



Effects of Explicit and Implicit Instruction on Phonological Awareness, Prosodic Feature, and Individual Differences by Korean Elementary School Students*

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ABSTRACT

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The purpose of this study is to investigate the effects of explicit and implicit instruction on Korean elementary school students' phonological awareness (Ventakagiri and Levis 2007), prosodic feature (Trofimovich and Baker 2006), and individual differences (Huang and Jun 2011). Fifty Korean young learners were divided into two groups, explicit instruction group and implicit instruction group, and they were instructed to read English words and sentences explicitly and implicitly during a seven-week treatment period. They read aloud declarative sentences in an elicited imitation task (Trofimovich and Baker 2006). From the recorded data, phonological awareness was measured by structures of phonology. Prosodic feature, i.e., speech rate was analyzed using *Praat* (De Jong and Wempe 2009). The results showed that the explicit instruction group significantly correlated with phonological awareness and speech rate positively. However, the implicit instruction group did not reveal progress in phonological awareness and they also noted problems regarding speech rate. These findings offer pedagogical implications of the importance of explicit instruction in L2 learning with young EFL learners.

KEYWORDS

explicit instruction, implicit instruction, phonological awareness, prosodic feature, speech rate, individual differences

1. Introduction

Phonological awareness has primarily focused on the contributions of segmental production such as consonants, vowels, and phonemes in language speech (Goswami and Bryant 1990, Munro and Derwing 2008). Phonological awareness was defined that “phonological awareness, the ability to recognize and manipulate the sound segments in words, is one of the most important predictors in language speech” (Whally and Hansen 2006) and recent research on phonological awareness has established the development of L2 speech, particularly prosody, which is speech rate, rhythm, stress patterns, and tempo of a language (Flege and Hillenbrand 1986, Goswami and Bryant 1990, Munro and Derwing 2008). Despite the importance of phonological awareness and prosody of communicative functions in L2 language areas, second language pronunciation studies of these two areas were less extensively investigated. Few studies have explored how prosody contributes to phonological awareness and individual differences in L2 language speech (Holliman et al. 2010, Wood 2006). It is crucial to investigate the link between phonological awareness and prosody for EFL learners including their individual differences, such as in L2 speech production. To attain this objective, the effect of phonological awareness, prosodic features, and individual differences (Huang and Jun 2011) was examined in the present study. With reference to L2 speech, the foreign accent is also an important factor as crucial evidence for the successful attainment of L2 speech. The effects of foreign accent in L2 speech has been investigated largely in the production of prosody (Flege et al. 1999, Moyer 2015). Therefore, the foreign accent is a key measurement in the current L2 speech research (Munro and Derwing 2011).

The importance of phonological awareness was established in L2 speech production (Gussenhoven and Jacob 2017) and the role of prosodic production has also been found to be significant, however, fewer prosody studies have focused on L2 learning (Dewing et al. 2009, Munro and Derwing 1995). A direct link between prosodic production and phonological awareness has been observed in young learners’ speech production (Goswami 2010) and Wood et al. (2009) suggested that prosody was able to facilitate phonological awareness in terms of rhyme and phoneme awareness. Cutler and Carter (1987) identified young learners could recognize prosodic patterns such as stress patterns and segmental words in L2 speech production. One approach to analyze L2 phonological awareness learning is to determine the role of learners’ variables, prosody in terms of L2 fluency.

The prosodic factors that researchers have found to be important include speech rate (Munro and Derwing 2001), pause (Anderson-Hsieh and Venkatagiri 1994), peak alignments (Trofimovich and Baker 2006), F0 range (Wennerstrom 1994). According to Munro and Derwing (2001), temporal and spectral features were shown as durational features. Moreover, pitch accents, peak alignments, and intonation types were also temporal and spectral features and were used as a judgment of fluency in second language speech. Lennon (1990) supported that pitch range was the main factor to judge fluency and Wennerstrom (2001) also pointed out that L2 prosody was realized as listeners’ judgment of fluency. They suggested that the prosodic features were crucial factors to produce appropriate nativelikeness, such as pitch accents, peak alignments, and intonations as a form of more fluent speech production by second language learners. Trofimovich and Baker (2006) examined five prosodic features such as speech rate, stress timing, peak alignment, pause frequency, and pause durations in L2 learners’ fluency. Additionally, analyses of learner variables, i.e., age, experience, proficiency, and second language input (Huang and Jun 2011) are affected in L2 acquisition adding L2 experience (Trofimovich and Baker 2006) or L2 instruction (Missaglia 1999).

Given the evidence that phonological awareness was associated with prosody, some studies also showed the relationship between phonological awareness and prosody. Cardillo (2008) conducted a prosody test by young learners including rhythm and intonation and found variables of vocabulary breadth between phonological

awareness and prosody. Wood et al. (2009) also examined the contribution of prosody to the development of speech processing using vocabulary tasks and the results were also consistent with findings that prosody contributed to phonological awareness in vocabulary and longer patterns of sentences. Additionally, a longitudinal study on prosody with respect to phonological awareness was also conducted, and rise time as prosodic production was shown in L2 speech processing (Corriveau and Harris 2010). Compared to a number of studies on L2 pronunciation, there is little research exploring young learners' L2 speech than adult learners' L2 speech (Trofimovich and Baker 2006, 2007). The present study takes a step towards investigating how both explicit and implicit instructions have an effect on Korean elementary school learners' phonological awareness, prosodic features, and individual differences in L2 learning.

2. Literature Review

Second language acquisition research into explicit and implicit instruction has primarily targeted morphosyntactic development and has left a huge gap in research on the effects of instruction on pronunciation (Derwing and Munro 2005). Saito and Lyster (2012) took a first step toward testing how a range of explicit and implicit instruction techniques can promote the acquisition of the English sound /ɪ/ in adult Japanese learners through negotiation for meaning. Although the results showed that L2 pronunciation development can be amenable to explicit and implicit instruction, they also revealed several limitations.

Gordon et al. (2012) investigated the explicit instruction of prosody of L2 pronunciation. They indicated that explicit phonetic instruction on prosody seems to work best in a short-term experiment (Derwing et al. 1998) and the learners in the non-explicit prosody group did not improve their prosody significantly. This result showed that when explicit instruction is focusing on prosody, such as intonation, linking, stress, increases attention to this specific feature may promote pronunciation improvements in the short term. For this reason, the current study was designed to examine whether and to what degree providing explicit prosody information at the beginning of explicit and implicit lessons can enhance the generalizability and magnitude of the effects of explicit and implicit instruction based on Lyster's model (Saito and Lyster 2012) and feedback through negotiation for meaning. Explicit instruction on the acquisition of L2 pronunciation would help learners use more "native-like" pronunciation, which is directly related to prosody and segmental representations.

In the development of pronunciation instruction from the two approaches, communicative language teaching took hold with its primary purpose of language being communication. As a part of the communicative language teaching approach in pronunciation instruction, there is a comprehensive list of how to teach pronunciation. Pronunciation instruction is a central component of second language acquisition. Arteaga (2000) indicated that prosodic instruction in the L2 classroom is an essential part of improving students' comprehensive abilities. The impact that prosodic instruction has on second language listening comprehension skills, however, has not received systematic attention in reading contexts. In addition, L2 textbooks and instructional skills hugely ignore the relationship between prosody and second language listening comprehension. For example, Arteaga (2000) examined the phonetics representation of L2 speech and found that the tendency was to provide minimal production of L2 phonetics and pronunciation. In addition, an examination of more advanced textbooks in Spanish phonetics reveals that the written texts and practice exercises focus primarily on the articulation of second language speech sounds on the perception of second language speech.

As one of the metalinguistic task performances, phonological awareness is the conscious knowledge of the sounds, syllables, and prosody of the target language. White and Ranta (2002) say that "performance of

metalinguistic tasks has been found to co-vary with proficiency in the L2 and with levels of L2 aptitude.” (p. 261). Metalinguistic ability in the L2 is often promoted by classroom attention to the formal system of the L2. L2 instruction mostly involves vocabulary, syntax, and morphology, with relatively little attention to pronunciation regarding phonology (Burgess and Spencer 2000). However, it is likely that as a consequence of instruction, learners develop a variable amount of metalinguistic knowledge about pronunciation, i.e., phonological awareness.

Clearly, “metalinguistic performance involves both implicit and explicit knowledge” (White and Ranta 2002), and Schmidt (1990) noted that there was a positive correlation between phonological awareness and pronunciation ability. When L2 pronunciation instruction was given, L2 learners noticed the difference between their production of target sounds and their pronunciation listening and speaking ability. These students, over time, increased their L2 pronunciation skills reflecting implicit metalinguistic knowledge. While explicit knowledge of the language system was helpful in L2 pronunciation, there was a negative correlation between explicit knowledge and phonological awareness.

In the investigation of one of prosodic features, speech rate, Huang and Jun (2011) examined prosodic features (i.e., speech rate and articulation rate) with a sample of 30 people in the US who spoke either Mandarin as their native language. All participants read a paragraph and the duration of the paragraph was measured. Results revealed that an age-onset effect impacted various aspects of prosody, such as speech rate, the frequency of pitch accents and boundary tones, and degree of foreign prosody. Prosodic research has been found to play a significant role in facilitating learning (Jusczyk et al. 1999), helping learners in solving complex structures of syntax (Millotte et al. 2007), and obtaining high pitch range to topic shift (Wennerstrom 1998). Despite the important role played by prosodic features in L2 learning, little research focused on prosodic features. The results of previous studies showed that prosodic features were related to nativelike production in successful L2 pronunciation.

Recently, researchers investigated the relationship between individual differences (i.e., age of first exposure to English, L2 input, language aptitude, L2 experience, use of language learning strategy, and so on) and L2 pronunciation (Huang and Jun 2011). Trofimovich and Baker (2007) investigated the effect of L2 experience on L2 prosody by Korean speakers’ English utterances. All participants’ L2 experience was measured by the length of stay in the US and was associated with prosodic features, stress timing, and foreign accent rating. With reference to foreign-accented speech, L2 learners’ prosody production had a significant effect in the previous research (Flege et al. 1999, Munro and Derwing 1998, Xue and Lee 2014). However, despite the importance of foreign accents (Derwing and Munro 2015), relatively fewer studies of explicit pronunciation instruction have been investigated in L2 speech regarding foreign accents and prosody. Moreover, fewer studies of L2 speech have been investigated by L2 young learners in L2 pronunciation (Trofimovich and Baker 2006, 2007).

Due to the large variations in the selection of participants, study design, elicitation, and rating techniques, and the variables surveyed in each study, it is hard to generalize across these studies and draw any conclusions (Piske et al. 2001). Therefore, the present study surveyed a wide range of individual differences (Huang and Jun 2011), i.e., age, L2 experience regarding total years or months of education, L2 proficiency, prosodic feature, and phonological awareness in order to better investigate the contributing factor of L2 pronunciation.

The present study focused on an observed link between phonological awareness, prosodic feature, and individual differences by Korean young learners. With an overall goal of examining whether foreign accent influences individual differences (Huang and Jun 2011), the present study addresses two questions below.

- (1) Is there any difference in all learners’ foreign accent, phonological awareness, and prosodic feature between explicit instruction group and implicit instruction group?
- (2) Is there any relationship between all learners’ foreign accent and individual differences?

3. Method

3.1 Participants

The present study took place in an elementary school located in Korea. The participants in the study consisted of a total of fifty learners. Fifty-eight participants were originally involved in this study but eight were later excluded for the following reasons: participants did not complete the entire study ($n = 5$), participants who performed extremely above or below normal range scores on all tests ($n = 3$). That left a total of fifty participants for the final data analysis. As for the learner participants' level of English language proficiency, they were considered to be at the intermediate level on the basis of scores of English Performance-Based Assessment administered in the elementary school.

Intermediate-level participants were selected and they were randomly assigned to two groups. Among all fifty learners who participated in the research, the performance of fifty young learners of English in the explicit instruction group ($n = 24$) and the implicit instruction group ($n = 26$) was included in the research. Of these 50 students, 25 were female learners and 25 were male learners. The age range was fifth-grade to sixth-grade students, with an average of 12.56 years (Range: 12-13, $M = 12.56$, $SD = .5$). According to the first interview, all learners reported English language experience at public schools and language institutes in Korea except a short visit abroad (Range: 56-86, $M = 67.576$, $SD = 6.14$) and English language proficiency was an intermediate level (Range: 80.2-95.5, $M = 87.73$, $SD = 5.84$). Two groups were randomly assigned to the explicit instruction group and the implicit instruction group. Learner variables of all 50 participants were shown in detail in Table 1.

Table 1. Group Distribution

	Explicit instruction group	Implicit instruction group
<i>N</i>	24	26
Age ^a	$M = 12.5$ ($SD = .51$)	$M = 12.58$ ($SD = .5$)
Gender ^b	14F/10M	11F/15M
LE ^c	$M = 65.23$ ($SD = 8.69$)	$M = 68$ ($SD = 9.02$)
Proficiency ^d	$M = 87.48$ ($SD = 5.74$)	$M = 87.93$ ($SD = 5.88$)

Note. Age^a: Current age, Gender^b: F(female), M(male), LE^c: Language Experience (monthly basis), Proficiency^d: English performance-based assessment

In the present study, teachers were selected for instructional treatment in two groups. The two teachers co-taught all the participants. The selection of teacher participants was based on some criteria related to the degree of professionalism on teaching experience and teaching expertise with current methodological theories and practices. All tests and recordings were performed by two experienced English teachers together. The native English teacher co-taught the participants with nonnative English teachers together. A native-speaking teacher from Canada was selected based on EFL teaching experience in Korea for 5 years. One Korean teacher of English had 3 years of part-time experience teaching elementary school students with a B.A. degree in English Education. After the teachers were selected, a one-hour training session was scheduled. In the training session, the teachers were informed of two types of lesson procedures and the contents of explicit and implicit instructions. After training sessions and discussion time, the teachers were assumed to be well-prepared for a clear presentation of pronunciation explanation of the target form. All classes were co-taught by one Korean English teacher and one native English teacher together. In all the lessons, the teachers were required to follow pre-scripted lesson plans

for each group, respectively.

The current study added two extra activities in order to enhance the reliability of raters. First, in order to enhance intra-rater reliability, they were given specific instruction to make sure that prosody and segmental aspects of pronunciations were considered because variables such as their own lexico-grammatical competencies could alter the ratings (Derwing and Munro 2015). Second, in order to enhance inter-rater reliability, raters did a warm-up session together by using six example sounds randomly selected from the data set. In the session, the raters discussed what score a speech stimulus deserved and checked how the other listeners rated the same speech tokens. The whole session was divided into two days (each session took 1 hour and 30 minutes including both training and listening.) The interrater reliability was significantly high for phonological awareness ($r = .93$) and prosodic feature ($r = .85$).

3.2 Data Collection

For the explicit instruction group, the teacher began with an explicit explanation on how to produce target words at the beginning part of the lesson. In order to lead to all learners' phonological awareness and noticing of pronunciation, the teacher presented example vocabulary lists of prosody with relevant articulatory gestures pictures, and videos. The teacher then orally defined or explained the production of pronunciation scripted definitions. The learners practiced and read the vocabulary list. Three sequential phases of the explicit instruction process were conducted, i.e., presentation, practice, and production (Gordon et al. 2012).

The process of explicit instruction consists of practical training and theoretical training. The learners practiced phonetic drills, practices, and presentations and pronounced the target vocabulary list using audio-visual feedback in a practical training session. During the training, the learners were also encouraged to ask any unknown words in sentence lists. The process of implicit instruction is comprised of warm-up activities such as story-telling. The learners practiced the target vocabulary list after listening to native speakers' pronunciation of target words and focused on meanings of vocabulary only with native speakers' feedback for the rest of the lessons. All the learners read the vocabulary and sentences again and were asked to speak new vocabulary and sentences based on the target words. To sum up, to two groups, the teachers provided the same contents of explicit and implicit instruction according to the pre-determined instructional settings in Table 2.

Table 2. Roles of the Teacher in the Lessons

Lesson	Explicit instruction group	Implicit instruction group
Pretest (1 st week)	Pretest (Survey)	Pretest (Survey)
The 1 st part of the lesson (2~3 th week)	The first part of explicit instruction that was provided during learner task (Explicit instruction & explicit phonetic feedback)	The first part of implicit instruction that was provided during learner task (Implicit instruction & implicit pronunciation feedback)
Posttest1 (4 th week)	Posttest 1	Posttest 1
The 2 nd Part of the lesson (5~6 th week)	The second part of explicit instruction that was provided during learner task (Explicit instruction & feedback)	The second part of implicit instruction that was provided during learner task (Implicit instruction & feedback)
Posttest 2 (7 th week)	Posttest 2	Posttest 2

3.3 Data Analysis

In order to examine the effects of explicit and implicit instruction on phonological awareness, prosodic feature, and individual differences by Korean elementary school students, all learner's speech data were measured from a vocabulary list reading test for foreign accents first. All participants were asked to read an English passage and their recordings were evaluated by three English native speakers for foreign accent ratings, that is 9-point Likert scale (1 = very strong foreign accent, 9 = no foreign accent) and for phonological awareness based on phonological awareness skill test (Chard and Dickson 1999) and speech rate measurement (Trofimovich and Baker 2006). The participants' phonological awareness was measured based on the phonological awareness skill test (maximum score, 48) and their speech was recorded using the free speech software program, *Praat* (Speech rate was calculated by dividing the total number of syllables by total length of duration in a given sentence of the paragraph).

Independent *t*-test, paired sample *t*-test, and Pearson correlation were conducted on three tests, i.e., pretest, posttest 1, and posttest 2. Multiple regression analyses were also conducted to investigate the extent to which the dependent variable, i.e., a foreign accent of the explicit and implicit instruction in the experimental groups can be related to phonological awareness and prosodic feature (i.e., speech rate). To estimate the young learners' foreign accents, an oral paragraph reading test (Huang and Jun 2011) was carried out before the instruction took place. As described in Moyer (1999), fixed words and sentences for administering foreign accents, phonological awareness, and prosodic features were as follows. Participants were asked to read an English paragraph, which consists of sixty-nine words and four sentences containing segmental and prosodic data after familiarizing the paragraph for a minute. In contrast to natural speech, an oral paragraph reading test could produce various productions regardless of the aims of the study. However, although the test has the somewhat limitations, it also had the advantages of controlling prosody in the fixed sentences of the paragraph. Thus, the reading test was chosen to minimize the potential influences of discourse or pragmatic structures affecting performance on the oral reading task. All the learners read the paragraph and teachers recorded the learners' readings.

4. Results and Discussion

4.1 Foreign Accent, Phonological Awareness, Prosodic Feature

The first research question asked which type of instruction that is, explicit or implicit instruction leads to more effective gains on learners' foreign accent of L2 pronunciation in the posttests. Within- and between- comparisons were performed and the explicit instruction group significantly improved on L2 young learners' foreign accent more than the implicit instruction group in Table 3.

Table 3. Within-comparison in Foreign Accent Measure

Foreign accent	Explicit instruction group (n = 24)			Implicit instruction group (n = 26)		
	<i>t</i>	<i>p</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>df</i>
Pre-Post1	7.694	.0001	23	-1.995	.057	25
Pre-Post2	7.506	.0001	23	-1.69	.103	25
Post1-Post2	2.303	.03	23	-.827	.416	25

Regarding the comparative effectiveness of two types of instructions, descriptive data showed that the explicit instruction group scored higher than the implicit instruction group on any of the measures at the posttest. On the

posttest 2, the explicit instruction group still showed a clear advantage over explicit instruction in the oral paragraph reading test. However, independent samples *t*-tests indicated that the differences were found for foreign accent significantly, $t(48) = 5.491, p = .0001$ for posttest 1 gains and $t(48) = 7.615, p = .0001$ for posttest 2 gains in Table 5. As a result, the effect sizes in this study were considered to be very large both in the posttest 1 ($d = .855$), and posttest 2 gains ($d = 1.052$) on all measures.

Table 4. Independent t-test for Posttest 1 & 2 Gain Scores for Foreign Accent

Posttest 1 gains (foreign accent)							
OPRT	N	Mean (SD)	Mean difference	Std. error	<i>t</i>	<i>p</i>	<i>d</i>
Explicit	24	6.475 (2.12)	1.387	.188	5.491	.0001	.855
Implicit	26	5.077 (.92)					
Posttest 2 gains (foreign accent)							
OPRT	N	Mean (SD)	Mean difference	Std. error	<i>t</i>	<i>p</i>	<i>d</i>
Explicit	24	6.625 (2.08)	1.664	.146	7.615	.0001	1.052
Implicit	26	4.961 (.82)					

Note. $p < .05, df = 48$, explicit (explicit instruction Group); implicit (implicit instruction group); OPRT (Oral paragraph reading test)

The first research question asked which type of instructions leads to productive results on the learners' phonological awareness and prosodic feature of L2 pronunciation in the posttests. Within- and between-comparisons were conducted and explicit instruction played an important role in the production of phonological awareness and prosodic feature in Table 5. Interestingly, both groups improved on the production of prosodic feature in between pretest and posttest 1 and between pretest and posttest 2.

Table 5. Within-comparison in Phonological Awareness and Prosodic Feature Measure

Phonological awareness	Explicit instruction group (n = 24)			Implicit instruction group (n = 26)		
	<i>t</i>	<i>p</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>df</i>
Pre-Post1	-6.297	.0001	23	-.889	.189	25
Pre-Post2	-9.432	.0001	23	-1.088	.14	25
Post1-Post2	-3.088	.001	23	-.409	.341	25
Prosodic feature	Explicit instruction group (n = 24)			Implicit instruction group (n = 26)		
	<i>t</i>	<i>p</i>	<i>df</i>	<i>t</i>	<i>p</i>	<i>df</i>
Pre-Post1	2.02	.0001	23	2.61	.0001	25
Pre-Post2	2.62	.0001	23	2.25	.0001	25
Post1-Post2	1.138	.097	23	1.21	.28	25

According to the descriptive data, the explicit instruction group showed more improvement than the implicit instruction group. On the posttest 1 and 2, the explicit instruction group still showed a clear advantage over implicit instruction in the phonological awareness test. Furthermore, independent samples *t*-tests indicated that the differences were found for phonological awareness significantly, $t(48) = 7.095, p = .0001$ for posttest 1 gains and $t(48) = 10.367, p = .0001$ for posttest 2 gains in Table 6. In addition, independent samples *t*-tests also showed that the differences were found for prosodic feature significantly, $t(48) = 5.389, p = .0001$ for posttest 1 gains and $t(48) = 2.94, p = .0001$ for posttest 2 gains in Table 8 below. The effect sizes in the phonological awareness test were considered to be very large both in the posttest 1 ($d = 1.783$), and posttest 2 gains ($d = 2.559$) on all measures.

Table 6. Independent t-test for Posttest 1&2 Gain Scores

Posttest 1 gains (phonological awareness)							
PAST	N	Mean (SD)	Mean difference	Std. error	<i>t</i>	<i>p</i>	<i>d</i>
Explicit	24	42.29 (1.839)	3.25	.368	7.095	.0001	1.783
Implicit	26	39.04 (1.805)					
Posttest 2 gains (phonological awareness)							
PAST	N	Mean (SD)	Mean difference	Std. error	<i>t</i>	<i>p</i>	<i>d</i>
Explicit	24	43.92 (1.88)	4.76	.375	10.367	.0001	2.559
Implicit	26	39.16 (1.84)					

Note. *p* < .05, *df* = 48 explicit (explicit instruction Group); implicit (implicit instruction group); PAST (phonological awareness skills test)

The effect sizes in the prosodic feature were considered to be very large both in the posttest 1 (*d* = 1.532), and posttest 2 gains (*d* = .98) on all measures in Table 7 below.

Table 7. Independent t-test for Posttest 1&2 Gain Scores

Posttest 1 gains (prosodic feature)							
OPRT	N	Mean (SD)	Mean difference	Std. error	<i>t</i>	<i>p</i>	<i>d</i>
Explicit	24	4.02 (.309)	.54	.102	5.389	.0001	1.532
Implicit	26	3.47 (.403)					
Posttest 2 gains (prosodic feature)							
OPRT	N	Mean (SD)	Mean difference	Std. error	<i>t</i>	<i>p</i>	<i>d</i>
Explicit	24	4.13 (.092)	.51	.18	2.94	.0001	.98
Implicit	26	3.59 (.063)					

Note. *p* < .05, *df* = 48, explicit (explicit instruction Group); implicit (implicit instruction group); OPRT (Oral paragraph reading test)

These results imply that explicit instruction appears to be slightly better than implicit instruction at least on the initial learning of foreign accent, phonological awareness, and prosodic feature. In sum, on the basis of these findings, a clear answer to the first research question emerges. The explicit instruction group does result in greater posttests gains on learners’ foreign accent, prosodic feature, and phonological awareness compared with the implicit instruction group.

4.2 Relationship between individual differences and L2 pronunciation

The second research question explored whether there is a relationship between a foreign accent and individual differences. For this question, Pearson’s correlation analyses were performed on the data produced by fifty learners assigned to two groups. The magnitude of the Pearson correlation coefficient (*r*) determines the strength of the correlation. Although there are no hard-and-fast rules for interpreting the strength of association, some general guidelines are as follows (Cohen 1988): *r* < 0.3 is considered as a small correlation, *r* < 0.5 is considered as moderate correlation, *r* > 0.6 is considered a strong correlation. It should be also noted that elicited imitation test was excluded in this correlation analysis because it did not measure lexical knowledge but simply indicated the

degree of certainty of learners' judgment. The measurement of foreign accent has been evaluated to measure participants' pronunciation of all words in a vocabulary list. The dependent variables for means of foreign accent (Trofimovich and Baker 2007) were measured and the correlation coefficient was also measured as inter-rater reliability of participants' L2 pronunciation. The coefficient of raters was highly associated $r(2) = .91, p < .0001$. The mean scores of foreign accent ratings were obtained for two different phonological awareness levels as a within-group factor (high phonological awareness group, $M = 43.31, SD = .157$, low phonological awareness group, $M = 26.33, SD = .11$).

First, the foreign accent was associated with L2 learner variables, i.e., young learners' age of first exposure to English (Huang and Jun 2011), L2 experience, L2 proficiency, and phonological awareness. Bivariate correlation was conducted regarding the positive or negative relationship between learners' foreign accents and learner variables. The average foreign accent was measured as means and standard deviations. The ratio of the average foreign accent was used in the regression analyses. Bivariate correlation analyses examined the relationship between learners' variables and foreign accent, and the test revealed that foreign accent was correlated with age of first exposure to English, i.e., early age of first exposure to English, ($r = -.418, p = .01$) and general age of first exposure to English, ($r = .311, p = .065$) in the posttest 1 and early age of first exposure to English ($r = -.241, p = .151$) and general age of first exposure to English ($r = .373, p = .025$) in the posttest 2. The results indicated that early age of first exposure to English group produced less foreign accent pronunciation than the general age of first exposure to English group regarding foreign accent, however, the general age of first exposure to English group produced long term effect of a foreign accent than early age of first exposure to English group. Furthermore, the EP instruction group showed a strong correlation between foreign accent and age of first exposure to English, (early age of first exposure to English: $r = .748, p < .001$; general age of first exposure to English: $r = .848, p < .001$) in the posttest 1 and (early age of first exposure to English: $r = .695, p < .001$; general age of first exposure to English: $r = .860, p < .001$) in the posttest 2.

The implicit instruction group showed a negative relation, $r = -.714, p < .009$. This result indicated that the early age of first exposure to the English group made an improvement of foreign accent in the explicit instruction than implicit instruction condition regarding the effectiveness of explicit phonetic explanation to young learners of English. In addition, the explicit instruction group showed no correlation between foreign accents and L2 initial proficiency (based on EPBA) (Mid-high group: $r = .217, p = .235$; Mid group: $r = .252, p < .235$) in the posttest 1 and (Mid-high group: $r = .234, p = .271$; Mid group: $r = .152, p < .478$) in the posttest 2. Moreover, the explicit instruction group showed a correlation between foreign accent and L2 experience (long Experience group: $r = .44, p = .03$) in the posttest 1 and (long experience group: $r = .423, p = .04$) and posttest 2 only except phonological awareness. The implicit instruction group showed that learners with long L2 experience and high phonological awareness produced less foreign accent speech only in the posttest 2 long experience group: $r = -.934, p < .001$; high phonological awareness group: $r = .850, p < .001$). Thus, there was a correlation between foreign accents and individual differences, i.e., early age of first exposure to English, long experience, and high phonological awareness in L2 pronunciation.

Multiple regression analysis models were performed to examine the relationships among measurements (i.e., foreign accent) and L2 learners' variables (i.e., age of first exposure to English, L2 experience, L2 proficiency, and phonological awareness) through three models, i.e., foreign accent with an age of first exposure to English (model 1), foreign accent with L2 experience (model 2), and foreign accent with L2 proficiency (model 3) and foreign accent with phonological awareness (model 4). Table 8 presented foreign accent with learners' variables, i.e., age of first exposure to English, L2 experience, L2 proficiency, and phonological awareness. As seen by the fact that age of first exposure to English was the significant predictor statistically ($p = .001$) with other predictors.

Table 8. Summary of Multiple Regression Analyses Predicting Foreign Accent with Four Predictors

Model	Predictor	F	p	R ²
1	AFEE	11.197	.001**	.136
2	AFEE	6.309	.003**	.153
3	L2 experience	4.998	.004**	.179
	AFEE			
4	L2 experience	3.707	.009**	.183
	L2 proficiency			
	AFEE			
	Phonological awareness			

Note. *** $p < .001$, ** $p < .01$, AFEE: Age of First Exposure to English

Certainly, the age of first exposure to English was the crucial variable for predicting the foreign accent of L2 young learners, but other variables, i.e., experience, proficiency, and phonological awareness were also significant factors statistically in the regression model in Table 9. The results indicate that three measurements of L2 pronunciation (i.e., foreign accent) were correlated with individual differences (i.e., age of first exposure to English, phonological awareness, L2 proficiency, and L2 experience). Stepwise multiple regression analyses showed there was a strong relationship between the foreign accent with the age of first exposure to English.

In this study, stepwise multiple regression analyses showed an association with all four individual differences (i.e., age of first exposure to English, L2 proficiency, L2 experience, and phonological awareness). Table 10 indicated that learners' variables were included for the successful L2 pronunciation. As seen by the fact that age of first exposure to English was the most significant predictor statistically ($p = .001$) in the production of foreign accent. In addition, the foreign accent with other variables, i.e., L2 experience, L2 proficiency, and phonological awareness was also significant statistically in the regression model in Table 9.

Table 9. Multiple Regression Analysis of the Relationship between Foreign Accent and Individual Differences

Measurements	Individual differences			
	Age of first exposure to English $r(p)$	L2 proficiency $r(p)$	L2 experience $r(p)$	Phonological awareness $r(p)$
Foreign accent	.136(.001)**	.179(.004)**	.153(.003)**	.183(.009)**

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Based on the significant individual differences in L2 pronunciation studies in previous research and data analyses, multiple regression analysis was conducted to investigate the relationships between foreign accent (i.e., foreign accent) and L2 learners' variables (i.e., age of first exposure to English, L2 experience, L2 proficiency, and phonological awareness). As seen by the fact that early age of first exposure to English was the most significant predictor statistically, however other variables, i.e., L2 experience, L2 proficiency, and phonological awareness were also significant in the regression model.

5. Discussion and Conclusion

The current study investigated whether explicit and implicit instruction leads to the acquisition of L2

pronunciation in terms of phonological awareness, prosodic feature, and individual differences to compare which type of instruction (i.e., explicit instruction and implicit instruction) is more effective in learning L2 pronunciation, and to examine whether there is a relationship between learners' foreign accent and individual differences. With respect to the comparative effects of explicit and implicit instruction, both types of instruction benefit learning prosody, but explicit instruction was found to be more effective in promoting prosody. This result provides some support for earlier comparative studies (File and Adams 2010, Laufer and Rozovski-Roitblat 2011) and indicates that both instructions are beneficial, but explicit instruction tends to be more effective in L2 pronunciation learning. In fact, explicit instruction has often been criticized for not being meaning-oriented. It usually focuses on connecting L2 form with L1 meaning. This has led some researchers to suggest that intentional learning is not conducive to language acquisition and that an emphasis should be placed on learning from context (Krashen 1989).

However, in light of the results as presented here, there should also be a place for an explicit instruction approach in L2 pronunciation learning because it can be a fast and effective approach to acquiring L2 pronunciation, particularly for prosody. Similarly, Ellis (2004) suggests that connecting word form and meaning is best learned explicitly. Therefore, an important implication of this finding is that prosody instruction might be more effective than segmental instruction. Each instruction can support the other depending on the learners' or teachers' needs, their preferences of intervention types, or the complexity of target prosody. For example, teachers can provide explicit instruction in the form of brief shifts away from meaning-oriented activities when learners have difficulty perceiving unknown words that are embedded within the context.

Explicit and implicit instruction helps learners to improve their spontaneous oral production of target words and sentences, and it is also effective in facilitating the development of L2 pronunciation. Intuitively, it makes sense that explicit and implicit instruction would result in the development of explicit prosody (Norris and Ortega 2000). On the other hand, the issue of whether these two types of instruction can also benefit developing implicit learning is controversial since many L2 learners have failed to acquire L2 proficiency based on implicit learning despite years of formal study. Furthermore, little empirical research currently exists to support the effects of explicit and implicit instruction on enhancing implicit prosody in the classroom setting. However, the result obtained here suggests a positive effect of instruction, either explicit or implicit instruction, in developing implicit prosody as well as explicit one. Finally, as to the relationship between implicit and explicit instruction with individual differences, there is a substantial correlation between the two types of instruction. More interestingly, this significant correlation result was only found for the instructed groups, i.e., explicit and implicit instruction groups.

These results may indicate that the development of explicit instruction can imply that of implicit instruction, or vice versa and that explicit or implicit instruction is one of the factors that affect a positive relationship between the two types of instruction based on individual differences. One implication of the results is that although the two types of instruction exist separately, it seems that they are able to be developed together through a particular kind of instruction.

Moreover, the result reveals that the gains of implicit instruction were smaller than those of explicit instruction, indicating that the progress of implicit instruction could be slower than those of explicit instruction despite the same amount of time, input, or instruction. Age of first exposure to English, L2 experience, L2 proficiency, and phonological awareness were also beneficial factors in L2 pronunciation in explicit as well as implicit instruction. Therefore, a reasonable pedagogical implication from this result is that a certain period of time may be needed for the development of implicit instruction and that learning could be evident over time and not immediately (Ellis 2009, p.260). Teachers also need to give more importance to aspects that are more difficult to acquire, especially aspects that are related to the spontaneous use of language which is highly related to implicit instruction. Further research would benefit from instructional improvements with effective feedback, in qualifying L2 young learners'

prosody production.

For the comparative effect of explicit and implicit instruction, Pearson's correlation analyses reveal that there is a substantial correlation between gain scores for explicit and implicit instruction. That is, the learners who accumulate much explicit instruction tend to get further implicit instruction or vice versa. Interestingly, this finding is contrary to the recent study worked by Saito (2011) who report that there is a clear explanation between explicit and implicit instruction. This divergent result is not easily explicable but might be related to the influence of different research methods, that is, a different learning context, the nature of the treatment, and a test instrument for measuring implicit instruction. First, it is possible that research findings could be different in different settings. Saito (2013) study adopted a laboratory setting in which researchers can control the input learners receive and obtain highly controlled data. However, the laboratory setting does not tend to provide a richer instruction for language learning than instructed classroom setting. Therefore, the learners in Saito's (2011) study might have limited quantity and quality of opportunities for practicing target words and sentences, and this might affect a lack of observable improvement in implicit prosody production despite the learners' significant growth in explicit prosody production.

On the other hand, the current study was carried out in the natural L2 classroom setting where the learners studied target words and sentences in L2 pronunciation as part of their regular instruction with their regular teachers. The classroom setting was not as easily controlled as the laboratory but this naturalistic context might offer a much richer context for language learning. For example, students in the classroom can work together with their peers, and the teacher consistently helps students learn the target sequences during the whole lesson. More importantly, the teacher's pedagogical treatment might lead to higher levels of awareness of target words and sentences in L2 pronunciation whether the attention to form arises by pronunciation-focused activity or non-pronunciation activity. Thus, this overall pedagogical intervention in the present study might contribute to the learners' quick acquisition of target words and sentences both in terms of implicit and explicit instruction.

On the other hand, Saito (2011, 2012, 2013) designed lab-based three different input conditions (enriched, enhanced, and decontextualized) which do not seem to be rich enough to enable the participants to learn target words and sentences. This means that the conditions seem to be similar to controlled exposure but rather than a pedagogical treatment. For example, there were no teacher-led or student-led activities, and the participants had virtually no opportunity for making focus on forms association for target words and sentence learning. They were asked to just remember the combination of target forms. This different nature of treatments might be one of the factors that led to the inconsistent result. In this regard, an interesting result was found in the present study. The results of the relationship between the foreign accent and the age of first exposure to English can be explained by Huang and Jun's study (2011). They noted that early L2 young learners produced native-likeness of L2 prosody such as foreign accent, articulation rate, speech rate, and pitch accent than adolescent and adult groups. An age factor was an influential and effective factor to young learners in L2 pronunciation. The significance of L2 experience in L2 pronunciation was also supported by Trofimovich and Baker (2007). Longer L2 experience, i.e., length of residence in Canada including chronological age, were crucial factors to produce L2 speech successfully. Guion et al. (2000) also examined the age effect and length of L2 experience in L2 speech. They also concluded that there was a relationship between age and L2 experience with respect to L2 prosody. Saito (2011) added L2 prosody learning with explicit corrective feedback to L2 learners and it was effective for L2 learners to teach segmental features through explicit instruction.

In addition, phonological awareness as a predictor of individual differences in word reading in relation to L2 prosody was studied by Fraser et al. (2010). The results of the study, the awareness of phonological features, i.e., onset units and phonemes were predictive of individual differences in L2 English word reading. With respect to

L2 proficiency, Derwing and Rossiter (2003) suggested that L2 prosody cues led to L2 speech production successfully for comprehensibility. Eskenazi (1999) referred to intonation as a key component of prosody to intermediate level L2 learners of German and they produced better sentence production tasks when reading than low levels of L2 learners. These overall results indicate that L2 pronunciation is significantly correlated with individual differences.

While the significant correlation between the two types of instruction was found for the two instructed groups (explicit and implicit instruction groups), no significant effect of phonological awareness was found for the implicit instruction group. This suggests that explicit instruction may be one of the factors that affect a positive relationship in L2 pronunciation learning. This finding also lends support to the above supposition that the different nature of the treatment, that is, the presence or lack of instruction on target items may affect the correlational result of two types of pronunciation instruction.

Finally, a different measure of individual differences might be a possible explanation for the different results. While the present study used an elicited oral imitation test in order to capture prosody level, Saito (2011) employed a priming task that requires participants to indicate instantly whether a form association exists between primes and targets. As Norris and Ortega (2000) point out, the results of experimental research depend on the measures of language acquisition used. In fact, until recently, few studies had addressed the issue of the relationship between explicit and implicit instruction. Such inconsistent indicating suggests that much more research evidence needs to be gathered before a reliable generalization can be made regarding the relationship between the two types of instruction settings. In addition, L2 learners' individual differences regarding L2 experience should be addressed in a future study by including L2 fluency (O'Brien et al. 2007).

The current study results from multiple regression and correlation tests based on a rather small sample size regarding the prosodic feature, i.e., speech rate. Further research with a larger size of participants is needed to understand the significance of pronunciation in the perception of foreign accents. Another limitation of the present study is that no control group was included. In addition, an experimental methodology is needed to verify the link between foreign accents and speech rate in L2 pronunciation.

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Examples in: English

Applicable Languages: English

Applicable Level: Tertiary Education

Appendix

Elicited Imitation task samples for Speech rate (Adapted from Trofimovich and Baker 2006)

Question	Answer
Did the boy play baseball?	<u>He didn't have a bat in his bag.</u>
Where is my bed?	<u>Your bed is by the window.</u>

*Answer part for Elicited Imitation task

Phonological awareness skill test samples (Adapted from Chard and Dickson 1999)

Concept of Spoken Words

___ Tome ran home ()

___ I have two pets ()

Rhyme Recognition

___ bed-fed ()

___ top-hop ()

Rhyme Production

___ pain ___

___ cake ___

Syllable Blending

___ pen-cil

___ rain-bow

Syllable Segmentation

___ sometime ()

___ basket ()

Syllable Deletion

___ downtown

___ inside

Phoneme Isolation of Initial Sounds

___ big //

___ land //

Phoneme Isolation of Final Sounds

___ pick //

___ ran //