-speaking children, who had been exposed to Spanish since 5 or 6 years of age, benefitted from learning Spanish (a language with a shallow orthography) and successfully transferred to English the phonological awareness skills gained in Spanish (see: Bonifacci & Tobia 2016, for a study on the L2 literacy development of immigrant children in Italy). These findings are consistent with a number of other studies that have reached similar results suggesting that, when compared to a

later exposure to a second language, a bilingual exposure starting within the first three or four years of life yields the best linguistic results (e.g. Flege, Yeni-Komshian & Liu 1999; Perani et al. 2003). Generally speaking, the earlier one becomes bilingual, the better, and this is true not just for oral language competence, but – as the two previously described studies show – for literacy proficiency as well. In fact, numerous authors have identified the first three to four years of life as a *sensitive period* for the acquisition of a second language; in other words, during their first few years of life, children experience a heightened sensitivity towards certain aspects of linguistic input and the learning they gain from this type of linguistic stimuli reaches its full potential (Kovelman, Baker & Petitto 2008).

In spite of these encouraging results, the belief that learning to read in two languages simultaneously may confuse the child and slow down literacy acquisition is still widespread among stakeholders in education. In this study, we sought to verify whether learning to read in a first language is delayed when simultaneously learning to read in a second language.

Materials and methods

Participants

Four groups of typically developing Italian-speaking children participated in this study (total N = 78); the subjects were aged 5;10 through 9;4 and were attending Grades 1 and 3. There were two groups of children in Grade 1 - 20 attending a dual-language Italian-English school (dual-language learners) and 21 attending a monolingual Italian school - and two groups of children in Grade 3: 20 attending a bilingual school and 17 attending a monolingual school. All dual-language children attended a dual-language programme and had been exposed to English (as an L2) since the age of at least 3-4 years old. All participants were native Italian-speakers from monolingual homes in Milan, Italy. The bilingual children had been attending an Italian-English dual-language programme in Milan since kindergarten and received almost 50% of schooling in English (as Geography, Science and Art classes) from English mother-tongue teachers and the other half from Italian mother-tongue teachers. This dual-language programme, known as *50:50* or *simultaneous,* is implemented in a number of educational contexts worldwide (e.g., Berens, Kovelman & Petitto 2013). The monolingual children had been attending a traditional monolingual Italian school in Milan. The educational attainment of both parents was assessed via family questionnaires

and was considered as an approximative measure of their socioeconomic status (SES) (Boerma et al. 2015; Hansen et al. 2017). We asked for parents' highest level of education, distinguishing between: university level (4), high school (3), middle school (2) and primary school (1), then we summed the two scores. Parents of bilingual children were also asked to provide the approximate age of their children's first exposure to English (L2), which varied from ages 1 to 4 in Grade 1 and from 1 to 3;5 in Grade 3. The overall mean age of first exposure to English was M = 2.4 (SD = 0.83, age range 1-4 years). No difference was observed in the age of exposure between the two groups of children. Bilingual children were matched for age and SES to monolingual children. No age difference was found between the two groups in Grade 1 (monolingual children: M = 81.1, SD = 3.3; bilingual children: M = 79.4, SD = 3.7) or in Grade 3 (monolingual children: M = 104, SD = 4.5; bilingual children: M = 107, SD = 4.2). The four groups of children did not differ in parental educational level (Grade 1: monolingual children: M = 7.5, SD = 1 and bilingual children M = 7.7, SD = 0.6; grade 3 monolingual children: M = 7.6, SD = 0.7 and bilingual children: M = 7.9, SD = 0.3).

Procedure

Children were assessed individually in one single session during regular school hours, in a quiet room inside the school. Questionnaires regarding parental educational attainment, age of first exposure to the L2 and language background were filled out by parents at home. In a preliminary phase, additional information regarding students' academic performance and any psychological or neurological conditions were collected from teachers, in order to ensure that all participants' language development and literacy acquisition were within normal limits. Prior to testing, all of the children's parents were informed about the study and they were asked to sign an informed consent form in order to authorise their children's participation. A native Italian speaker administered all the Italian tasks, during which instructions were given in Italian. English tasks and instructions, which were needed for bilingual children's English assessment, were read and recorded by a native English speaker, then played to the participants through headphones. Instructions were repeated as many times as necessary to ensure that children understood what they had to do. Children's performances were all recorded and then transcribed for analysis in CHAT format.

Tasks and Scoring

We assessed students' non-verbal cognitive ability and reading decoding skills (i.e. children's ability to match a linguistic sound to the correct letter of the alphabet, also referred to as sound-to-letter correspondence; Berens, Kovelman & Petitto 2013), which were tested with an Italian standardized word and nonword reading task. We also administered a morphological awareness task as a measure of oral language proficiency. In order to investigate bilingual students' English competence, we used two different tasks, depending on the age of the subject. Here is a detailed description of every single task:

- *Raven's Coloured Progressive Matrices (CPM) (Raven 1965)* for the assessment of fluid (nonverbal) intelligence. Raven's Matrices involve direct reasoning skills; children are presented with a figure that is missing one piece and they have to find the right missing item for every figure, choosing one out of six alternatives. The test consists of three series, with twelve elements each. We used raw scores, as the aim was to compare groups rather than diagnostic.

- *Batteria di Valutazione delle Competenze Sintattiche e Morfologiche (CO.SI.MO) (Battery for the Evaluation of Syntactic and Morphological Competences)* (Lorusso 2009) *subtest 2a and 2c,* for the assessment of Italian morphological awareness. Both subtests require subjects to morphologically manipulate nonwords: 2a involves inflectional and derivational morphemes, 2c derivational morphemes. Children are asked to complete some phrases by creating a neologism that is consistent with Italian morphological constraints (*e.g.,* "Ieri ho comprato un "prico", uno è molto piccolo è proprio un [prichino], "Yesterday I bought a *pric-o-sg-masc,* a very little one is a *prich-ino-sg-masc-DIM"* for subtest 2a; "Il "gruntatore" è colui che [grunta], "the *gruntat-ore-sg-masc* is someone who *grunt-a-V-3rdperson"* for subtest 2c). Before executing the tasks, children were instructed in a playful way in order for them to become familiar with the task and the nonwords. If needed, examples were further offered using real Italian words. Every correct answer was worth 1 point. For analysis purposes, we considered the scores of both subtests together.

- *Batteria per la dislessia e disortografia evolutiva (Battery for developmental dyslexia and disgraphia)* (Sartori, Job & Tressoldi 1995), *subtest 4 and 5,* for the assessment of Italian reading decoding skills. Subtest 4 is a word reading task made up of four columns of different words (112 in total). There is an increasing degree of difficulty

in the series of words, with the first ones being more concrete, high-frequency, shorter words and the latter more abstract, less frequent, longer words. Subtest 5 is a nonword reading task, made up of three columns containing different nonwords (48 in total), created in order to be consistent with Italian phonotactic probability or Italian "wordlikeness" and placed in order of ascending difficulty, from shorter and simpler to gradually longer and more difficult nonwords. Before executing the tasks, children were asked to be as accurate and rapid as possible. Assessment on both subtests is based on accuracy (total number of errors, one *per* word) and reading rate (calculated as syllables/second). First Grade students were assessed on just the first set of items, for both subtests.

- *Frog Story* (Mayer 1969) for English (L2) competence assessment in Grade-1 bilingual children. It is a story-telling task that requires children to produce a story on the basis of pictures representing a situation. We used 8 pictures and introduced the story in the same way to every subject in order to help them start the task; we then tried to intervene in the story-telling as little as possible. For assessment and further analysis we considered the mean length of utterance in words (MLU).

- *Clinical Evaluation of Language Fundamentals - Fifth Edition (CELF-5)* (Wiig, Semel & Secord 2013)*, Word Structure subtest, 2013,* for English (L2) competence assessment in Grade-3 bilingual children. The subtest we used assesses English morphological acquisition: children are asked to complete some phrases on the basis of a picture representing a situation. Every phrase was scored as 0 points if incorrect, 1 point if correct.

Results

To obtain a measure of oral English competence from our participants, we collected narratives elicited through the Frog Story for Grade-1 children and administered the CELF-5 to Grade-3 children. From the narratives we computed the MLU in words and compared this measure with similar measures obtained from data included in the CHILDES database (MacWhinney 2000). More specifically, we compared the MLU of 20 bilingual participants to that of 20 monolingual children (age 6) whose Frog Story narratives were included by Wolf-Hemphill Corpus in the CHILDES database. We found that bilingual children had a higher MLU than monolingual children of the same age: M-mono = 4.88 (SD = 0.76),

M-bil = 7.19 (DS = 1.8). Although the MLU is a rough measure and not highly informative after age 3, our results indicate that our bilingual children were able to speak English and use sentences. As regards Grade 3, we compared the scores obtained by our participants in the CELF-5 to the normal values obtained from the monolingual population. All bilingual children obtained scores that were either within normal limits or 1 SD above average for their age group.

Having established that the bilingual sample was able to speak English, form sentences and for grade 3 scores within normal range in a morphosyntactic test, we will now report the reading and morphological awareness measures in Italian of our subjects. Table 1 summarises the average scores on the various tests of children divided by class and language groups: Raven's Matrices standard scores, reading and morphological awareness.

	Raven (standard score)	Reading words (raw score)		Reading non-words (raw score)		Morpho (raw score)
		Sill/sec	Errors	Sill/sec	Errors	
Bil Grade 1	1.18 (0.8)	1.05 (0.7)	1.8 (2.3)	0.7 (0.3)	1.4 (1.8)	5.50 (2.1)
MonoGrade 1	1.57 (0.97)	0.98 (0.9)	3.8 (3.9)	0.8 (0.45)	2.9 (1.8)	9.07 (2.3)
Bil Grade 3	0.99 (0.56)	3.41 (0.9)	2.25 (1.7)	2.18 (0.6)	2.7 (2.9)	11.3 (2.4)
MonoGrade 3	1.28 (0.4)	2 (0.9)	1.47 (1.7)	1.9 (0.6)	2.76 (2.25)	12.1 (1.4)

Table 1: *Scores obtained in Raven's Matrices, word and non-word reading (speed and accuracy) and morphological awareness by monolingual Italian-speaking children and Italian-English bilingual children attending Grades 1 and 3*

Nonverbal intelligence

All children scored within normal limits in Raven's Matrices and no difference was observed between the two groups of children.

Reading decoding skills

Alpha-levels were set to 0.05 and were controlled using the Bonferroni method. We conducted two 2 X 2 mixed ANOVAs on reading decoding skills for Grade 1 and Grade 3 children respectively, with stimulus type (i.e. word vs. nonword) as within-subjects variable and language status as between-subjects variable. Error score (i.e. total number of errors) and reading rate score (i.e. syllables/second ratio) were set as dependent variables.

Grade 1. Considering reading rate patterns, we only observed a significant effect of stimulus type (F (1, 39) = 10.4, p < .003, η^2 = .21),

which is a generally greater speed when reading words compared to non-words; there was no main effect of language status on reading rate, as bilingual and monolingual children showed a similar level of overall performance. Considering accuracy in reading both words and nonwords, there was a significant effect of language status: $F(1, 39) = 5.7$, $p < .03$, $\eta^2 = .12$, with error rates being higher in the monolingual than in the bilingual group.

Grade 3: Considering reading rate patterns, no significant effect of language status was observed. A significant effect of stimulus type was present within subjects ($F (1, 35) = 276.45$, $p < .0001$, $\eta^2 = .89$), once again with a faster performance in reading words compared to nonwords. With regard to error rates, we found a significant effect of stimulus type ($F (1, 35) = 4.65$, $p < .04$, $\eta^2 = 0.11$), with a higher number of errors in reading nonwords than words, while no effect of language status was observed. Therefore, the bilingual advantage in accuracy observed in Grade 1 seems to disappear by the third year of primary school.

Italian oral language

As for morphological skills (CO.SI.MO), we found a group difference in Grade 1 to the advantage of monolinguals: $t(39) = 5.14$, $p < .01$, which was no longer present in Grade 3.

Correlations

We found correlations between reading rate of words/nonwords and scores in morphological awareness in all participants (words: $r = 0.64$, $p < .001$; nonwords: $r = 0.60$, $p < .001$) and in the two language groups separately (monolingual: words: $r = 0.66$, $p < .001$, nonwords: $r = 0.61$, $p < .001$; bilingual words $= r = 0.76$, $p < .001$, non words: $r = 0.70$, $p < .001$). In other words, children who obtained a higher score in the morphological awareness task were also faster at reading.

Discussion

The current study aimed to investigate whether the language and reading performance in Italian of Italian-English bilingual primary school children – who had been exposed to Italian since birth and to English within the first three years of their lives in an educational context – differed significantly from that exhibited by their Italian monolingual peers. As regards the comparison between the Italian performance of monolingual

and that of bilingual children, results showed that there was no differ-ence in reading rate between the two groups either in Grade 1 or in Grade 3. Error rate differed significantly in Grade 1, with bilingual chil-dren outperforming their monolingual peers. Grade-1 participants also differed with respect to morphological awareness, with an advantage for monolingual children. All differences disappeared in Grade 3. Overall, it seems that simultaneously learning to read in the L1, Italian, and in the L2, English, does not have a negative impact on the reading performance in Italian, when bilingual children are first exposed to the L2 within the first three year of life.

So far, research comparing bilingual children's literacy performance to that exhibited by their monolingual peers has reached conflicting find-ings. On certain tasks, some authors have found a superior perform-ance of bilinguals over monolinguals (e.g. Berens, Kovelman & Petitto 2013; Bialystok, Luk & Kwan 2005), while others have found the op-posite (e.g. Da Fontoura & Siegel 1995). Furthermore, some studies have found that bilingual children perform better than monolinguals on some literacy tasks and worse on others (e.g. Mumtaz & Humphreys 2001), whereas others have observed that bilingual students outperform monolinguals in one of their languages (their dominant language) but are outperformed by their monolingual peers in their other known lan-guage (e.g. D'Angiulli, Siegel & Serra 2001). Finally, authors have also reached findings indicating no difference in the literacy proficiency of monolingual and bilingual children (e.g. Abu-Rabia & Siegel 2002). Bi-lingualism is a very complex and heterogeneous phenomenon, which makes it a difficult topic for experimental research to tackle and invest-igate in a linear, straightforward manner. Bilingual individuals can vary greatly on a number of different dimensions, such as: the age of first dual-language exposure, the amount of time spent being exposed to and using both languages, the degree of "balance" between the two languages and the level of motivation that drives the person to speak each of the two languages. In addition, there are other factors, like SES and ethnicity, which should be controlled for when investigating bilingual individuals in order to avoid inaccurate findings. In our study, we were able to con-trol for SES and age of exposure to the L2 and were able to conclude that L2 literacy acquisition does not hinder the development of L1 literacy. In other words, learning to read in two languages – when both languages have been previously activated in the oral modality – does not have a negative impact on reading achievement in L1. Future research should examine other dual-language situations (e.g., when exposure to the L2 occurs later than age 3), taking into account all of the different variables that may affect literacy acquisition. In the current study, we focused on Italian, as the primary interest was to debunk the myth that learning to

read in English may delay Italian literacy acquisition. In future research, it may be interesting to establish whether there is an effect of Italian reading acquisition on learning to read in English.

Bilingualism is a reality that is typical of most educational environments all around the world; teachers and educators therefore need to be informed and trained on the subject of dual-language education and bi-literacy, which should always be encouraged and fostered. Even if there might not be a bilingual advantage when it comes to learning to read and write – or, at least, maybe not in *all* cases and types of bilingualism –, surely knowing more than one language, in both oral and written forms, could never be considered as a drawback: in fact, "knowing more has never been a disadvantage when compared to knowing less" (Bialystok 2007, p. 71).

Acknowledgements

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