

Maturational Constrains and Second Language Acquisition by Iranian Second Language Learners

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Abstract

Second-language (L2) acquisition is generally thought to be constrained by maturational factors that circumscribe a critical period for native-like attainment. Consistent with the maturational view are age effects among learners who begin L2 acquisition prior to, but not after, closure of the putative critical period. Some studies indicate that native-like acquisition of a second language by learners after critical period rarely happens. Some subsequent studies do not support the critical period account of L2 acquisition constraints, however. Accordingly, this study was undertaken to investigate the impacts of maturational constraints on native-like attainment of second language accent, pronunciation, and intonation by Iranians who spent some years in English-speaking countries. The performance of 120 Iranian late and early arrivals was evaluated using a 6 point semantic differential scale. Descriptive and inferential statistics (independent sample t-test and ANOVA) were run ($p \leq .05$) to analyze the data. In keeping with other researchers, the results of the study indicate that L2 native-like attainment is constrained by the age of language learners. The results also indicate that late language learners who lived in an English-speaking country acquired near native-like proficiency whereas the late language learners who lived just in Iran were not able to acquire near native-like pronunciation. We also found modest evidence of native-like attainment among late learners.

Keywords: Second-Language Acquisition; Maturation; Age Effects; Critical Period; Native-like.

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1. Introduction

Many studies examining second language (L2) acquisition have focused on the influence of age. The age variable examined in L2 studies is usually the age of first exposure to the target L2. In studies examining immigrant populations, this is typically indexed by the participants' age of arrival (henceforth, AOA) in the host country. Previous research has suggested that AOA is apparently an important determinant of overall degree of foreign accent in the L2 (Flege, Munro, & MacKay, 1995a, Ullman, 2001:2007), as well as degree of accuracy in producing particular L2 consonants and vowels (Flege, Munro, & MacKay, 1995b; Munro, Flege, & MacKay, 1996).

In the area of second language acquisition research, the critical period hypothesis has been taken into consideration in age-related studies. It is believed that there is a period up to a certain age during which learners can acquire a second language easily and achieve native-speaker-like competence. The sensitive period hypothesis, which is used by Patkowski (1980), has sometimes been used as an alternative term to refer to the critical period hypothesis in second language acquisition, and has often been freely substituted in second language research literature. However, the critical period hypothesis has been predominantly used in first language

acquisition, whilst the sensitive period hypothesis has been generally restricted to second language acquisition.

Second language acquisition researchers differ over when the critical period/sensitive period comes to an end. In first language acquisition research, as Lenneberg (1967) posits, the critical period ends at puberty, and humans are believed to fail to acquire a first language in cases where they are unable to expose themselves to a human language before puberty, which is illustrated by Genie's case in some studies (e.g. Brown, 1968; Jones, 1995). In second language acquisition, some researchers (e.g. Birdsong, 2006) claim the cutting-off age should be at puberty or at 12 years of age, the same as in first language acquisition. However, others postulate a younger age such as the age of six (e.g. Long, 1990) or an older one such as 18 years old (e.g. Bialystok & Hakuta, 1994, 1999) as the terminal point of the critical period/ sensitive period, depending on the focal area of acquisition, i.e., whether in phonology/pronunciation (in the younger case) or morphosyntax/grammar (in the older case).

Several kinds of behavioral evidence would constitute support for a maturational view of the restrictions on L2 attainment. First, there is a significant negative correlation between linguistic performance and the age at which L2

learning begins. This effect should be observed in cases where L2 learning begins before the mid to late teens, that is, before the end of puberty (Johnson & Newport, 1989; Birdstron & Molis, 2001; Matsuoka & Smith, 2008).

Second, there should be few, if any, late learners who perform in the range of native controls; this null result would suggest biological constraints. We would, therefore, expect that critical period-type effects and near-zero evidence of native-like attainment should be observed no matter what the pairing of L1 and L2. Moreover, the popular belief among linguists and psycholinguists has been that children are far superior to adults at L2 learning. Krashen, Long, and Scarcella (1979), argue that 1) Adults proceed through early stages of syntactic and morphological development faster than children; 2) Older children acquire faster than younger children (again in early stages of syntactic and morphological development where time and exposure are held constant); and 3) Acquirers who begin natural exposure to second languages during childhood generally achieve higher second language proficiency than those beginning as adults. Krashen et al. (1979) sum up the three generalizations, tersely, as “older – is- better for rate of acquisition” and “younger-is-better in the long run” (p. 574).

However, researchers have come up with the results that do not support maturational

account (Bialystok & Hakuta 1994, 1999; Birdsong, 1992; Flege 1999), and others have found post-maturational age effects (Bongaerts, 1999; Cranshaw, 1997; Van Wuijtswinkel, 1994). And several studies (e.g., Bongaerts, 1999; Cranshaw, 1997; Flege, 1999) suggest that results are not generalizable, as the incidence of native-like attainment appears to depend on particular pairings of L1 and L2.

In spite of the fact that such controversy exists, there are many incidences which confirm the negative impacts of maturation on native-like attainment in foreign language accent and intonation. In contrast, there is an assumption that learning a foreign language in L2 context may be significantly different from learning a foreign language in L1 context.

This study is an attempt to investigate the impacts of L2 context on native-like attainment of second language accent, pronunciation, and intonation by Iranian language learners who arrived in English-speaking countries before the age of puberty and those who arrived after the age of puberty. Moreover, it also investigates whether Iranian language learners who started learning English before the age of puberty can acquire native-like pronunciation or not.

2. The Present Study

The present paper attempts to study the

maturational effects on native-like attainment in foreign language accent, pronunciation and intonation by Iranian L2 late and early beginners who spent a couple of years in English-speaking countries and those who learned language in Iran, early beginners who learned English in an English-speaking country before the age of puberty and the early beginner who learned English in Iran. To be more specific, the following research questions were raised:

- a) Does maturation constrain native-like attainment in foreign language accent, pronunciation, and intonation of Iranian language learners?
- b) Is there any significant difference between the performances of Iranian late beginners who lived in an English-speaking country and those who did not?
- c) Is there any significant difference between the performances of Iranian early language starters who lived in an English-speaking country and those who did not?
- d) Is it possible for Iranian late beginner who lived in an English-speaking country to acquire native-like pronunciation?

3. Literature Review

In order to facilitate a comparison between previous studies, both supporting and refuting

studies of the critical/sensitive period are introduced separately below. Some studies, however, have produced conflicting results regarding the (younger-the-better) position because there may be multiple critical/sensitive periods for different aspects of language. The studies with mixed results will be placed in the middle.

Johnson and Newport (1989) proposed a maturational model of L2 attainment based on just these kinds of evidence. Results of their grammaticality judgment task, administered to a group of Chinese and Korean learners of English, were in line with the first two types of evidence. That is, the results indicated that there was a negative correlation between the age of L2 learners' arrival and their linguistic performance. Also, no late beginner was able to attain native-like performance.

Moreover, the researchers stated that their results should be generalized to other L1-L2 contexts, and alluded to work in progress that supported their contention. The findings and interpretations of these researchers have been widely accepted, and the critical period account of the limits of L2 acquisition has been promoted in mainstream L2 acquisition texts (e.g., Gass & Selinker, 1994; Towell & Hawkins, 1994), in a highly regarded review of the literature on maturational effects (Long, 1990), and in popular works on language

acquisition such as Pinker (1994).

In line with Johnson and Newport, some researchers have further advanced the maturational view of constraints of attainment in the L2. These include position papers (e.g., Eubank & Gregg, 1999), evidence from brain imaging (Weber-Fox & Neville, 1999), and simulations of loss of language-learning capacity in evolutionary models (e.g., Hurford & Kirby, 1999) and in connectionist models (Marchman, 1993).

On the contrary, Johnson and Newport (1989, 1991) and Patkowski (1980) believe that child language learners are ultimately more successful L2 learners than adolescents/adults. They found that subjects who had arrived in the USA prior to the age of 7 performed on a grammar test as well as native speaking control subjects. They also believed that the decline was more gradual than sudden. Moreover, studies by Eckstrand (1978) indicated that children studying Swedish as a second language showed a clear improvement with age.

Bongaretes (1999) reports on the native-like pronunciation of some highly proficient post-puberty Dutch foreign language learners of English and French in Netherlands. A read-aloud task was used, where subjects were to read sentences and phrases which contained sounds that were predicted to be particularly

difficult for Dutch learners. The results indicated that significant proportions of these subjects passed as native speakers according to panels of native judges; in fact, they performed in the upper range of native controls. In a similar fashion, Bongaretes et al. (2000) cited in Hyltension and Abrahamson (2003) investigated the pronunciation of very successful, immersed/ naturalistic learners of Dutch as a second language. A group of subjects between the ages of 11 and 34 with a variety of L1 backgrounds were selected. Ten native controls also participated in the study. The results indicated that some subjects stood out from the general pattern, and received ratings in the lower range of native controls; in other words, they passed as native speakers.

In a rather recent study on phonology, Moyer (1999) studied the pronunciation of some late, but very advanced and highly motivated, American learners of German as a foreign language. Some native German controls also participated. Three read-aloud tasks were used (word list, sentences, and paragraphs) in addition to one free oral production task. The speech samples were then rated by four native Germans. The results of the study indicated that the native judges were able to differentiate the L2 subjects from the native subjects. That is, the L2 subjects performed distinctly below native pronunciation. Moyer also cites that there was

one student who performed within the range of native controls across all four pronunciation tasks. This individual is described as an exceptional learner who was largely self-taught and who had a strong desire to sound German.

White and Genesee (1996) point out those individuals who appear to have attained native-like proficiency frequently differ from native speakers in subtle ways. They also believe that access to UG is unaffected by starting age, and thus native-like proficiency levels in a second language is indeed attainable by adult L2 starters at least in the domains of subadjacency and the empty category principle.

The results of a few studies shed light on the ultimate attainment of very young starters. Hyltenstam (1992) concludes that the subjects who had AOAs at six or earlier were more native-like than the subjects who had AOAs at 7 or later; in other words, age of six or seven does seem to be an important period in distinguishing between near-native and native-like attainment. It is also concluded that although not all of the early learners performed within the range of native controls, an early AOA may be a necessary, though not sufficient, requirement for native-like attainment

Even-Trip (1974) found that children of older ages learned much faster than younger children for the sample in the range of four

through nine, and offered these explanations. First, older children have acquired a fairly abstract knowledge of oral language phonology. Second, they have a fuller semantic system so that they only need to discover a new symbolic representation in the L2. Third, they have more efficient memory heuristics. Fourth, they are simply smarter. The results of the study carried out by Snow, Hoefnagel and Hohle (1978) indicate that adults significantly outperformed the young language learners on syntax, morphology, and pronunciation while the studies by Eckstrand (1978) indicated that children studying Swedish as a second language showed a clear improvement with age.

Swain (1981) has compared L1 English-speaking adolescents in late French Immersion programs in Canada with younger children and found that there was no significant difference between them in reading comprehension and cloze test after about 1400 hours of immersion.

Other studies have yielded results that do not support a maturational account. For example, Bialystok and Hakuta (1994, 1999), Birdsong (1992), Flege (1999), and others have found postmaturational age effects. Studies such as Bongaerts (1999), Cranshaw (1997), and Wuijtswinkel (1994) have attested significant numbers of late learners who perform like natives on various linguistic tasks. And several studies (Bongaerts, 1999;

Cranshaw, 1997; Flege, 1999) suggest that results are not generalizable, as the incidence of native-like attainment appears to depend on particular pairings of L1 and L2. Bialystok and Miller (1999) studied the acquisition of L2 English morphosyntax by native speakers of Spanish and Chinese using items similar to those of Johnson & Newport (1989). For both groups, there was a main effect for modality of stimulus presentation (oral versus written), which is not predicted under a biologically-based account of L2 acquisition constraints. Across the range of ages of arrival tested, age and performance were negatively correlated; however, in the regression analyses there was no point of inflection that would suggest the offset of a critical period.

Further, divergences in the two learner groups' performances suggested native language effects. Flege, Yeni-Komshian, and Liu (1999) investigated end-state proficiency in English pronunciation and morphosyntax by Korean natives of varying ages of arrival in the United States. With increasing age of Arrival (AOA), there was a decline in pronunciation accuracy and performance on a 144-item subset of the Johnson & Newport (1989) stimuli. When variables confounded with AOA were factored out, pronunciation appeared susceptible to age effects, although performance in morphosyntax did not. Participants' level of education in the United

States predicted performance on rule-based areas of English morphosyntax, whereas their use of the target language correlated with performance on irregular features of English as well as with pronunciation accuracy. It is in the context of such detailed findings that we reconsider the predictions of a maturational account of L2 attainment. A potential contribution to the scientific process would be to determine if the results of Johnson and Newport 1989 (J&N89) are replicable. Partial replications of Johnson & Newport (1989) have been conducted (Bialystok & Miller, 1999; Flege, Yeni-Komshian, & Liu, 1999; Jia, 1998; Johnson, 1992; van Wuitswinkel, 1994). However, the results have generally diverged from the original. It needs to be pointed out that because of procedural differences, or due to the use of subsets or variations of the original stimuli, these findings cannot be compared directly to those of Johnson Newport (1989).

4. Materials and Methods

4.1 Participants

Our sample consisted of 120 native speakers of Persian who were selected through convenience sampling technique. The sample consisted of four equal groups. The first group consists of 30 early arrivals (age of arrival < 13) who migrated to English speaking countries along with their parents. They were

all undergraduate students of chemistry, biology, law, mathematics, mechanic and civil engineering, medicine, and petroleum. . The second group consists of 30 late Arrivals (age of arrival \geq 25) who migrated to English speaking countries for postgraduate studies. The third group consists of 30 early language learners who did not live in an English-speaking country. They were undergraduate students of the above majors. The fourth group consists of 30 late language learners who did not live in an English-speaking country. All late language learners were faculty members of Tarbiat Modares, Tehran, Shahed, Shahid Chmran, Shiraz, Yasouj, and Tarbiat Moalem universities of Iran. The length of the residence in the English-speaking countries was equal (about 5 years) for all language learners who lived in English-speaking countries. Also, all the early arrivals were students of primary schools and junior high schools at the time of living in English-speaking countries. The English-speaking countries were England, US, and Canada.

4.2 Instruments

Two different instruments were used in this study. The first instrument consisted of two reading aloud tasks and two speaking tasks. The participants were asked to perform the two read aloud tasks aloud and narrate an event in their life. Some open-ended questions were

also asked to elicit more information about the sample pronunciation, stress, and intonation. The second instrument was a semantic differential rating scale. It is a variation of a rating scale which operates by putting an adjective at one end of a scale and its opposite at the other, for example:

How do you consider pronunciation fluency of this person?

1 2 3 4 5 6

None native - - - - - Native-like

The semantic differential scale was given to two different raters to assess the participant's pronunciation, stress, and intonation. Then, the score given by each rater for each variable (pronunciation, stress, and intonation) was multiplied by 2 to convert the data into interval. Next, the scores on pronunciation, stress, and intonation were added to have a single score for each individual. Therefore, the minimum score for each person was 6 and the maximum was 36. The reliability of rating scale was estimated through inter-rater reliability estimates. The reliability index was .85 which seemed to be acceptable.

4.3 Data Analysis

Descriptive and inferential statistics were applied to analyze the data of the study. As there were four groups of participants in the

study, a one way ANOVA test was run to compare the means of different groups of participants ($p=.05$). In order to locate the sources of difference between the groups, a post hoc test (Tukey) was also run. In addition, the raters were also required to evaluate as non-native, near native, and native-like. The frequency of the individuals counted as native-like and near native was also estimated.

5. Results of Study

To rate the pronunciation, accent and intonation of the participants, a semantic differential scale was given to the raters. They gave the ratings of 1 to 6 to the participants' pronunciation, stress, and intonation. To convert the data into interval scale, the ratings of both raters were then multiplied by six. The score of each participant was the average of the two ratings given by the raters. As there were only one independent variable (four levels) and one dependent variable (Scores on pronunciation, stress, and intonation), the best statistical test was one-way ANOVA.

As one of the assumptions of ANOVA is normality of distribution, we had to run Kolmogorov – Simirnov (KS) test. The results are shown in Table 1.

Table 1: Results of KS test

Table 1 One-Sample Kolmogorov-Smirnov Test		
		scores
N		120
Normal Parameters ^{a,b}	Mean	4.0417
	Std. Deviation	1.35594
Most Extreme Differences	Absolute	.170
	Positive	.170
	Negative	-.160
Kolmogorov-Smirnov Z		1.868
Asymp. Sig. (2-tailed)		.101

One of the assumptions of ANOVA test is normal distribution of data. In order to make sure that this assumption was not violated, we used One-Sample Kolmogorov-Smirnov Test. As the results in the above table (Table 1) indicate, the hypothesis which indicates that the distribution is not normal ($\text{sig.} = .101$) is rejected and it is confirmed that the distribution was normal. Therefore, it was safe to run ANOVA test to compare the means of the groups. The results are shown in Table 2

Table 2: A One-way ANOVA Test for Comparing Means of 4 Groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4248.958	3	1416.319	134.575	.000
Within Groups	1220.833	116	10.524		
Total	5469.792	119			

The results in the above table (Table 2) indicate that there is a significant difference between the means of the groups ($F= 134.57$, $df= 3$, $Sig. = .000$). To locate the sources of differences, a post hoc test was run, and the results are shown in Table 3.

Table 3: Sources of Differences, Post-hoc Test and Results

	(I) groups	(J) groups	Mean Difference (I-J)	Std. Error	Sig.
Tukey HSD	Early LS in ESC	early LS in Iran	5.50000*	.83763	.000
		Late starters living in ESC	10.16667*	.83763	.000
		late starters in Iran	16.16667*	.83763	.000
	early LS in Iran	Late LS living in ESC	4.66667*	.83763	.000
		Late LS in Iran	10.66667*	.83763	.000
	Late LS in ESC	Late LS in Iran	6.00000*	.83763	.000

As shown in Table 3, there is a significant difference between the pronunciation, stress, and intonation scores of early language starters (henceforth, LS) who learned English in one of the English-speaking countries (henceforth, ESC) and the early language starters who just learned English in Iran (mean difference is 5.5, $Sig.= .000$). That is, the pronunciation of early language starters was more native-like than the pronunciation of early language starters who learned English in Iran. The results also indicate that the difference between early LSs in ESC and late LSs in Iran was significant (mean difference is 10.16, $Sig. = .000$). Moreover, the results show that there is a significant difference between early language starters in ESC and late starters living in ESC (mean difference is 16.16, $Sig.= .000$) significant. The mean of early LSs in ESC was 25.6 whereas the mean of early LSs in ESC was 22.

Moreover, the results indicate that there is a significant difference between the scores of early LSs who learned English in Iran and the late LSs in Iran ($sig.=.000$). Also there is a significant difference between the scores of early LSs who learned English in Iran and late language starters in ESC ($Sig. =.000$). That is, the pronunciation of early language starters was evaluated more native-like than that of the late language starters. Furthermore, the results

indicate that there was a significant difference between the pronunciation of late LSs who learned English in ESCs and those late LSs who just learned English in Iran (mean difference=6, sig.=.000).

6. Discussion

The critical period is a popular way of explaining differences between the apparent success of children and failure of adults in second language acquisition. The results of this study indicated that late second language starters whose age of arrival in L2-speaking countries exceeded critical age (13) were not able to acquire native-like pronunciation, stress, and intonation. This finding is in line with those who believe in the role of critical period hypothesis (Gass & Selinker, 1994; Towell & Hawkins, 1994; Hyltension & Abrahamsson, 2000, to name just a few). The results, however, indicated that second language learners who started second language learning in childhood (prior to the age of 10) but had no residence in L2-speaking countries were not able to acquire native-like pronunciation. That is, early second language starters with residence in L2-speaking countries were more successful than the early second language starters with no residence in L2-speaking countries.

The difference between the performances of these two groups verifies that in addition to CHP there are some other factors which

influence native-likeness in learning L2 pronunciation and suprasegmentals. Therefore, in line with Birdsong (2004), it can be said that a variety of other cognitive, task-related, attitudinal, experiential, demographic, aptitudinal, and training-related factors may affect L2 learning and moderate the impact of CPH on learning L2.

Although some of late L2 starters were able to acquire near native-like pronunciation, their mean scores on pronunciation were significantly different from the mean scores of early L2 starters who had no residence in L2-speaking countries. That is, early L2 starters were rated more native-like than late L2 starters. Such a difference verifies that, in addition to the social-cultural and educational factors mentioned above, critical period influences native-like acquisition of pronunciation. The difference between late starters with residence in L2-speaking countries and late L2 starters with no residence in L2-speaking countries also verifies that despite its influence, CPH is not the only barrier in native-like attainment. Therefore, it could be argued that the context of L2 acquisition, the length of residence in L2-speaking countries, formal and informal instruction, and the amount of exposure to L2 can significantly influence native-like attainment of L2 pronunciation, intonation, and stress patterns.

Conclusion

The main purpose of this study was to investigate the impacts of maturational constraints on Iranian language learners' native-like attainment in pronunciation, stress, and intonation. According to the results of the study it could be concluded that 1) early language starters can attain native like pronunciation, stress, and intonation much better than late language starters, and 2) late language starters who lived in English speaking countries had a better performance than those late starters learned English in Iran. That is, the context of language learning is of much significance. It could also be concluded that in addition to the age, the factors such as teachers, instructional materials, amount of exposure to language and social factors may influence native-like attainment which require further investigation. Language skills such as speaking, reading, and writing may also be influenced by age constraints and context of learning which can be good research areas.

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محدودیت های بلوغ و یادگیری زبان دوم توسط زبان آموزان ایرانی

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بلوغ، همواره بر یادگیری زبان دوم تاثیر دارد. عده‌ای از زبان شناسان کاربردی و روانشناسان معتقدند که پس از سن بلوغ که اتفاق آرا بر آن است که در سن ۱۳ سالگی رخ می دهد یادگیری زبان دوم توسط زبان آموزان همانند یادگیری زبان اول نمی باشد. همچنین پیشینه مطالعاتی نشان می دهد که یادگیری تلفظ بیش از دیگر مهارت‌های زبان تحت تاثیر محدودیت‌های سنی قرار می گیرد. با این وجود هنوز کسی به صورت جدی ارتباط بین محیط یادگیری و یادگیری گویش وران بومی را مطالعه نکرده است. این مطالعه به بررسی یادگیری زبان توسط زبان آموزان ایرانی که یادگیری زبان را قبل از سن بلوغ آغاز نموده‌اند و همچنین یادگیری زبان دوم توسط کسانی که زبان دوم را در یک کشور انگلیسی زبان فرا گرفته اند، می پردازد. برای انجام این کار ۱۲۰ نفر متشکل از چهار گروه ۳۰ نفری انتخاب شده اند. گروه اول انگلیسی آموزانی میباشند که زبان دوم را قبل از سن بلوغ در ایران فرا گرفته اند. گروه دوم انگلیسی آموزانی می باشند که زبان دوم را پس از سن بلوغ در ایران فرا گرفته اند. گروه سوم و چهارم کسانی می باشند انگلیسی را در یک کشور انگلیسی زبان به ترتیب بعد و قبل از سن بلوغ فرا گرفته اند.

داده های این تحقیق بوسیله یک آزمون مهارت گفتاری جمع آوری شده است. سپس تلفظ گویش وران توسط انگلیسی زبانان بومی ارزیابی شده است. از آزمون تحلیل واریانس جهت تحلیل داده ها استفاده شده است. نتایج نشان می دهد که بین نمره تلفظ چهار گروه تفاوت معنا دار وجود دارد. نتایج آزمون تعقیبی نشان میدهد که هر چهارگروه با هم تفاوت دارند به این معنا که زبان آموزانی که قبل از

۱. استادیار گروه زبان انگلیسی دانشکده علوم انسانی دانشگاه یاسوج

۲. استادیار گروه زبان انگلیسی دانشکده علوم انسانی دانشگاه یاسوج

سن بلوغ زبان انگلیسی را در یک کشور انگلیسی زبان آموخته اند عملکرد بهتری نسبت به کسانی که قبل از سن بلوغ زبان را در ایران فرا گرفته اند، دارند. نتایج همچنین نشان داده است که فراگیرانی که قبل از سن بلوغ انگلیسی را فرا گرفته اند عملکرد بهتری نسبت به آنهایی که پس از سن بلوغ شروع کرده اند داشته اند. لذا نتیجه گیری می شود که عوامل مربوط به بلوغ و محیط یادگیری در یادگیری تلفظ توسط زبان آموزان ایرانی دخیل می باشند. چنانکه یادگیری تلفظ به طور بسیار صحیح و همانند یادگیری زبان اول مد نظر می باشد آموزش زبان در سنین پایین توصیه می شود.

واژگان کلیدی: فراگیری زبان دوم، عوامل رشدی، بلوغ، زبان آموزان ایرانی