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The Correlations of Onset Age to Taiwanese Junior High EFL Learners' Listening and Reading Abilities

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Abstract

This study aimed to investigate the correlations of onset age of learning English to Taiwanese junior high EFL learners' listening and reading proficiencies. A total of 458 students recruited from a public junior high school in New Taipei City participated in this study. The participants were all asked to fill in a questionnaire and take GEPT tests in listening and reading. The collected data were then analyzed by using Pearson Product-Moment Correlation Coefficients. The results of this study showed that there was a significant correlation of the participants' ages of first exposure to formal English instruction to their listening test scores (r=-.133, p<.01). However, no significant correlation was found between the age factor and the learners' reading test scores (r=-.043, p>.05). The findings suggested that onset age played a role in the listening area of foreign language acquisition but not in the reading area.

Keywords: CPH, onset age, age factor, listening, reading

Introduction

The English proficiency of college students in Taiwan has often been criticized because most of the students still have difficulties using the language to conduct a simple daily conversation with native English speakers even though they have studied it for at least six years before entering university. In addition, compared to EFL students in other countries who have studied English for roughly the same amount of time, they frequently do not perform well on standardized tests such as TOEFL. The Taiwanese government, hence, started to reform its policies for English education several years ago in the hope that its students were able to reach a certain level of English proficiency. For example, elementary schools in Taipei City were authorized to design their own English courses as an extracurricular program in 1993. English at that time was taught two hours per week, and twenty-two percent of the public schools provided this type of program (Shih, 2001). Moreover, in order to improve the English proficiency of Taiwan's next generation, the Committee of Education Reform of the Executive Yuan proposed in 2003 that the Ministry of Education (MOE) should add in the primary curriculum the ability to understand basic English conversation and to write the English alphabet as a requirement for all elementary school students in the country (Ho, 2011). On September 19, 2011, the MOE even announced that the third graders in elementary schools who could not pass the 26-English-alphabet test were required to receive the Differentiated Instruction Program beginning from September, 2012 (MOE, 2011). By this time, the onset age of exposure to formal English instruction for Taiwanese EFL learners had been decreased from 12/13 to 9/10.

As a matter of fact, years before English courses were officially offered in Taiwan's primary schools, many schools in urban areas had taken the initiative of having their students learn English from the first or the third grade on. Furthermore, Taiwanese parents who could afford it have, for a long time, been known to send their children to private language schools at a very early age. Why do schools and parents in Taiwan insist that their students and children learn English so early? The reason can be attributed to the fact that they, as well as many language scholars and policymakers, deeply believe that the earlier children start to learn a foreign language, the better their language proficiency will be.

The idea of *earlier is better* in the field of language acquisition originated from the Critical Period Hypothesis (CPH), which was first proposed by the Montreal neurologist Wilder Penfield and co-author Lamar Roberts in a 1959 book entitled *Speech and Brain Mechanisms*. Their CPH version claimed that the plasticity of human brain determined whether or not language acquisition was complete. The hypothesis was then made famous and popular by Eric Lenneberg in 1967 with his *Biological Foundations of Language.* Lenneberg (1967) examined the effects of brain changes in early life on how well a first language could be acquired. He stated that the critical period for language acquisition ends in puberty in life, and within this period of time, successful language acquisition can be achieved. If this time (i.e., the critical period) is passed, some parts of language may be acquired, but complete mastery cannot be reached, and foreign accents may stay. Nearly all case studies of abused or feral children who were not exposed to their first language until after puberty lent credence to Lenneberg's hypothesis. One piece of evidence is the case of Genie, a little girl who was a victim of lifelong child abuse. When discovered at home in Arcadia, Los Angeles at the age of thirteen, she was tied to a potty chair with a strap and was wearing diapers. What is more, she appeared to entirely have no linguistic knowledge since her father had determined her to be retarded at birth and had chosen to isolate her. Although she afterwards received formal English instruction of many years, her phonology and syntax still did not function as well as native speakers' (Curtiss, 1977). Another similar case

is Chelsea, who began to learn language in her thirties, and her grammatical ability turned out to remain inaccurate like Genie's (Curtiss, 1988). Due to the findings of these case studies, more and more language experts and educators now believe that a learner's attainment of his/her native language decreases as the age at which he/she starts to learn it increases (Hung, 2008).

After validating the crucial role of age in first language acquisition, researchers started to extrapolate the same hypothesis to second/foreign language (L2/FL) settings and attempt to determine the position it assumed in these contexts. Mixed results, however, have been found. In the field of phonology, Thompson (1991) replicated Oyama's (1976) study by exploring the role of age of arrival (AOA) in the foreign accent of thirty-six Russian immigrants in the United States. The immigrants were divided into two age groups, the early arrivals (AOA$\leqq$10) and the late arrivals (AOA$\geqq$10). They were asked to record three types of speech: one was a constructed sentence, another was a prose passage, and the other was a casual conversation about their daily routine. The three speech samples were rated for their authenticity by two groups of native speakers: an inexperienced group which consisted of 8 college-educated native speakers of English, and an experienced group which was composed of 8 college-educated native speakers of English with fluency in at least one foreign language and who either had lived in other non-English speaking countries or had taken language courses. The outcome of the study indicated that the Russian immigrants who arrived in the U.S. before the age of 10 had a better chance of acquiring a native-like English accent than those who arrived after the age of 10. Flege, Mackay, and Meador (1999) researched the perceptual and productive accuracy of English vowels by seventy-two highly experienced native Italian speakers of English, who were further separated into four subgroups based on their AOA in Canada and the amount of their Italian use. A categorical discrimination test and an intelligibility test were utilized to assess all the participants' English vowel perception and production. The findings of the research suggested that the later in life the native Italian participants started learning English, the less accurately they could perceive and produce English vowels. In addition, Hung (2008) examined the correlations of onset age of learning English to Taiwanese EFL learners' proficiency in perceiving four English vowels (/I/, /iy/, /ɛ/, and /ey/). A total of 104 freshmen from a private university in northern Taiwan were selected to participate in the experiment. Their accuracy in recognizing the tested vowels and language learning background were respectively evaluated and collected by a listening test and a questionnaire designed by the researcher. The study discovered that early exposure to formal English instruction corresponded to more accurate perception of the English vowels, particularly the high front vowels (/I/ and /iy/). In contrast to the research results above, a study by Wang and Kuhl (2003) assessed the perception of four Chinese tones by four different English-speaking age groups after a two-week training program. All the experimental participants were required to take a pre-test and post-test before and after the training program on the tones. In the tests, the stimuli were presented in four blocks, with each tone being the target tone for one block. The order of the tone block presentation was counterbalanced across listeners. The statistics of the project revealed that the younger participants received lower scores than the older ones on both the pre-test and post-test. Moreover, Nikolov (2000) investigated how many highly advanced late L2/FL learners would be mistaken for native speakers. The research consisted of two experiments: one was to measure the pronunciation of twenty speakers of different native languages who learned Hungarian as a L2; the other one was to test the pronunciation of thirteen Hungarians who learned English as a FL. These two experiments were performed via the same structured interview that required the participants to talk about their language learning experience, describe an/a embarrassing/happy moment in their life, and read

out an authentic passage. The researcher of the study concluded that the strong version of Lenneberg's CPH was not supported based on the outcome that a certain number of participants had been often or generally mistaken for native speakers in both experiments. Other research studies such as Baker and Trofimovich (2006), Bongaerts, Mennen, and Slik (2000), Tsukada, Birdsong, Bialystok, Mack, Sung, and Flege (2005) focused on the same linguistic aspect (i.e., phonology) and also had contrasting findings.

In the area of morphosyntax, Johnson and Newport (1989) looked into the relationship between AOA and forty-six native Chinese and Korean speakers' proficiency in English syntax. The participants were split into two groups—the early arrivals, who arrived in the United States before the age of 15, and the late arrivals, who arrived after 17. They were all evaluated on several aspects of English grammar via a 276-item English grammaticality judgment test. The results of the test showed a clear and strong advantage for the early arrivals over the late ones. By contrast, Slavoff and Johnson (1995) rated the grammatical competence in English of 107 nonnative English children by means of a grammaticality judgment task. These young participants spoke various Asian languages (that were typologically different from English) as their mother tongue such as Mandarin Chinese, Japanese, Vietnamese, and Korean. The study declared no significant correlations of AOA to the children's scores on the test. Bialystok (1997) reported an experiment in which thirty-one native Chinese speakers' grammatical knowledge of English was measured. The participants were divided into two groups on the basis of their AOA in Canada. The learners in the early group began learning English before the age of 15, and the ones in the late group began after 15. All the participants were asked to judge the acceptability of 160 English sentences based on six structures. The statistical data of this experiment indicated no relationship between AOA and the learners' performance on the grammaticality judgment task. Furthermore, Montrul and Slabakova (2003) inquired into the acquisition of the morphological and semantic properties of Spanish aspectual tenses that were normally very difficult for Spanish learners by highly proficient English learners of Spanish as a foreign language. The participants of this study all started to learn Spanish after attending high school (i.e., their onset age≧12). They were separated into three levels—the lowest level being 17 near-native learners, the intermediate level being 23 superior learners, and the highest level being 24 advanced learners. Two linguistic tasks were employed to test the learners' grammatical ability in Spanish: one sentence-conjunction task and one truth-value judgment task. The results displayed that 19 out of the 64 FL participants performed within the range of 20 native control speakers on both tasks. The researchers of the study contended that a native-like command of the Spanish aspectual system did not decay with age.

With respect to general language skills, Kuo (2001) explored the role of age of starting to learn English in the reading and listening proficiencies of more than 800 Taiwanese university EFL learners. The 1999 National Joint College Entrance Exam (NJCEE) for English achievement and an English placement exam designed by a prestigious private university in Taiwan were used to evaluate the participants' reading and listening abilities respectively. The students were split into three age groups: 3rd grade group, 5th grade group, and 7th grade group. The dissertation found that on the listening test, the 3rd grade group obtained higher scores than the 5th grade group, which in turn scored higher than the 7th grade group. Regarding the results of the reading test, although the 3rd group excelled the 5th group, no significant difference was found between the 5th group and the 7th group. Cao Fenfu (曹逢甫), Wu Youxi (吳又熙), and Xie Yanlong (謝燕隆) (1994) investigated whether or not early start in learning English would

influence Taiwanese EFL students' English language proficiency. The experimental group of the project consisted of twenty-nine 7th graders who had received bilingual education for 3 years. Their proficiencies in English listening, speaking, grammar, and reading were compared with the proficiencies of a control group with thirty-two 10th graders who had also learned English for roughly the same amount of time. The results of the tests showed that the 7th graders did better only on the listening and speaking tests. In terms of their grammar and reading abilities, these early learners did not have any advantage over the 10th graders. Chou (1989) researched the impact of beginning formal English instruction before entering junior high school on Taiwanese EFL learners' later English achievement. A total of 1260 10th graders from 25 senior high schools in northern, central, and southern Taiwan were recruited to take part in this experiment. The researcher discovered that the students who started learning English before entering junior high school outscored the ones who began their learning after entering junior high school on the listening test. Early English learning, however, had no significant effects on the participants' reading and writing proficiencies. Additionally, Cenoz (2003) conducted a study to understand whether age was closely related to the rate of English acquisition by 135 Spanish-Basque speakers who learned English as a third language. The participants of this research began their exposure to English instruction at the ages of 4, 8 and 11 respectively but received the same number of hours of instruction (i.e., 600 hours). After all the test scores and questionnaires were collected and analyzed, the outcome revealed that the older learners outperformed the younger learners in most of the measures of proficiency.

A close examination of past literature on the role of AOA/age in L2/FL acquisition above brings out two phenomena that motivated the researchers of the current study to run this experiment. First of all, from the conflicting and mixed research findings stated earlier, there are pros for and cons against the claims of the CPH. Thus, the influence that age exerts on L2/FL acquisition seems to be still equivocal no matter whether the examined area is phonology (Baker & Trofimovich, 2006; Bongaerts et al., 2000; Flege et al., 1999; Hung, 2008; Nikolov, 2000; Thompson, 1991; Tsukada et al., 2005; Wang & Kuhl, 2003), morphosyntax (Bialystok, 1997; Johnson & Newport, 1989; Montrul & Slabakova, 2003; Slavoff & Johnson, 1995) or general language skills (Cao et al., 1994; Cenoz, 2003; Chou, 1989; Kuo, 2001). Second, the literature review also implies that if there is really an age effect on FL acquisition of four general skills, it constrains the listening domain more than the reading domain. However, this argument requires more valid and reliable research results to be affirmed due to the fact that some of these studies such as Kuo (2001) did not use trustworthy instruments (i.e., standardized tests) to collect data. In addition, the participants in Cao et al. (1994) and Chou (1989) were senior high school students, and the ones in Kuo (2001) were university students. Younger FL learners like junior high school students or elementary school students were not recruited in these studies to get a comprehensive picture of the role of age. In consequence, based on the preceding reasons and to bridge the research gap, the present study aimed to re-examine the correlations of onset age of exposure to formal English instruction to EFL students' listening and reading proficiencies via standardized tests, and the research sample was primarily selected from Taiwanese junior high school students. The following are the two research questions that this study sought to answer:

1. Does the age of first exposure to formal English instruction correlate with Taiwanese junior high EFL learners' listening proficiency, as measured by a standardized GEPT listening test?
2. Does the age of first exposure to formal English instruction correlate with Taiwanese junior high EFL learners' reading proficiency, as measured by a standardized GEPT reading test?

Methodology

Participants

The experimental sample of this study originally consisted of 522 seventh and eighth-grade students in a public junior high school in New Taipei City. Owing to the fact that the current research investigated the relationship between Taiwanese EFL learners' onset age of learning English and their English listening and reading proficiencies, it only included students who had been learning English in Taiwan. Based on the results of the instruments employed in this research, three students who had taken the GEPT standardized listening and reading tests, five students who had lived abroad for more than one year, five students who spoke English at home, and fifty-one students who did not complete either the tests or the questionnaire were all excluded from this project. After the 64 students were removed, the data of the remaining 458 students (M=245; F=213; their onset ages of receiving formal English instruction ranged from 3 to 11) from 16 classes (7 classes in the seventh grade and 9 classes in the eighth grade) in the public junior high school was used and analyzed to answer the research questions of this study.

Instrumentation

This research was a quantitative study. Three measures were utilized to collect data: a standardized GEPT listening test, a standardized GEPT reading test, and a questionnaire. The full name of the GEPT is the General English Proficiency Test. It is a test of English language proficiency that was commissioned by the Ministry of Education in Taiwan in 1999. This standardized test was developed by the Language Training and Testing Center (LTTC) in Taipei and was first carried out in 2002. There are four levels of the test that are currently administered: elementary, intermediate, high-intermediate, and advanced. Each of the levels is administered in a two-stage process. At the first stage, all examinees need to take a listening and reading comprehension test. Only those who pass this stage are allowed to move on to the second stage, the speaking and writing portions of the test.

After the researchers of the current study considered the English level of the participants and the relevant suggestions from the GEPT developer (i.e., LTTC) about the use of the test, an elementary-level test was chosen as the chief measuring tool. However, as stated before, this research aimed to investigate the relationship between onset age and Taiwanese EFL learners' listening and reading abilities. Thus, only the listening and reading parts of the test were finally adopted. The adopted standardized GEPT listening test was to rate the Taiwanese junior high EFL participants' listening ability, particularly in understanding English questions, getting the main idea of the utterance or conversation, and giving appropriate responses. It was downloaded from the GEPT website after the researchers of this project informed the LTTC and obtained the permission of the copyright. There were totally thirty questions, and they constituted three sections. Each section had ten items. In Section One, the students could see ten pictures, and a question was asked based on each picture. Along with the question, the participants would also hear three choices of answer to that question. They then had to choose the best answer that corresponded to the picture presented for each question. The questions and the choices were not written out on their test sheets. Section Two consisted of ten items. For each item, the testees needed to listen to a short question which was not written out, and each question was spoken twice. The students then had to read three written-out choices of answer and choose the most proper one that best responded to the question. In Section Three, ten questions were designed to test the learners' comprehension of English short dialogues. After hearing each dialogue, they were asked a question about the content of the conversation, followed by selecting the most

suitable cue out of the three provided on their test sheets. The dialogues and questions were repeated twice and were not printed on their test sheets. All the thirty questions must be finished within twenty minutes.

With reference to the adopted standardized GEPT reading test, it aimed to evaluate the junior high EFL learners' reading comprehension. The measure was downloaded from the GEPT website as well. In total, there were thirty-five questions, and they were divided into three parts. In Part One, sentences were constructed to examine the students' vocabulary ability and their concept of syntactic structures. From Items 1 to 15, there was one blank in each tested sentence, and right below the tested sentence were four choices of answer. The participants needed to choose the most appropriate answer which made the sentence meaningful and grammatical. Part Two was a cloze test made up of two written passages, and each passage had five separate words removed (Items 16 to 25). The examinees had to fill in each blank by choosing a correct answer to reconstruct the passages. This part tested the learners' skills in making right grammaticality judgments and word associations. Part Three assessed the learners' ability in getting main ideas of different types of writing genre (Items 26 to 35). The students were required to read the four passages and answer the questions on the basis of the content or implication of each passage. All the thirty-five questions must be completed within thirty-five minutes.

Regarding the questionnaire, it was devised to collect the participants' language learning background. It included the following information: the students' name (Item 1), class and number (Item 2), gender (Item 3), the age at which they started to learn English (Item 4), whether or not they took the same tests before (Item 5), whether or not they had lived abroad for more than one year (Item 6), whether or not they used English to communicate at home (Item 7), the average hours per week they spent learning English (at and outside school) before entering junior high school and the total length of the learning (in years) (Item 8), the average hours per week they spent learning English at junior high school (at and outside school) and the total length of the learning (in years) (Item 9), and their experience of having been taught by a native English speaker (Item 10). The questionnaire administered to the learners was written in Mandarin Chinese to assure their maximum understanding of the content. It was distributed to the participants after they took the standardized GEPT listening and reading tests.

Procedure

The GEPT standardized listening and reading tests and the questionnaire were all conducted in quiet, noise-free classrooms at the school where the participants studied. The participants were evaluated on a class basis. Before starting to carry out the three tasks, they were informed of the purpose of the study and instructed on how to answer the test questions and fill out the questionnaire. When the tasks were actually exercised, they were performed over a period of two hours. In the first class hour, the students were required to finish the reading test within thirty-five minutes. The listening test plus the questionnaire were then completed within twenty-five minutes during the second class hour. After all the measures were executed, the learners' test scores were calculated and organized on Excel along with their language background for further statistical analysis.

Data Analysis

To answer the two research questions of the present study (i.e., does onset age of receiving formal English instruction significantly correlate with Taiwanese junior high EFL learners' listening and reading abilities?), two Pearson Product-Moment Correlation tests were utilized to

analyze the collected data, and the software program for conducting the analysis was Statistical Package for the Social Science (SPSS) version 13.0.

Results

Table 1 represents the correlations of the 458 Taiwanese junior high EFL learners' ages of first exposure to formal English instruction to their scores on the GEPT listening and reading tests. The statistics of the Pearson Product-Moment Correlation tests showed that there was a significant negative correlation between the students' onset ages and their listening scores (r=-.133, p<.01); however, no significant correlation was found between the age variable and the learners' reading scores (r=-.043, p>.05). The results suggested that the earlier the Taiwanese EFL participants began to receive formal English instruction, the better their listening proficiency was (i.e., the participants' listening proficiency increased as their starting age of learning English decreased). This tendency unfortunately did not extend to the relationship between the students' onset age and their reading proficiency. As a result, it seemed that onset age only assumed a position in these EFL learners' listening ability but not in their reading ability.

Table 1. ***The correlations of Taiwanese junior high EFL learners' onset age to their scores on the GEPT listening and reading tests***

		Onset Age	GEPT Listening Score	GEPT Reading Score
Onset Age	Pearson Correlation	1	-.133(**)	-.043
	Sig. (2-tailed)		**.004**	**.356**
	N	458	458	458

** p < .01

Discussion and Conclusion

As stated in the section of Introduction, many studies have been done to explore the effects of age on L2/FL acquisition. Some of these studies focused on the phonological domain (Baker & Trofimovich, 2006; Bongaerts et al., 2000; Flege et al., 1999; Hung, 2008; Nikolov, 2000; Thompson, 1991; Tsukada et al., 2005; Wang & Kuhl, 2003), some on the morphosyntactic aspect (Bialystok, 1997; Johnson & Newport, 1989; Montrul & Slabakova, 2003; Slavoff & Johnson, 1995), and others on general language skills (Cao et al., 1994; Cenoz, 2003; Chou, 1989; Kuo, 2001). However, conflicting and contrasting results have been found in terms of supporting or disproving the claims of Lenneberg's CPH. For those that mainly investigated the role of onset age of learning English in EFL learners' ultimate listening and reading proficiencies, despite their findings that age exerted significantly more influence on the learners' listening ability than their reading ability (Cao et al., 1994; Chou, 1989; Kuo, 2001), the instruments utilized in some of these studies were, in fact, not very accurate in obtaining reliable results. Moreover, the samples examined in these studies were not comprehensive. Younger learners such as junior high school students and primary school students were not included. These two reasons thus motivated the researchers of the current project to re-analyze the relationship between onset age and EFL learners' listening and reading skills by using

standardized tests and recruiting Taiwanese junior high school students as participants.

The statistical data of two Pearson Product-Moment Correlation tests revealed that the younger the EFL participants started to learn English, the better their listening comprehension was. Yet, the students' reading proficiency did not increase as their onset age decreased. This finding was in harmony with what Cao et al. (1994), Chou (1989), and Kuo (2001) discovered. Hence, it can be concluded that age appeared to be a critical determinant in the acquisition of English listening ability rather than of English reading ability in the FL context like Taiwan.

Since the current study along with other similar studies have validated that the acquisition of English reading proficiency does not seem to have anything to do with the age at which EFL learners began their exposure to the target language, what on earth might be the key variable(s) that affect(s) the acquisition? In answering this question, Cheung (2006) could provide some clues. He researched the effects of several factors on Taiwanese university EFL students' listening and reading abilities and concluded that the total amount of time the learners spent learning English contributed most to their learning outcome. The importance of the factor (i.e., total time of learning) in the acquisition of English reading proficiency in the FL setting can also be affirmed via a further examination of the test scores and language learning background of the participants in the present research. Based on these data, the researchers discovered that quite a few learners who scored high on the GEPT reading test tended to have received relatively more hours of instruction (in total). In contrast, many of those who did not perform well on the test were inclined to have received relatively less hours.

In addition to the variable of total time of learning, the discrepancy between the design of the test content and the type of training the EFL participants had received at school might be another factor that affected the results of this study. From the test scores of the learners, the researchers of the current experiment detected that a relatively high percentage of the students did not perform well on Part III of the reading test. This outcome could be attributed to or explained by the English teaching practice that pervades in the traditional language classroom in Taiwan.

In regular English classes at school or cram school in Taiwan, teachers usually spend most of the class time teaching new vocabulary and introducing various grammatical rules as well as sentence structures. The focus of the instruction is always on a single word or sentence itself. When sentences are put together to form bigger chunks of speech to evaluate learners' ability in summing up key points like Part III on the reading test, the learners frequently get lost or stuck in the paragraphs. As a result, what has been taught in EFL classrooms in Taiwan is apparently out of accord with what the section of the test actually assesses. It is this variance that might have led to the poor performance of those participants on the test section, and their poor performance implied that they still lacked the ability to read lengthy texts and from which, to draw main ideas.

From the discussion above, several educational implications can be made. First, to enhance EFL students' listening comprehension, it is better for them to start exposure to the target language early. Second, in the light of increasing the students' reading ability, they need to immerse themselves in the language as long as they can. Furthermore, their language teachers should change part of their teaching focus to helping them cultivate the habit of perusing lengthy articles and develop the capability of capturing key points from what they have read.

On top of the ones just brought up, there are other variables that might have influence on EFL learners' acquisition of listening and/or reading skills, according to the findings of other studies. For instance, Gilakjani and Ahmadi (2011) reviewed some previous literature on factors that might affect EFL learners' listening comprehension. They concluded that developing

learners' intercultural awareness and application of listening strategies both assumed a role in EFL learners' ultimate attainment of listening proficiency. Additionally, Chou (1989) asserted that the EFL participants' learning motivation and parental occupation were two of the main factors that affected both their listening and reading proficiencies. Consequently, to understand the complete picture of what primarily results in the success of FL acquisition (particularly of listening and reading abilities), future research studies should include and examine these variables that were left out in this project plus those that have not been mentioned so far but were also of importance such as learners' learning style, aptitude, cognition, and teachers' teaching methods and the like. Hopefully, by doing so, language educators, experts, and even policy makers in the FL context can know more about the role of these factors, followed by creating the most appropriate curriculum and initiating new English educational reforms to ease and hasten learners' learning.

With respect to other limitations and delimitations of this study, three can be put forward. First, although this study was conducted in quiet, noise-free normal classrooms, the results of the experiment might still have been affected by some external factors like classroom temperature and the quality of the equipment that was used to play the listening stimuli. Consequently, for those who are interested in replicating this research and would like to gain more reliable test data, it is advised that a language laboratory be used. Second, the 458 seventh-grade and eighth-grade students of this study were selected only from a single junior high school in New Taipei City. The outcome might not be generalized to the learners of other schools. Therefore, it is best for future researchers to recruit participants from different schools as well as from different parts of the nation and the world. Third, the present project only focused on EFL learners' listening and reading abilities. Their speaking and writing proficiencies were not investigated. To have a better understanding of the relationship between the same issue (i.e., onset age) and the learners' overall language competence, these two basic skills should also be included in the inquiries that follow.

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