

THE IMPACT OF BILINGUALITY ON THE LEARNING OF ENGLISH VOCABULARY AS A FOREIGN LANGUAGE (L3)

Mohammad Hossein Keshavarz¹
Teacher Training University (Tehran, Iran)
Hamideh Astaneh
Khatam University (Tehran, Iran)

1. Introduction

The ability to speak two languages is often seen as something of a remarkable achievement, particularly in the English-speaking countries. Since 70% of the earth's population is thought to be bilingual or multilingual (Trask, 1999), there is good reason to believe that bilingualism is the norm for the majority of people in the world.

With regard to the advantages and disadvantages of bilingualism or multilingualism different views have been expressed by researchers in the field. Most of the earlier studies suggested that bilingualism was associated with negative consequences (see, for example, Printer & Keller, 1922; Saer, 1923; Anastasi & Cordova, 1953; Darcy, 1953). These studies supported the idea that bilingual children suffered from academic retardation, had a lower IQ and were socially maladjusted as compared with monolingual children.

Contrary to these claims, some research studies in the 1970s and 1980s demonstrated that bilingualism positively influences the child's cognitive and social development (Feldman & Shen, 1971; Ianco-Worall, 1972; Cummins, 1976; Ben-Zeev, 1977; Segalowitz, 1977; Diaz, 1985; Bialystock, 1986). These studies indicated that bilinguals have a more enhanced awareness of the arbitrary relationship between words and their referents and superior metalinguistic skills. Viewing bilinguality in the framework of metalinguistic awareness, Segalowitz (1977) suggests that the internalization of two languages rather than one will result in amore complex, better-equipped mental calculus enabling the child to alternate between two systems of rules in the manipulation of symbols. Further, Bialystock (1986) hypothesized that bilingual

¹ Mohammad Hossein Keshavarz, Ph.D. Professor and Chair, Department of Foreign Languages, Teacher Training University, Tehran, Iran; P.O. Box 15815-1649 Tehran, Iran; tel.: 464-4440; email: mhkeshavarz@yahoo.com

children have an advantage over monolinguals in their control of the linguistic processing needed for metalinguistic problems.

Many researchers have also found that bilingualism has a positive effect on foreign language achievement (Lerea & Laporta, 1971; Cummins, 1979; Eisenstein, 1980; Ringbom, 1985; Thomas, 1988; Valencia & Cenoz, 1992; Zobl, 1993; Klein, 1995; Sanz, 2000; Hoffman, 2001). Eisenstein (1980), for instance, found that childhood bilinguality had a positive effect on adult aptitude for learning a foreign language. That is, those who learned a second language during childhood would have a greater success in learning foreign languages as adults. Thomas (1988) also compared the acquisition of college French by English monolinguals and English-Spanish bilinguals. Her study yielded striking differences between the two groups, with the bilinguals outperforming the monolinguals. She concluded:

Bilinguals learning a third language seem to have developed a sensitivity to language as a system which helps them perform better on those activities usually associated with formal language learning than monolinguals learning a foreign language for the first time. (p. 240)

Mixing results of studies on the consequences of bilinguality caused some scholars to conduct experiments with more controlled variables. The findings of some of these studies led to a neutral attitude toward bilingualism. In their studies, Lambert & Tucker (1972) and Barik & Swain (1978) examined the performance of larger samples controlled for sex and age, and found no significant difference between monolinguals and bilinguals in terms of their intelligence, mental development and school achievements. More recently, Nayak *et al.* (1990), comparing the acquisition of an artificial grammar by monolingual, bilingual and multilingual students, reported that although the multilinguals showed superior performance under certain conditions, they generally showed “no clear evidence that they were superior in language learning abilities” (p. 221). Magiste (1984) reported an investigation by Balke-Aurell & Lindbad (1982) on the differences between monolingual and bilingual immigrants of varied L1s with Swedish as L2 in learning English as a foreign language. The results showed no difference between the bilinguals and monolinguals in standardized tests of English comprehension and grammar performance.

One of the most fundamental assumptions underlying the efficiency of bilingual instruction is that *skills and knowledge learned in L1 transfer to L2* (Goldman, Reyes & Varnhagen, 1984; Malakoff, 1988). Thus, a child learning about velocity in Spanish,

for example, should be able to transfer this knowledge to English without having to relearn the concepts, as long as the relevant vocabulary (in L2) is available. Having the content knowledge already available in L1 seems to greatly facilitate the learning of the appropriate vocabulary items in L2.

The notion of transfer of skills is supported by research in cognitive science where attempts are made to look for representational schemas for complex narratives in two languages. For example, Goldman, Reyes and Varnhagen (1984) showed that bilingual children employ similar comprehension strategies when listening to Aesop's fables in two languages, providing indirect evidence that higher-order cognitive processes manifest themselves regardless of the specific language. Malakoff (1988) also found similarity in performance on analogical reasoning in French-English bilingual children in Switzerland. Additionally, research on adult bilingual memory for lists of words suggests that the particular language of presentation of specific words can be remembered under some conditions, but that in general, the content transcends language (Hamers & Blanc, 1989). In essence, in the act of learning concepts and skills, people form a schema that is independent of the specific language of presentation, even though the act of learning can involve active recruitment of the language to regulate thinking.

Given that skills do transfer across languages, it is possible to think about transfer as occurring on a specific, skill-by-skill componential basis, or, more globally, where the entire structure of skills in a domain transfers as a whole.

With regard to vocabulary learning, most words in both first and second languages are probably learned incidentally, through extensive reading and listening (Nagy, Herman, & Anderson, 1985). Several recent studies have confirmed that incidental L2 vocabulary learning through reading does occur (Day, Omura, & Hiramatsu, 1991; Knight, 1994; Hulstijn, Hollander & Greidanus, 1996; Chun & Plass, 1996; Zimmerman, 1997).

While incidental learning of vocabulary may eventually account for a good majority of advanced learners' vocabulary, intentional learning through instruction also significantly contributes to vocabulary development (Nation, 1990; Paribakht & Wesche, 1996; Zimmerman, 1997). Explicit instruction is particularly essential for beginning students whose lack of vocabulary limits their reading ability.

Knowing approximately 3,000 high frequency and general academic words is significant because this amount covers a high percentage of the words on an average page. The 2,000 high frequency words in West's (1953) General Service List cover 87% of an average non-academic text and 80% of an average academic text (Nation, 1990). For second language learners entering university, Laufer (1992) found that knowing a minimum of about 3,000 words was required for effective reading at the university level, whereas knowing 5,000 words indicated likely academic success. One way to estimate vocabulary size is to use Nation's (1990) Vocabulary Levels Test or a checklist test which requires learners to mark the words on a list that they believe they know (Read, 1988; Meara, 1992, 1996).

In the present study, the relationship between bilinguality of second language learners and their vocabulary achievement in the target language will be investigated. Therefore, the following null hypothesis is formulated:

Null Hypothesis: The bilinguality of the subjects has no impact on their performance in English vocabulary.

Most previous bilingual studies (see the references above) have concentrated on European languages. The significance of the present study lies in the fact that it involves three non-European languages namely Armenian, Azari Turkish, and Persian (Farsi) and investigates the effect of these languages on the learning of English as a foreign language. Therefore, it is hoped to be of interest to researchers in the field.

2. Method

2.1. Participants

Three groups of female students at three different pre-university centers, (30 students in each group) participated in this study: Group A (Turkish-Persian bilinguals) who were studying only one language (Persian) academically in Tabriz (a Turkish-speaking city in Iran); Group B (Armenian-Persian bilinguals) who were studying both languages academically in Tehran, and Group C (Persian monolinguals). The subjects in Groups A and B were consecutive bilinguals as they learned Persian after having acquired Azari Turkish and Armenian, respectively, as their mother tongue. Subjects in Groups B and C were studying in Tehran. The subjects were chosen from among female students on two grounds: (a) sufficient number of male students were not available to

the researchers, and (b) it was decided to control sex as a variable. The bilingual subjects were chosen from among those whose both parents, according to the information elicited from a background questionnaire, were bilingual and spoke the two languages at home. The participants in all three groups were homogeneous in terms of the socioeducational context: socioeconomic level, type of school attended by each of the three groups, methodology used at school, number of hours devoted to the teaching of English, and the age of participants. It needs to be added that the educational system in Iran is centralized; therefore, the textbooks and methodology for teaching English as a foreign language are the same nationwide.

2.2. Instrumentation

The instrument used in this study to measure the vocabulary achievement of the subjects was a Controlled Productive Ability Test at 2000 and 3000 word levels called CPAT. This test format was used previously in an examination of lexical richness in writing (Laufer & Nation, 1999). The main idea behind the Vocabulary Levels Test (Nation, 1990) is that it is useful to view the vocabulary of English (and indeed any language) as consisting of a series of levels based on frequency of occurrence, and productive vocabulary implies degrees of knowledge.

Thirty-six controlled productive items of 2000 and 3000 words level (18 items for each level), which had already been administered by Laufer and Nation (1999), were used in the present study. For each item, a meaningful sentence context was presented and the first letters of the target item were provided (see the Appendix). The first letters prevent the test-takers from filling in another word which would be semantically appropriate in the given context, but which comes from a different frequency level. The number of letters for each word was decided on by the elimination of possible alternatives to the tested word. The scoring system for the vocabulary test was in terms of correct/incorrect for each item. Minor spelling mistakes were not marked as incorrect.

2.3. Results and discussion

In order to test the hypothesis, a valid test of 2000 and 3000 word levels with 36 items (18 for each level) was selected. The test was administered to the 90 EFL subjects. The results were, then, submitted to statistical analysis to find out whether the

learners' bilinguality has an impact on their vocabulary achievement in the target language. The comparison of the means of the three groups was done through multiple t-tests. As Table 1 shows, the two bilingual groups did significantly better than the Persian monolingual group. Therefore, the null hypothesis stating that the bilinguality of the subjects has no impact on their performance in English vocabulary can safely be rejected.

Table 1
Multiple t-tests for the performance of groups on the vocabulary test

Groups	Mean	SD	N	Comparisons	t-obs.	T-crit	DF
Turkish	16.61	2.38	30				
Armenian	17.61	3.45	30				
Persian	14.25	3.89	30				
				Turk.vs. Per.*	2.8344	2.021	58
				Arm. vs. Per.*	3.5394	2.021	58
				Turk. vs. Arm.	1.3068	2.021	58

P< .05

Key: Turk= Turkish

Per = Persian

Arm= Armenian

A descriptive statistics was, then, employed to investigate the performance of the three groups on the vocabulary sub-tests, that is 2000 and 3000 word levels. As Table 2 displays, all three groups performed better on 2000 word-level vocabulary than on the 3000 word level. This may be attributed to the fact that words in the 3000-level are more difficult than those in the 2000-word level. As Table 2 shows, the two bilingual groups did better than the Persian monolingual group in both vocabulary sub-tests; however, the Armenian-Persian bilingual subjects performed better than the Turkish-Persian bilinguals. This may be due to the fact that Armenian subjects have learned their L1 and L2 both academically and orally; whereas, the Turkish students have learned their L1 only orally in a naturalistic setting.

Table 2
Descriptive statistics for the performance of groups on the vocabulary sub-test

Group	Vocabulary Sub-tests	Mean	SD	Variance	Minimum Score	Maximum Score	N
Turkish	Voc. 2000	10.10	2.41	5.82	5.00	15.00	30
	Voc. 3000	6.07	2.24	5.03	3.00	12.00	30
Armenian	Voc. 2000	10.77	3.51	12.32	5.00	18.00	30
	Voc. 3000	6.37	3.01	9.07	2.00	12.00	30
Persian	Voc. 2000	8.74	4.00	16.00	2.00	16.00	30
	Voc. 3000	5.13	3.08	9.50	1.00	14.00	30

3. Conclusions

Results of the data analyses showed that the subjects' bilinguality has a positive effect on third language vocabulary acquisition. Thus, the null hypothesis stating that bilinguality has no impact on the performance of the subjects in vocabulary was rejected. The result supports the finding of other bilingual studies which have demonstrated that bilingualism results in more efficient foreign language learning (cf. Lerea & Laporta, 1971; Cummins, 1979; Eisenstein, 1980; Ringbom, 1985; Thomas, 1988; Valencia & Cenoz, 1992; Zobl, 1993; Klein, 1995; Sanz, 2000; Hoffman, 2001). However, Armenian students who had learned L1 and L2 (Armenian and Persian) both academically and orally were more successful than Turkish subjects who had learned their L1 only orally in a naturalistic setting. This finding is in line with Thomas's (1988) claim that those bilinguals who possess literacy skills in L1 and L2 perform better in the kind of tests that require manipulation of language. This study has theoretical and practical implications for the field of language teaching. It provides a basis for improving the quality of practices in the teaching of first, second, and third languages' vocabulary.

The results showed that bilingualism has a more positive effect on third language's vocabulary achievement when the first two languages are taught formally, as in the case of Armenian and Persian bilinguals. Therefore, it is suggested that Turkish should also be introduced in formal education in Iran from the first years of schooling. Parents should also be encouraged to maintain bilingualism at home and encourage their children to use both languages.

The findings of the present study also have some implications for test constructors and raters. Large bilingual test corpora are urgently needed in order to evaluate and compare methods in an objective manner. Existing test databases are monolingual, mainly in English. Large-scale test databases that are truly multilingual (i.e. with texts that are strict translations of each other) are needed. It will then be necessary to elaborate a set of queries in the various languages tested as well as to find the entire relevant document for each query.

Bibliographical references

- Anastasi, A. & F. Cordova (1953). "Some effects of bilingualism upon the intelligence test performance of Puerto Rican children in New York City". *Journal of Educational Psychology* 44, 1-19.
- Balke-Aurell, G. & T. Lindbad (1982). *Immigrant students and their languages*. Gotenberg, Sweden: University of Gotenberg.
- Barik, H.C. & M. Swain (1978). "A longitudinal study of bilingual and cognitive development". *International Journal of Psychology* 11, 251-63.
- Ben-Zeev, S. (1977). "The effect of bilingualism in children from Spanish-English low economic neighborhoods on cognitive development and cognitive strategy". *Working Papers on Bilingualism* 14, 83-122.
- Bialystock, E. (1986). "Children's concept of word". *Journal of Psycholinguistic Research* 15, 13-32.
- Chun, D. & J. Plass (1996). "Effects of multimedia annotations on vocabulary acquisition". *The Modern Language Journal* 80, 183-98.
- Cummins, J. (1976). "The influence of bilingualism on cognitive growth: A synthesis of research findings and explanatory hypotheses". *Working Papers on Bilingualism* 9, 1-43.
- Cummins, J. (1979). "Linguistic interdependence and the educational development of bilingual children". *Review of Educational Research* 49, 222-51.
- Darcy, N.T. (1953). "A review of literature on the effects of bilingualism upon the measurement on intelligence". *Journal of Genetic Psychology* 82, 21-57.
- Day, R., C. Omura & M. Hiramatsu (1991). "Incidental EFL vocabulary learning and reading". *Reading in a Foreign Language* 7, 541-49.
- Diaz, R.M. (1985). "Bilingual cognitive development: Addressing three gaps in current research". *Child Development* 56, 1356-1378.
- Eisenstein, M. (1980). "Childhood bilingualism and adult language learning aptitude". *International Review of Applied Psychology* 29, 159-72.
- Feldman, C. & M. Shen (1971). "Some language-related cognitive advantages of bilingual five-year olds". *Journal of Genetic Psychology* 118, 235-44.
- Goldman, S., M. Reyes & C. Varnhagen (1984). "Understanding fables in first and second languages". *NABE Journal* 3, 35-66.
- Goodz, N. (1994). "Interactions between parents and children in bilingual families". In F. Genesee (ed.), *Educating second language children*. New York: Cambridge University Press, 61-81.
- Hamers, J. & M. Blanc (1989). *Bilinguality and bilingualism*. Cambridge: Cambridge University Press.
- Hoffman, C. (2001). "Towards a description of trilingual competence". *International Journal of Bilingualism* 5(1), 1-17.
- Hulstijn, J., M. Hollander & T. Greidanus (1996). "Incidental vocabulary learning by advanced foreign language students: The influence of marginal glosses, dictionary use, and reoccurrence of unknown words". *The Modern Language Journal* 80, 327-39.
- Ianco-Worall, A.D. (1972). "Bilingualism and cognitive development". *Child Development* 43, 1390-1400.

- Klein, E.C. (1995). "Second versus third language acquisition: Is there a difference?". *Language Learning* 45(3), 419-65.
- Knight, S. (1994). "Dictionary use while reading: The effects on comprehension and vocabulary acquisition for students of different verbal abilities". *The Modern Language Journal* 78, 285-99.
- Lambert, W.E. & G.R. Tucker (1972). *Bilingual education of children: The St. Lambert experiment*. Rowley, Mass.: Newbury House.
- Lauffer, B. (1992). "How much lexis is necessary for reading comprehension?". In P. Arnaud & H. Bejoint (eds.), *Vocabulary and applied linguistics*. London: McMillan, 126-32.
- Lauffer, B. & I.S.P. Nation (1999). "A vocabulary-size test of controlled productive ability". *Language Testing* 16(1), 33-51.
- Lerea, L. & R. Laporta (1971). "Vocabulary and pronunciation acquisition among bilinguals and monolinguals". *Language and Speech* 14, 293-300.
- Magiste, E. (1984). "Learning a third language". *Journal of Multilingual and Multicultural Development* 5, 415-21.
- Malakoff, M. (1988). "The effect of language of instruction on reasoning in bilingual children". *Applied Linguistics* 9, 17-38.
- Meara, P. (1992). *EFL vocabulary tests*. Centre for Applied Language Studies University College Swansea. (ERIC Document Reproduction Service No. ED 362 046).
- Meara, P. (1996). "The dimensions of lexical competence". In G. Brown, K. Malmkjaer & J. Williams (eds.), *Performance and competence in second language acquisition*. Cambridge: Cambridge University Press, 35-53.
- Nagy, W.E. & P. Herman & R.C. Anderson (1985). "Learning words from context". *Reading Research Quarterly* 20, 233-53.
- Nation, I.S.P. (1990). *Teaching and learning vocabulary*. New York: Newbury House.
- Nayak, H., N. Hansen, N. Krueger & B. McLaughlin (1990). "Language-learning strategies in monolingual and multilingual adults". *Language Learning* 40, 221-44.
- Paribakht, T. & M. Wesche (1996). "Enhancing vocabulary acquisition through reading: A hierarchy of text-related exercise types". *The Canadian Modern Language Review* 52, 155-78.
- Printer, R. & R. Keller (1922). "Intelligence tests for foreign children". *Journal of Educational Psychology* 13, 1-23.
- Read, J. (1988). "Measuring the vocabulary knowledge of second language learners". *RELC Journal* 19(2), 12-25.
- Ringbom, H. (1985). *Foreign language learning and bilingualism*. Turku: Abo Akademi.
- Saer, O.J. (1923). "The effect of bilingualism on intelligence". *British Journal of Psychology* 14, 25-28.
- Sanz, C. (2000). "Bilingual education enhances third language acquisition: Evidence from Catalonia". *Applied Psycholinguistics* 21(1), 23-44.

- Segalowitz, N. (1977). "Psychological perspectives on bilingual education". In B. Spolsky & R. Cooper (eds.), *Frontiers of bilingual education*. Rowley, Mass., Newbury House, 119-58.
- Thomas, J. (1988). "The role played by metalinguistic awareness in second and third language learning". *Journal of Multilingual and Multicultural Development* 9, 235-47.
- Trask, R.L. (1999). *The key concepts in language and linguistics*. New York: Routledge.
- Valencia, J.F. & J. Cenoz (1992). "The role of bilingualism in foreign language Acquisition". *Journal of Multilingual and Multicultural Development* 13(5), 433-46.
- West, M. (1953). *A general service list of English words*. London: Longman.
- Zimmerman, C.B. (1997). "Do reading and interactive vocabulary instruction make a difference?: An empirical study". *TESOL Quarterly* 31, 121-40.
- Zobl, H. (1993). "Prior linguistic knowledge and the conservation of the learning procedure: Grammaticality judgements of unilingual and multilingual learners". In S.M. Gass & L. Selinker (eds.), *Language transfer in language learning*. Amsterdam & Philadelphia: John Benjamins, 176-96.

Appendix

A sample of the Controlled Productive Ability Test Items at 2000 and 3000 words level.

The 2000-word level

1. I'm glad we had this opp.....to talk.
2. This year long sk.....are fashionable again.
3. The house was su..... by a big garden.
4. They sat down to eat even though they were not hu.....
5. The nu.....was helping the doctor in the operation room.

The 3000-word level

1. Many people are inj.....in road accident.
2. The statue is made up of mar.....
3. He was on his knees, plefor mercy.
4. I won't tell anybody. My lips are sea.....
5. Before writing the final version the student wrote several dra.....