




*Research Paper*

## Comparison of flexibility, emotional creativity and cognitive creativity in monolingual Persian-speaking and bilingual Arabic-Persian-speaking students

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### Abstract

**Aim:** The present study was conducted to compare flexibility, emotional creativity and cognitive creativity in monolingual Persian-speaking and bilingual Arabic-Persian-speaking students. The study methodology was causal-comparative. The statistical population consisted of all the monolingual Persian-speaking and bilingual Arabic-Persian-speaking students in Ahvaz, Iran. Multi-stage cluster sampling was used to select the study samples, including 80 junior high school students (40 bilingual and 40 monolingual students). The Cognitive Flexibility Inventory (CFI) developed by Dennis and Vander Wal (2010), the Abedi-Schumacher Creativity Test (ACT) (1984) and the Emotional Creativity Inventory (ECI) by Averill (1999) were used to collect the data. An ANOVA was used to analyze the data. The results showed a significant difference between the bilingual and monolingual students in terms of the mean cognitive flexibility, emotional creativity and cognitive creativity ( $P < 0.001$ ). In other words, bilingual students possessed higher levels of cognitive flexibility, emotional creativity and cognitive creativity than the monolingual students.

**Keywords:** *Flexibility, Monolingualism, Creativity, Students, Bilingualism*

## **Introduction**

Bilingualism is a global phenomenon that can be observed in most countries, since about 50% of the world's population is bilingual or multilingual. Bilingualism refers to the regular use of two languages, and bilinguals are people who need to use two languages in their daily life at home and at school (Hartsuiker, Costa, and Finkbeiner, 2008). There is little consensus among experts on the consequences of bilingualism for cognitive development, social adaptability, and academic achievement among students. Some studies have argued that bilingualism has detrimental effects on cognitive factors (Maroufi and Mohammadnia, 2013). Bilingualism is a multidimensional phenomenon and various factors contribute to its emergence, which means that it might itself affect many cognitive processes too. The general interest in the study of the cognitive abilities and function of the human brain has attracted researchers' attention to phenomena such as bilingualism, given the close link between language and cognition. Recent studies have demonstrated some differences between bilinguals and monolinguals in different areas (Calvo and Bialystok, 2014). Cognitive flexibility and creativity are among the cognitive domains that may be affected by bilingualism. Comparing the cognitive factors and functions of bilingual and monolingual students with each other can help plan more effective education strategies for bilinguals (Golshani, 2019). Nonetheless, disagreement about whether the consequences of bilingualism are positive or negative, the contradictory research findings on the role of bilingualism in creativity, the gap in literature on the effects of bilingualism on cognitive functions and creativity among students and also the theoretical and practical significance of bilingualism make research on this subject crucial. The present study seeks to answer the question of whether there is a significant difference between monolingual and bilingual students in terms of cognitive flexibility, emotional creativity and cognitive creativity.

## **Methodology**

This study has a causal-comparative or ex post facto methodology. The statistical population of the research consisted of all the junior high school students in Ahvaz (2340 bilingual Arabic-Persian-speaking students and 3245 monolingual Persian-speaking students) in the academic year 2019-2020. A sample of 80 students were selected from this population by multistage cluster sampling, including 40 monolingual and 40 bilingual students. To measure the research variables, three questionnaires were used: The Cognitive Flexibility Inventory (CFI) by Dennis and Vander Wal (2010), which has 20 items and Cronbach's alpha reliability of 0.77, the

Abedi-Schumacher Creativity Test (ACT) (1984), which has 60 items and Cronbach's alpha reliability of 0.84, and the Emotional Creativity Inventory (ECI) by Averill (1999), which has 30 items and Cronbach's alpha reliability of 0.88. The collected data were analyzed in SPSS-19 using the analysis of variance (ANOVA).

## Results

**Table 1.** The results of the ANOVA on the mean scores of the research variables in the two groups

Variable	Index	SS	DF	MS	F	Sig
<b>Flexibility</b>	Perceived controllability	239.14	1	239.14	86.86	0.001
	Perceived multiple alternative explanations	152.52	1	152.52	71.42	0.001
	Perceived alternative solutions	283.65	1	283.65	125.35	0.001
<b>Emotional Creativity</b>	Preparedness or emotional disposition	55.92	1	55.92	72.74	0.001
	Effectiveness/authenticity	57.26	1	57.26	74.18	0.001
<b>Cognitive Creativity</b>	Novelty	68.33	1	68.33	85.86	0.00
	Fluency	275.11	1	275.11	182.20	0.001
	Elaboration	248.99	1	248.99	201.49	0.001
	Originality	246.13	1	246.13	193.87	0.001
	Flexibility	214.94	1	214.94	165.73	0.001

As shown in Table 1, there was a significant difference between the bilingual and monolingual students in terms of cognitive flexibility, cognitive creativity, and emotional creativity ( $P < 0.001$ ).

## Discussion and conclusion

The results showed that bilingual students have higher cognitive flexibility, emotional creativity, and cognitive creativity than monolingual students. Nazari et al. (2012) earlier showed that bilingual children have significantly fewer total number of errors, perseverative errors and reduced number of stages than monolingual children. The cognitive structure of bilingualism and the cultural linguistic structure of Arabic appear to have had a positive role in the cognitive flexibility of the examined bilingual children. Furthermore, these results can be explained by noting that bilingualism, proficiency and skills in the second language and the richness of the environment and the opportunities provided by the second language are among the facilitators of creativity in bilingual students. A limitation of the

present study was that it was conducted only on a sample of students in Ahvaz; therefore, the generalization of the results to students in other cities of Iran should be carried out with caution. Similar studies are recommended to be conducted in other parts of Iran to reach a better conclusion on the subject.

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