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THE EFFECTS OF THE AGE OF ONSET ON VOCABULARY ACQUISITION IN THE SECOND LANGUAGE

Summary. Bilingualism is no longer for the elite and highly educated. It is becoming a necessity for survival in modern society. Therefore, school systems around the world are implementing mandatory foreign language programs. However, the question of the best time to start a child learning a second language is still debated. This study examined a group of early onset sequential bilinguals and a group of late onset sequential bilinguals in an EFL setting for differences in vocabulary development, keeping the length of foreign language education constant. The results of this study suggest that age of onset may not have an impact on vocabulary acquisition. However, this study was done on a small scale. A larger scale study with modifications in the measurement instruments is recommended before definitive conclusions can be made.

Keywords: bilingualism, vocabulary development, second language acquisition, EFL, children.

Introduction

Bilingualism and foreign language education

In our integrated global society, bilingualism is increasingly becoming the norm; and foreign language education – and English, in particular – is almost universally implemented in public education worldwide, often from an early age. Because some studies have suggested that early bilingualism can cause cognitive, psychological or social problems (Volterra & Taescher, 1978), concerns have been raised by parents and educators alike that early bilingual education will have negative effects. On the other hand, a growing body of research indicates that bilingualism has extensive cognitive, social and career benefits (e.g. Bialystok, 1999; Campbell & Sais, 1995), leaving parents and

educators with various decisions to make regarding the complexities of bilingualism and foreign language education.

To address this issue, researchers have focused on various features of foreign language instruction, including what should be taught and when is the best time to teach it. In this respect, one key aspect of language learning that has been the subject of considerable study is that of vocabulary acquisition (e.g., Coady & Huckin, 1997; Nation, 2001). However, researchers have not reached a consensus in relation to the effects of the age at which instruction is begun on a learner's acquisition and retention of vocabulary items. Therefore, ongoing work is needed to understand whether younger is better in terms of language learners' mastery of vocabulary.

Young learners and foreign language education in Turkey

The issues related to language instruction for young learners are of particular concern in the Turkish context in light of recent curricular reform. Along with other substantial changes to public education in Turkey, the new educational policy popularly known as the 4+4+4 program has lowered the age at which students begin compulsory instruction in English from nine years (in the fourth grade) to six years (in the second grade) (MNE, 2013). This policy was adopted as a result of research on early language education, as well as an examination of the foreign language policies of countries worldwide that implement English language instruction from an early age and that demonstrate a high learner success rate in English language proficiency.

Because this policy has been in effect only as of the current academic year, a great deal of work lies ahead to understand whether earlier instruction is having the desired effects on learning outcomes in English in terms of all of the related language skills. Accordingly, this study represents an initial attempt to understand whether early instruction in English results in increased vocabulary knowledge.

Background on bilingualism and second language vocabulary acquisition

Age of onset in bilingual studies

Many families are monolingual in the home but want their children to learn another language. After all, there is now substantial evidence that bilingualism provides a benefit to cognition (e.g., Bialystok, 2007). One of the issues being debated in language teaching is the optimal time to start a child learning another language. Some evidence suggests that students who start learning later are at a disadvantage. One study found that adult bilinguals with a later age of onset (after ten years old) did not have the cognitive gains demonstrated by early-onset bilinguals (Luk, De Sa, & Bialystok, 2011). This study also found that later-onset bilinguals had a lower proficiency in their second language (English). While this is not surprising on the face of it, the adults in the study had been learning English for ten years. It would seem that after ten years of English learning, the two groups would reach equilibrium. However, this was not the case.

Some children are exposed to two (or more) languages from birth. These children are sometimes called "simultaneous bilinguals." Those who do not learn two languages from birth are generally called "sequential bilinguals." In sequential bilinguals, those who start earlier (under age 6), are generally found to outperform adults in the long run, provided there is enough exposure (Unsworth et al., 2011). Studies like this have led to various hypotheses regarding a critical or sensitive period for second language acquisition. This idea was first discussed in the late 1960s (Lenneberg, 1967), and since that time, a debate has raged regarding this critical period hypothesis. While the exact natures of these hypotheses are still being debated, there is general agreement among researchers that certain age effects exist, particularly in the areas of pronunciation and morphosyntax. Unfortunately, there is relatively little research on sequential bilinguals, also called child second language learners. The bulk of

research compares simultaneous bilinguals with monolinguals in an ESL setting. Thus, the extent to which an early age of onset creates a condition where second language learning mirrors first language learning is not clear. In other words, the question of whether sequential bilingual children behave more like children learning a first language, simultaneous bilinguals, or adults learning a second language has not been answered. One study found that sequential bilinguals have developmental patterns similar to adult second language learners in terms of morphosyntax (Granfeldt, Schlyter, & Kihlstedt, 2007). However, in a study of code-switching, early onset sequential bilinguals behaved similarly to simultaneous bilinguals, rather than late onset second language learners (Toribio, 2001).

Vocabulary acquisition in a second language

Although vocabulary acquisition is a crucial aspect of language learning, it was not extensively studied until the early 1980s (Zimmerman, Historical trends in second language vocabulary instruction, 1997). Since that time, a wealth of research on vocabulary acquisition has been carried out. Full treatment of the topic of second language vocabulary acquisition is beyond the scope of this study (for more information. see Coady & Huckin, 1997; Nation, 2001). However, there are a few aspects of vocabulary acquisition that are important to point out.

The first aspect of vocabulary acquisition that is noteworthy is that learning a word is generally not a matter of simply memorizing a definition. Word learning is a complex activity that includes a number of cognitive abilities and includes a number of social and contextual factors; as Zimmerman (2009) argues, word knowledge is developed over time with multiple exposures. Aspects of learning a word include collocations, pronunciation, grammar, appropriateness, connotations, idiomatic usages, and morphological changes, as well as meaning. Additionally, different words are easier or harder to learn based on such factors as degree of abstractness and whether or not a direct L1

translation exists (Nation, 2001). Word frequency also plays a role, because words that are used more frequently will allow more encounters.

Another area that is important to highlight is the ongoing discussion of educational methods. One frequently debated issue is implicit acquisition versus explicit instruction. Krashen is perhaps the most well-known proponent of implicit acquisition, which is supported by his Input Hypothesis (Krashen, 1985). However, many researchers have found a benefit to direct vocabulary instruction (e.g., Laufer, 2009). Many researchers feel that the vocabulary learning process is so complicated that it is best facilitated by strategy instruction (Oxford & Scarcella, 1994; Schmitt, 1997). In practice, vocabulary is often taught in conjunction with reading and the extent to which the teacher focuses on direct instruction, strategy training, or implicit acquisition is a combination of personal decision, curriculum design, the textbook used, and institutional goals.

A third issue regarding vocabulary acquisition is various methods of measuring vocabulary. Such methods include matching tasks, cloze tests, fill-in-the-blank sentences, original sentence generation, essay analysis, and even the transcription of spontaneous speech. Regardless of the method, researchers are generally interested in measuring receptive or productive vocabulary and creating estimates of the size of the lexicon (breadth) and the depth of word knowledge (Laufer, Elder, Hill, & Congdon, 2004). Although many other aspects of vocabulary are explored in the literature, these two global issues of size and strength are the most common. For more on vocabulary assessment and evaluation, see Nation (2001) or Schmitt (2010).

This extremely brief discussion of some of the research into second language vocabulary acquisition was meant to highlight a few important issues: the fundamental nature of vocabulary acquisition to language learning, the complexity of attempting to learn it, and the difficulties involved in assessment. These issues have an enormous impact on personal and institutional decisions regarding how and when children learn languages.

Second language vocabulary acquisition among children

Age of acquisition of lexical items has been extensively studied in L1 settings, with the majority of the research carried out by experimental psychologists. The processing of lexical items can help psychologists investigate memory, dementia, the effects of aging, and the impact of certain brain injuries. One influential study rates 30,000 words according to the age they are generally acquired (Kuperman, Stadthagen-Gonzalez, & Brysbaert, 2012). Although these studies are interesting, they are only indirectly related to the topic of this current study. The paucity of research in the area of childhood second language vocabulary acquisition could be alleviated by applying the research methods of the L1 studies to L2 situations. Unfortunately, relatively few studies have been done examining vocabulary acquisition in early sequential bilingual immigrant children. The research that currently exists suggests that word frequency is related to age-of-acquisition effects. However, the order in which the words are learned, and the frequency with which the words are reinforced, seem to have more of an impact than the age of the learner (Izura & Ellis, 2002; Schwartz & Katzir, 2012).

Schooling also has an effect, as direct instruction of vocabulary items leads to acquisition of those items. In a second language context, there tends to be a relatively stable order of word introduction that is quite different from the order words appear in a first language, with high-frequency words being introduced earlier. Second language vocabulary has been said to be something of a moving target in that native speakers continue to develop, as opposed to grammar which once acquired remains stable (Cobo-Lewis, Pearson, Eiler, & Umbel, 2002). However, with effective education, the second language learners eventually more or less "catch up" (Goldberg, Paradis, & Crago, 2008).

Goldberg, et al. (2008) found a significant effect of age of onset in their study of L2 learners from a variety of backgrounds. However, their study was done in an ESL setting where English was part of the everyday environment. Similarly, the Cobo-Lewis study (2002) was conducted in an ESL context, but the children were Spanish speakers in Miami, an area where Spanish is often the

language of the environment. No studies were found that measured the impact of age-of-onset on vocabulary acquisition in an EFL setting.

Research question

In order to add to the current understanding of age of onset of instruction on vocabulary acquisition and retention, the researcher framed this study to answer the question of whether, assuming equal amounts of education and exposure to English, vocabulary development differs in terms of size and strength between early onset sequential bilinguals and later onset bilinguals. The research was carried out on a small scale as an exploratory investigation and should therefore be considered as a pilot study.

Methodology

Setting

To compare the effects of earlier-onset instruction with later-onset instruction on learners; vocabulary development, the researcher needed access to a sample with a group of learners who had begun learning a foreign language from a young age, as well as a similar group of learners who had begun learning English slightly later. Because English instruction with young learners has only been implemented for a short time in Turkey, the researcher opted to work with learners in a private school, where learners often start instruction in English from the earliest stages of education.

Therefore, the study was carried out at a private school in Istanbul. The school is a K-12 institution with an almost exclusively Turkish student body, and with a focus on developing English language abilities. Accordingly, students typically begin learning English at age five, when they start kindergarten, receiving approximately eight hours of English instruction each week throughout the school year. The children are not exposed to much English outside of the classroom; although Istanbul is a cosmopolitan city, the school is located far

from the city center in an area without many foreigners. Therefore, the English they were exposed to outside of school would mostly come from media such as television, radio, and the internet.

Participants

Prior to selecting the research sample, the researcher applied to the principal for permission to carry out the study. After the purpose and scope of the investigation were explained and ethical concerns related to the privacy and well-being of the students were addressed, the principal granted access to a small number of students. Parental permission was also obtained for their participation in the study.

Two groups of six children each were initially chosen for the study via purposive sampling in order to ensure that all of the students tested had been studying English for the same length of time. The first group consisted of six children who were eight years old and who had been studying English for three years, since the age of five. After the first group was selected, an additional student asked to take part in the study and was added to the group of eight year-olds, for a total of seven members. The second group originally included six twelve year-old children. Three of the children from this group were disqualified, two because they had more than three years of English education and one because he did not complete the assignments. As a result, the second group of participants consisted of three students who had been studying English for three years.

The eight-year-old group had all been enrolled in the same school since kindergarten. However, some of the students in the twelve-year-old group had transferred from other schools. Therefore, it should be noted that while all of the students in each group had been studying English for three years, other factors could not be controlled, such as exactly which words they had been taught, the quality of their teachers, and environmental factors.

Procedure

The participants were removed from their normal classes and given two tests on two consecutive days in the school library. The first was a test to measure the size of their receptive vocabulary. The instrument used was the Vocabulary Size Test developed by Nation and Beglar (2007). This test was chosen because it consists of multiple choice questions that are similar to those found on the participants' regular English exams. In addition, this particular test has been proven both valid and reliable and was simple enough for the children to complete without much difficulty, although it contained more items (140) than they were accustomed to seeing on their normal tests. All of the children completed the test in under forty minutes.

The second test was a measure of vocabulary depth. The instrument used was the Vocabulary Knowledge Scale or VKS (Paribakht & Wesche, 1997), which measures the depth of knowledge of specific vocabulary items by asking participants to produce sentences utilizing the target words. This test has been proven to be reliable and valid and is easy to administer. For this study, the target vocabulary were selections from the most frequent 3000 words of the British National Corpus, also called the BNC 3000 (Kilgariff, 1996). From these words, only adjectives, verbs and nouns were targeted, leaving a list of 2564 words from which every 40th word was chosen. The resulting list consisted of 64 words, including 32 nouns, 19 adjectives, and 13 verbs. Because these were common words, it was believed that they would serve as a reliable test of how well the students had learned the given vocabulary items.

The VKS establishes a rating number from one to five for each vocabulary item. The scores for the individual items were added together to create an overall depth of knowledge score. The two tests, in conjunction with each other, can provide a multidimensional estimate of the participants' lexical knowledge. The tests were scored and the results entered into SPSS for analysis using descriptive statistics and an independent samples t-test.

Results

It should be noted at the outset that such a small sample size weakens to the point of invalidation the statistical analysis. However, in this case, the analysis is being shown for illustrative purposes only in the hope that later studies can be conducted on a larger scale. The value of the current study is that it uses a simple and reproducible methodology, and it is hoped that the results, although not statistically valid, will be interesting enough to inspire similar research on a larger scale.

The independent samples t-tests comparing the two groups according to size showed no significant effect ($t(8) = .230, p = .824$) with only a small difference found in the scores for the early onset learners ($M = 3128.57, SD = 706.43$) and the late onset learners ($M = 3000, SD = 1058.3$). The results can be seen in Figure 1 below.

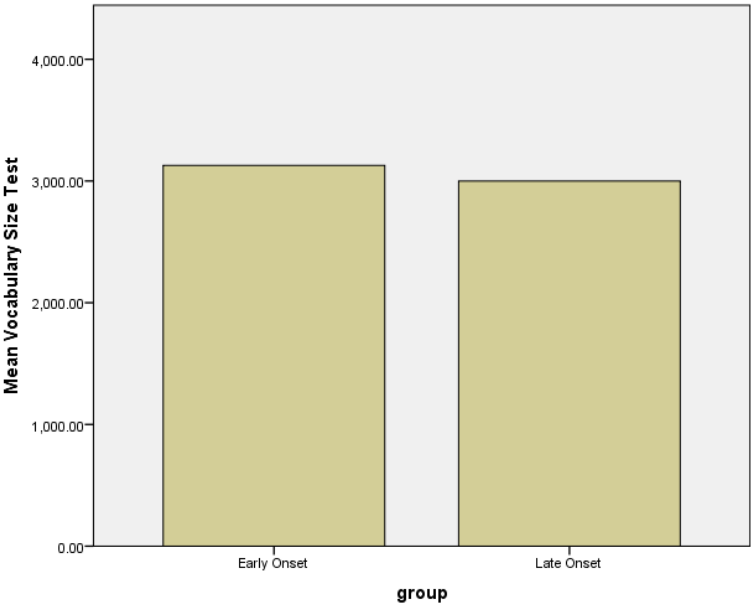


Fig. 1. Comparison of groups according to size

The comparison of depth of knowledge was also non-significant ($t(8) = -2.14$, $p = .065$) between the two groups with the early onset students ($M = 112.71$, $SD = 16.8$) scoring lower than the late onset learners ($M = 145$, $SD = 32.7$). The results are shown below in Figure 2.

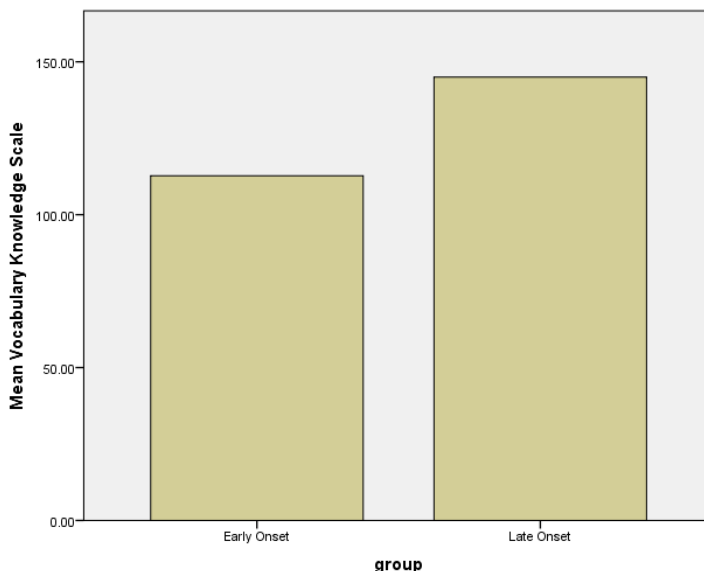


Fig. 2. Comparison of depth of vocabulary knowledge

Discussion and conclusion

The results of this study seem to suggest that the age of onset does not impact vocabulary acquisition in a significant way; the surprising finding here was that the two groups performed almost identically, with the exception of one student. This finding supports some previous studies (Izura & Ellis, 2002; Schwartz & Katzir, 2012) that found the educational environment to be a more important factor for vocabulary acquisition than age of onset. If this is the case, then starting EFL education earlier may not have appreciable impact, at least in terms

of vocabulary development, unless attention is also paid to the educational environment, including materials, facilities, and teacher quality.

This study had numerous limitations. In addition to the very small number of participants, it was done under a strict deadline with participants who may have been fatigued. In addition, while the instruments were not modified in the current study due to concerns about reliability and validity, they were intended for adults, not children. Many vocabulary studies carried out with children have used the Peabody Picture Vocabulary Test (PPVT); this may be a better instrument for subsequent studies. Likewise, in terms of measuring depth of knowledge, the VKS is the most widely used scale. However, it may be better when working with children to have them use the word in a spoken sentence and have the researcher transcribe it, rather than asking them to independently write a sentence.

In spite of the limitations, the results of the current study are interesting enough to warrant further investigation on a much larger scale with modified instruments that are more appropriate for measuring young learners' vocabulary development. Therefore, it is hoped that the findings presented here will stimulate additional study that will inform educational policy-makers, educators and parents when it comes to determining the most effective approach to developing bilingualism in young learners.

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AMŽIAUS ĮTAKA ANTROSIOS KALBOS ŽODYNO ĮSISAVINIMUI

Santrauka. Dvikalbystė jau nėra tik elito ar aukštą išsilavinimą turinčių žmonių gebėjimas. Tai tampa būtinybe norint išgyventi modernioje šiuolaikinėje visuomenėje. Dėl šios priežasties mokyklos visame pasaulyje į savo mokymo programas įtraukia užsienio kalbas kaip privalomą dalyką. Tačiau vis dar diskutuojama, kada geriausia pradėti vaiką mokyti užsienio kalbos. Šio tyrimo objektas – dvi grupės dvikalbių vaikų. Viena grupė užsienio kalbos pradėjo mokytis anksti, kita – vėlai. Buvo norima išsiaiškinti anglų kaip užsienio kalbos žodyno plėtojimo skirtumus tarp abiejų grupių, kai užsienio kalbos mokymo trukmė yra ta pati. Tyrimo rezultatai rodo, kad amžius, nuo kurio pradedama mokytis užsienio kalbos, gali neturėti įtakos tos kalbos žodyno įsisavinimui. Tačiau nereikėtų pamiršti, kad tyrimo apimtis buvo ribota. Išsamesnėms išvadoms gauti rekomenduotinas platesnės apimties tyrimas, kuriame būtų patobulinti vertinimo metodai.

Pagrindinės sąvokos: dvikalbystė, žodyno plėtojimas, antrosios kalbos įsisavinimas, anglų kalba kaip užsienio kalba, vaikai.