

## The study of relationship between bilingualism and private speech with English learning in elementary school students

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### Abstract

**Purpose:** This study investigated the relationship between gender and bilingualism with English learning among 7-11 years old students. **Methodology:** 261 students (124 girls and 157 boys) were selected through multi-stage sampling method from elementary school. Employing check list the level of English scores was obtained. The children's private speech obtained from listening to them when they were solving a puzzle in group. **Findings:** An independent t test showed that there was no significant relationship between bilingualism and English scores ( $p < 0.05$ ). Furthermore an ANOVA test indicated that there was a significant relationship between the type of private speech and English scores ( $p < 0.01$ ). A Sheffe post hoc showed that the solving private speech had the significant relationship with high performance in English scores among four types of private speech: Solving speech, Task relevant speech, non-facilitative Coping/reinforcing speech and task-irrelevant speech. **Discussion:** considering the nature of the "solving private speech" indicates that this kind of private speech had a more meta-cognitive nature which leads to better cognitive function such as learning English.

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## 1. Introduction

Considering and identifying the various components and variables involved in learning English can be a good model for teaching and learning it in a better way in the early years. The results of the research show that many factors are involved in learning and especially language learning, such as learning styles, learning and study orientations (Seif, 2016), gender (Rahmatian and Atrashi, 2007) and (Studenska, 2011), Speech Rate (Ahadi, Shahbdaghi, Faghihzadeh, and Bakhtiari 2006), Private Speech (Sharp, 2004) Levels of education (Studenska, 2011), age, experience, accent (Moire, 2005), bilingualism, critical period of development, (Henkel, 2005), Impulsiveness, integrity, communication strategies, anxiety risk, introverted externality, and excitement (Brown, 2014), which has been studied in this research among these many factors, namely, the relationship between private speech and bilingualism with English language learning.

Bilingualism can affect cognitive features such as learning English (Steve, Martine and Martial, 2008). In some English language teaching approaches, knowing the mother tongue and the positive or negative transfer are considered as the basic principles of teaching and learning second language. For example, Karmi-Nouri, Moniri and Nilsson (2003) in their study of the ability of a Swedish-Iranian children (children who can simultaneously learn to speak in Persian and Swedish), in comparison to Swedish children are more likely to operate better memory tasks. In another study, Karmi-Nouri, et al (2008) found that the bilingual children operate better than monolinguals.

Ahmadi, Mahmoudi, Saleh and Karimanpour (2014) in a research that showed that monolingual-male children of the third grade elementary school have superiority over bilinguals in vocabulary and reading comprehension. But they did not differ in comprehension. Teubner-Rhodes, Mishler, Corbett, Andreu, Sanze Torrent, Trueswel and Novick (2016) showed that bilinguals have better performance than monolinguals comprehending sentences. Bilingualism has a positive impact on cognitive development in children. Children who are fluent in two languages have better performance in their tests of attention control, conceptualization, analytical reasoning, cognitive flexibility, and complexity than their counterparts (Bialystok, 2001; 2007; Bialystok and Craik, 2010). In addition, bilingual children are more aware of the written and spoken structure of the language than those of the monolingual children, as well as being more aware of the grammatical and semantic errors. These findings also highlight the superiority of bilingualism apart from the language and the community.

Nevertheless, a new review study showed that bilingual children have less formal language efficiency (e.g. less vocabulary) than monolingual children (Bialystok and Craik, 2010).

In another study, it became clear that Brazilian -Portuguese's experienced analytical problems when reading the induced movement alternations, while monolingual did not encounter such a problem (Herda, Altariba and Cieslicka, 2016).

A number of researchers (Melhorn, 2007, Bainna, 2009, Grosjean and Pavlenko, 2015) claim that bilingualism not only does not negatively affect the language learning process, but rather, it facilitates the process of learning third language. The results of Abtahi and Khodadadian's research (2016) showed that bilingualism is effective on the level of progress in the third language. Cenoz (2008) claims that most scholars who study the impact of bilingualism on learning a third language prove that the benefits of bilingualism in learning another language are more than monolingual.

The results of the research (Fattahi, 1993; Mehrjou, 1993; Khosro, 1996; Hossipian, 1999; Mirasmaeili, 2001; quoted by Assare, 2008) pointed to the weakness of academic performance and the academic achievement of students in bilingual regions than monolingual Persian learners. Regarding linguistic problems, Rahmani Zadeh (1999), in his research, showed that students of the fifth grade elementary school in bilingual regions were weaker in the reading skills than the Tehrani monolingual. Sattari (2001) has also reported a lot of frequencies in interference of mother tongue in the analysis of the errors of the Lacks in the Persian. Zia Hosseini (1998), in his research, considered the factor of tense as a destroying factor in learning for Azeri speakers.

Lee (2008), in a research which included English-American bilingual students at the University of North America while studying for exam preparation for three hours, filmed in a private room, analyzing the films showed that students were involved in cognitive activities for self-regulation, private speech and physical

movements as a form of used the interactive agent. Moreover, Swain, Kinnear and Steinman (2015) showed the positive effects of private speech in language learning.

Bilingualism or multilingualism is a phenomenon that exists in almost all countries of the world. This phenomenon is of a more interdisciplinary nature and is of interest to sociologists, psychologists, and education professionals. Bilingualism is a general term commonly used with two individual and social concepts, in many parts of the world, many children are exposed to more than one language during the early years of life and grow as bilingual (Cline, Guilford; Birch, 2015)

There is no consensus on the definition of bilingualism among researchers. Here are questions such as "to what extent should an individual have to master two languages in order to be bilingual?" Or "bilingualism means precisely what?" All linguists do not agree in this regard, as Hartman and Stork consider bilingualism as dominant in both languages, while others consider limited domination in two languages. Wayne Raish calls a person bilingual who can use two languages alternately and simultaneously. Haket also requires the mastery of two languages for bilingualism, in his view; this is not necessarily a complete and native domination (Modaresi, 2007).

According to the definition of Oxford Dictionary, the term bilingualism refers to a person who can use his own speech in two languages, or a person who uses two languages, and uses them (Mckian, 2010). The psychology Dictionary of the American Psychological Association also defines "the use of two or more languages in one or more languages by a person or in a language community" (VandenBos, 2015).

Colins and Nanci (2011) have given such definitions for bilingualism: the ability to speak or understand a second language in addition to native language. However, the ability to read or write in a second language may or may not be part of bilingualism, the ability to speak two languages at the same or similar level. Such a view will narrow the range of bilingual people. In addition, it seems difficult to operate such a definition based on using a language as fluency as the native user of a language. Debot and Jaensh (2013) criticize the definition of bilingualism and say that this definition has some defects. Bilingualism ranges from a minimum level of skill, in two languages up to the high level of skill that allow a person to use two languages like a native speaker of the languages. An individual may call himself bilingual simply because he can speak two languages and create a verbal communication considers himself as bilingual or another person call himself bilingual as he can speak in two languages. The bilingual term refers to individuals or groups whose language ability in those two languages, especially in the verbal dimension, can be extended to native speakers of those two languages.

However, according to Butler and Hakuta (2006), bilingualism has a complex psychological, linguistic, and cultural dimension that has different dimensions. Therefore, it is not possible to provide a clear definition of bilingualism. Hashin and Sahel (1994) noted that native language skills facilitated the learning of second language. The results of field research in Iran show that the use of native language in second language teaching classes is effective. Yousefi, Sohrabi, Etemadi and Ahmadi (2009) in a comparative study of English language learning of bilingual students with monolingual students, showed that bilingual students were superior to monolinguals in Learning English. In a study by yohannai (2004) about learning linguistic verbs in English as a second / third language, monolingual Persian-speakers and bilingual Arabic-speaking Iranian were studied, bilingual superiority was shown.

Panahi (2005) concluded that the bilingual subjects were superior compared to monolingual group, as a study of the new method in promoting the transfer of learning from native language to similar situations in vocabulary learning in the second language. In the study of Bahraini (2007), bilingualism is a suppressor or enhancer? Which was conducted on 150 pre-university girl students in Tehran, It was concluded that Fars monolinguals had better performance in two grammar and vocabulary fields than Fars-Turks. That was not in line with previous results. Assare (2009) studying the problems of linguistic problems of primary school children in bilingual areas also confirmed the existence of cognitive problems for bilingual children.

Private speech is a self-directed speech that emerges during the years before the school, when children begin to talk with themselves when doing their activities (Lidstone, Meins and Fernyhough, 2011).

The American Psychological Association's psychology Dictionary also defines private speech as "spontaneous self-directed talk in which a person "thinks aloud," particularly as a means of regulating cognitive processes and guiding behavior (VandenBos, 2015)". It seems that private speech is efficiently

associated with cognitive function: it emerges when encountering a problem in carrying out a task and the product of this private speech is associated with success in a wide range of assignments (Fernyhough and Fradley, 2005).

The utterance of obvious private speech is declining during the early years of childhood, and in the middle of childhood, more private speeches come in the form of whispering and lip-voice free lip-movements (Winsler, 2009). It is believed that this shift to hidden private speech reflects the gradual internalization of private speech for the formation of inner speech or verbal thinking (Vygotsky, 1934, 1987, quoted by Kimberly and Cynthia, 2012).

In other words, private speech is a verifiable speech that the don't address anybody else; on the other hand, internal speech refers to completely unambiguous theological thinking-that is, a speech that is completely in-head (Winsler, Fernyhough and Fradley, McClaren and Way, 2004). Private speech is seen in pre-primary and primary school years (Winsler, Fernyhough and Fradley, and Montero, 2009). Private speech can be found in one of the four categories below (Winsler, 2009).

Solving speech: contain statements that indicate that a solution to the problem has been found. This category of private speech also contains the questions and answers of the child while doing the assignment. Examples of this type of speech are: "I have to put this one here, and if I find another like this, it will be true ".As Berk says, private speech helps the child to take on a challenging position to avoid unrelated behaviors (Baltter and Tamis - Lemonda, 2016) .2-Task relevant speech, non- facilitative: contains statements that relate to the child's activity on the desired assignmentnot only it does not contribute to the completion of the assignment, but also it causes the inhibition of the activity. Examples of this type of private speech include: I hate this or I cannot fix it .3- Coping/ reinforcing speech: include statements that reinforce and reward behavior toward the assignment. At this level, the child's private speech emphasizes their abilities in solving the problem and doing the assignment. In addition, using this type of private speech ensures that if he/she encounters a problem while performing the assignment, he/she will be able to resolve it. Examples of this type of private speech are: I've done all or anyway I need to fix it .4- task- irrelevant speech: contains statements that do not relate to the activity in question, and do not contribute to the task. For example, the child's private speech may be related to the work done at home or a travel ahead.

One of the fundamental questions that led research over the years is the question of whether there is a particular developmental trend for private speech. In the other word, at what age does a private speech occur? What changes in the type of speech, frequency, type, and performance, would occur with the development of children? Vygotsky's early observations and assumptions about private speech showed that an inverse -U- curve relation between age and the increase of private speech is in abundance that reached its peak in the years before the primary school and in the primary school are reduced to the point of whispering or voiceless thinking. For this general growth pattern, there is a qualitative backbone. It is clearly documented by the fact that, as the children grow older, they speak private speech from the external form to the inner form, but the idea that private speech appears at a precise age and then disappears does not have much research support (Berk, 1992). However, it is clear that private speech does not belong solely to young children, older children (Winsler and Naglieri, 2003), adolescents and even adults (Duncan and Cheyne, 2001) use private speech during problem solving or other activities. Egocentric speech never disappears completely, adults sometimes think aloud during a difficult task and to direct their actions (Mohseni, 2017).

Private speech is related to the psychological characteristics and individual abilities. Private speech, with the help of mental imagery, helps children to do creative and innovative work that does not reproduce past experiences, but these experiences are presented in a new way (Sharp, 2004). Previous studies have survived these variables separately but in this study the relation between these variables has been studied simultaneously. The current study intended to find the answer for the following hypothesis and answering these question that is there any differences between the average English grades of monolingual students and the average grades of bilingual students. And is there a significant relationship between the quality of private speech and bilingualism in learning English?

## 2. Methodology

The method of this study was descriptive and is a causal-comparative. The statistical population of the present study was the girls and boys of primary school children in Kermanshah who have been studying in elementary schools during the school year of 1391-92. Their total number is 62101 (32223 girls and 29878 boys).

The sample was selected by multistage cluster sampling among all students of public schools in elementary school in Kermanshah. The unit was the district selection stage, the second stage school choice unit. Out of the three districts of Kermanshah one district was selected and one of the 100 schools in this district was chosen. 20 schools were selected. Finally, 267 students were selected based on the English language check list, 6 of subjects were excluded from the final analysis due to incomplete information and 261 students (124 girls and 157 boys) were selected as the final sample.

In this research three tools were used for collecting the data. First: questionnaires and interviews for gathering demography information. Second: Puzzles, for evoking private speech and at last a checklist for determining the ability of English knowledge.

Questionnaires and interviews. Personal information (age, date of birth, place of birth, bilingualism, etc.), medical history and information about parents (bilingualism, place of birth) through questionnaires and referring to the children's Pre-schools files were collected. Through interviewing the authorities of the school and the parents, it became more confident to in order to determine whether children were bilingual or monolingual.

Puzzles. The present study aims to stimulate and investigate the quantity and quality of speech in a 15-piece (a kind of intellectual game in which the child should put together different pieces of an image on a cardboard background) used. Nofarsti, Hamid-Pour and Drogar (2010) confirmed the effectiveness of this assignment in a study compared to two other cognitive tasks. Validity and reliability of this assignment have been studied in various studies. For example, Kohlberg, Yeager and Hyeltholm (1968) has confirmed the effectiveness of this kind of puzzles in provoking and examining the quantity and quality of speech rate. Daugherty, White and Manning (1994) have calculated Reliability Index 60 /0for these junkies and their validity is acceptable. Also, Ghassemi and Shahraray (1998) have obtained a reasonable reliability and validity coefficient for these assignments (Nafrosti, Hamid-Pour and Drogar, 2010). Other scholars have also used this method in the field of private speech research, including Chiue and Alexander (2000), Winkler; Diaz (2009), (Jameson; Pedersen, 1993 Fernyhough,, 2008; quoted by Winsler, Fernyhough; Montero, 2009).

English Language Checklists. A checklist was used to measure the English language learning, based on reference books for teaching English to children and preschoolers. After selecting the sample group based on the English language check list, using a questionnaire and interview with the students and teachers and parents of the school and referring to the students' records of the monolinguality or bilingually of the students was obtained. After the students' private speech was evoked and recorded, the private speeches of each student were placed in one of the unrelated categories 1-solving speech2-Task relevant speech, non-facilitative3- Coping/ reinforcing speech. 4 - task- irrelevant speech

## 3. Findings

In the answer to the first question, is there a difference between the average English grades of monolingual students and the average grades of bilingual students?

**Table 1.** T-test results: Comparison of the average English grades of monolingual students and the average grades of bilingual students

Statistical Index	N	Mean	SD	T	DF	Sig
groups						
Monolingual	152	86/94	9/54	1/23	279	0/218
Bilingual	129	88/37	9/78			

**Commentary:** As shown in Table 1, independent t-test results are presented for comparing the mean English grade marks of monolingual students and the average English grades of bilingual students. Based on the results of the above table, the value of t calculated (1.23), with a degree of freedom of 279, is not meaningful, which means that the average English grade marks of monolingual students (86.94) and the mean English grades of bilingual students (37/88), don't have significant difference ( $p < 0.05$ ). In response to the second question of the study that was there a difference between the mean scores of English in students with different private speech? ANOVA test was used; whose statistical indices are available in Table 2.

**Table2.** Analysis of variance (ANOVA) for comparing the average English grades of students with different forms of private speech

Sources	SS	MS	DF	F	sig
Between group	2356/13	785/78	3	9/14	0/00
Within group	960335/198	960335/198	1		
Total	2182371/0		282		

**Commentary:** As shown in Table 2, ANOVA was used to compare the English grades of students with different forms of private speech. The results of the test show that the calculated f value (9.49) for the private speech effect with the significance level is  $p < 0.05$  and the degree of freedom 3 is significant. The results of Sheffe's follow-up test for pairwise comparisons showed that the meaning of the existing difference relates to the difference between solving private speech with other types of private speech.

#### 4. Discussion

In answering to question one, it was found that there was no significant difference between monolingual students in comparison with bilingual students in term of learning English. This conclusion is consistent with the results of the researches that indicate that there is no significant difference between mental performance, cognitive abilities and intelligence in bilingual and monolingual individuals such as Vaezzi, Zoulfaheghari Ardchi and Rahimi (2012); Parsa, Kiani and Azad Farsani (2003).

This result is due to other results of studies, including the results of the research of Bialystok (2001), Karmi-Nouri, Moniri and Nilsson (2003); Bialystok (2007); Karmi-Nouri, Shajai, Moniri, Gholami, Moradi, Akbari-Zardkhaneh and Nilsson (2008); Bialystok and Craik (2010); (Fattahi, 1993; Mehrjou, 1993; Khosro, 1996; Hossipian, 1999; Mirasmaeili, 2001; quoted by Assare, 2008); Parsa, Kiani and Azad Farsani (2013); Rahmani Zadeh (1999); Ahmadi, Mahmoudi, Saleh and Karimanpour (2014); Payne and Lynn (2011); Sattari (1999); Zia Hussein (1998); Hossipian (1999), Shivery (1999); Baker (1988); Heredia, Altariba and Cieslicka (2016). It is not consistent with the destructive effects of bilingualism on cognitive factors and language disorders.

On the other hand, this result is consistent with the results of research on bilingual enhancement and its impact on cognitive functions such as cognitive control, selective attention (Bialystok, 2007), divergent thinking skills (Konaka, 1997), problem solving (Stephens, 1997); critical thinking and clinical problem solving (Gunning, 1981); and cognitive flexibility in the ability to perform oral and spatial problems (Benzeev, 1977), critical thinking and manners (Raymond et al., 2002), Tweeter Rhodes, Michele, Corbett, Andrea, Sanze, Torrent, Turnsole and Novick (2016), Sinus (2008), Melhorn (2007), Binna (2009) and Grainger and Pavlenko (2015); cognitive skills development (Ahmadimehr, 1998); (barahani, 1992), memory abilities, (Karmi-Nouri, Moniri and Nilsson, 2003); (Karmi-Nouri, Shajai, Moniri, Gholami,

Moradi, Akbari-Zardkhaneh and Nilsson 2008) and critical thought,(Marofi and Mohammadnia, 2013) has not been consistent.

Probably the type of bilingualism, the fluency and skill of people in the second language and the enrichment of the environment and the opportunities provided for the second language are among the factors influencing the positive or negative effects of bilingualism .Kohnert (2010) has named three types of bilingualism, including simultaneous bilingual, sequential, and bilingual education. In simultaneous bilingualism, bilingual experience begins shortly after birth and when family members or caregivers speak different languages. At the same time, the simultaneous learning of learner learning is influenced by the duration and compression of the use of each language.

Simultaneous bilingualism, if the inputs and meaningful opportunities persist, can become proficient spokespersons in both languages. In bilingualism, in most cases, the first language (home language) is considered as the language of minority and second language as the majority language. In official bilingualism, the official language of the country is different from the first language of the person, and he has to learn a second language for education. In Iran, which has many ethnic minorities with many linguistic forms, the dominant method of bilingualism is through formal education (Fayyazi Barjini, 2010). According to Kohnert's view (2010), each of these methods of Bilingualism, along with other environmental variables, cannot weaken or enhance language learning and has different cognitive effects.

Raymond (2002) considers the discrepancies between recent findings on bilingual communication and cognitive skills with older findings due to methodological problems such as disagreement with bilingual definitions, difficulty in determining bilingualism, inability to control correlated variables with intelligence such as age, gender, socioeconomic status and education level, the inequality of samples in older research in assessing language proficiency and using non-standard tests. Another factor that may have been less considered in this research is the time and scope of bilingualism. Possibly, the negative effects of bilingualism on lower ages and courses where bilingual children still do not have enough skills in the second language are more likely to be older than the ages and courses (SaadatiShamir, Kayamanesh, kadivar and Hamidi, 2010).

According to the results of Table 2, there was a significant relationship between private speech and English language score. The higher English grade score of students with "solving private speech" can indicate a higher ability of cognitive and metacognitive processing in children with a higher English language score. Considering the nature of the "solving private speech" indicates that this kind of private speech has a more meta-cognitive nature. Children through their own private speeches first monitor their performance and then provide appropriate strategies. Detecting the position of the assignment, identifying the requirements of the assignment, focusing and paying attention to it, defining the exact problem and establishing a criterion for finding a solution, is a meta-cognitive skill that manifests itself in the child's private speech (Ghassemi & Shahraray, 1998). In other words, it seems that children who use more solving private speech have more meta-cognitive abilities. Students who have a higher English language score, because of their strong self-confidence, self-concept and self-assertive and self-awareness, while doing cognitive assignments, are aware of their abilities and emphasizes these abilities and values them in their private speech.

The most important aspect of meta-cognitive knowledge is to enable the learner to be aware of the process of his learning and how to progress his work and determine both his strengths and weaknesses (Seif, 2016). On the other hand, there is a positive relationship between learning performance in English and metacognition (Salehi and Farzad, 2003). In another explanation, private speech is a vital gateway to understanding how language intermediates and directs thought processes (Lantolf, Thorne; poehner, 2015). In terms of learning English, private speech either with the help of the first language or with the help of the target language facilitates interaction with the second language in relation to the needs of personal learning (for example, studying for exam preparation) (Lee, 2008).

Concerning the result obtained in the second question of the research on the quality of private speech and language learning, a research that directly deals with this issue was not found, but in relation to the quality of private speech and the cognitive characteristics, the result of this research was in line with the results of Lee's research (2008) and Swain, Kinnear and Steinman (2015).

In addition, the result of this study was based on the results of Ghassemi and shahrari's (1998) research on the relationship between private speech and creativity, as well as the results of research (Behrad, Rosengerin and Perlmutter 1992; Bwevins and Berk, 1990 Fernyhough and Fradley, 2005; Winsler, Diaz and Montero (1997) and Daugherty, White and Manning (1994), in the same direction. But with the results of the research, Nofarsti, Hamid-Pour and Drogar (2010) are not in the same direction.

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