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The Effectiveness of Interactive Instruction on the Intonation Learning of Chinese College Learners

EFFICACITÉ DE L'INSTRUCTION INTERACTIVE DANS L'APPRENTISSAGE DE L'INTONATION DES APPRENANTS DES UNIVERSITÉS CHINOISES

互動式教學對中國大學英語學習者的語音學習的效果檢驗

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Abstract: The paper reported the findings from the study on the different effects of two form-focused instructional techniques on the EFL learner's learning of English intonation. The purposes are to investigate: 1) do the intonation instructions reset EFL leaner's interlanguage phonology, e.g., improving their intonation? ; and 2) if there were some improvements of the interlanguage phonology through the pronunciation instruction, do two types of explicit instruction, differing in the manner of instruction, have the same or different effects on EFL leaner's learning of English intonation? To which extent, the instruction is better than the other. The examination of F0 range and pitch contour in the study indicated that 1) most of the Chinese test subjects could improve their intonation performance after the instructions; 2) the experimental group input plus interaction(II) outperformed the experimental group input plus explanation(IE). The gain in intonation awareness leads to their (II group) significant improvement in the prosodic performance.
Key words: Intonation instruction, cognitive approach, communicative approach

Résumé: Le présent article reporte les résultats d'étude sur les différents effets de deux techniques d'enseignement focalisées sur la forme dans l'apprentissage de l'intonation anglaise des étudiants qui ont l'anglais comme langue étrangère (EFL). Le but de l'article consiste à investiguer : (1) Est-ce que l'instruction d'intonation influence la phonologie de l'interlangage des apprenants d'EFL, par exemple, améliorer leur intonation ? (2) S'il y a des améliorations de la phonologie de l'interlangage par l'instruction de prononciation, est-ce que les deux type d'instruction explicites, différant l'un de l'autre dans la manière d'instruction, ont les mêmes ou différents effets sur l'apprentissage de l'intonation anglaise des apprenants. Dans cette mesure, l'instruction est meilleure que l'autre. L'étude indique : (1) la plupart des tests chinois peuvent améliorer leur intonation après l'instruction ; (2) le groupe expérimental qui insiste sur l'interaction (II) dépasse le groupe expérimental qui met l'accent sur l'explication(IE). L'avantage du groupe II dans l'intonation les conduit à des progrès signifiants dans la performance prosodique.
Mots-Clés: instruction d'intonation, approche cognitive, approche communicative

摘　要：本研究通過分析兩種語音教學方法（認知語音教學法和交際語音教學法）對 10 名英語專業學生的朗讀的語音語調習得的效果旨在解決以下問題：1）語音教學是否能改善外語學習者的仲介語音的語調？ 2）如果學習者的語音語調能夠被提高改善，哪種語音教學方法，認知語音教學還是交際性語音教學，對學習者的仲介語語音語調的改善更高？通過對 10 名女受試者的在前測和後測的朗讀語調的 F0 值的對比表明 1）中國英語學習者的仲介語音語調能夠通過語音教學能夠有所提高；2）在對前測和後測的 F0 值的對比分析表明，5 名來自認知教學法的學生的 F0 值要跟接近 2 名英語本族語者的 F0 值。
關鍵詞：語音教學；在語音教學；認知教學法；交際教學法；英語語調

INTRODUCTION

For many years, many SLA literatures that investigates the topic of critical periods in L2 learning, and particularly in pronunciation, suggest that pronunciation interventions in the L2 classroom are ineffective, which a foreign accent is inevitable (Flege, Munro & Mackay 1995; Hakuta & Wiley, 2003). However, with the increasing studies on the effectiveness of SLA instruction, a number of L2 pronunciation researchers appeared to claim that classroom instruction can better the pronunciation of learners (Derwing, Munro, & Wiebe, 1998). Pennington and Ellis (2000) claimed that the classroom instruction should involve the systematic treatments to draw L2 learners' attention to phonetic forms to develop well-balanced phonological competence. Looking at an English as a foreign language (EFL) classroom in China, L2 pronunciation researchers acknowledged the effects of the instruction on the pronunciation learning(Chen, 2002; Feng & Wu, 2000) and few researchers have examined which instruction approaches could better the learning of pronunciation, say, the communicative approach or the cognitive instructional approach. Most importantly, we need to know more about how and why classroom instruction promotes L2 phonological development. To obtain the data for this issue, the study investigated how the two form-focused instructions, in which input was enhanced by the teacher feedback and that by the interactions, affected L2 pronunciation learning. The experiment included Chinese college students of English major and the learning of the English intonation. The English intonation was selected because of the various functions of the intonation in the communication, say, the emotional or attitudinal, grammatical, and informational (Crystal, 1995; Roach, 1991; Halliday, 1994); and Chinese EFL learners have difficulties in properly using the tones (Gao, 2006; Chen, 2006; Yang, 2006; Zhang, 2001) and also the incoming trend focusing on the suprasegmental features in the pronunciation instruction (Dalton & Seidlhofer, 1994).

Thus, the reviews on the two form-focused instructions, the SLA studies on intonation learning are to review in section one. Based on the theoretical framework, the experiment study is conducted, in which ten Chinese test subjects, first-year university students of English, read aloud the narrative passage. Also, to obtain baseline data, two native speakers of English were recruited to read aloud the same passages. Hence, the procedures of the data-collection, and the selection of the test material and test subjects, are also presented in the second section. The findings of the quantitative analysis and also those of the qualitative analysis are reported and discussed in the third section. The significance of the study is to better the future pronunciation instruction (section four).

1. LITERATURE REVIEW

The current study was inspired by two factors 1) the necessity of the good pronunciation for the EFL learners, especially for the EFL learners of English major; and 2) the essential role of instruction in the EFL learning. Thus, the SLA literatures on intonation instruction, and SLA literatures on the intonation learning or acquisition are to be reviewed.

1.1 The intonation instruction

For over a decade, research on language training that overtly emphasizes linguistic or form-related features of the input in the context of meaningful communication has been central to the study of language learning (Doughty & Williams, 1998). The goal of this training, termed form-focused instruction, is to draw learners' attention to a particular problematic linguistic feature, offering learners an opportunity to notice this feature in the input. Attending to a particular form-related feature thus increases the likelihood that learners will perceive the discrepancy (the gap) between the linguistic feature in the input and their own (often nontarget-like) conception of it (Schmidt, 1990). Several instructional techniques promoting learners' attention to form-related features in L2 input have been used (directly or indirectly) to teach pronunciation. These have included explicit explanation (Derwing et al., 1998), recasts (Lyster, 1998), metalinguistic feedback (Hardison, 2004), and input practice (Bradlow, Pisoni, Akahane-Yamada, & Tohkura, 1997). All these techniques have been shown to lead to improved performance on several pronunciation measures. Derwing, Munro, and Wiebe (1997), for instance, found improved intelligibility and comprehensibility and reduced accentedness in sentences spoken by learners after explicit instruction focusing on good speaking habits (voice quality, speech rate, suprasegmentals).This type of instruction, but not one focusing on segmentals, was later shown to translate into learners' closer approximations of native-like spontaneous L2 speech (Derwing et al., 1998). Intensive form-focused training in perception and production of sounds (Bradlow et al., 1997) and sentences (Hardison, 2004) were likewise shown to yield learning gains. Similarly, in a study of corrective-feedback techniques, Lyster (1998) reported a high incidence of recasts (teacher's reformulations of students' incorrect utterances), a technique that presumably promotes noticing by the learner, leading to learners' correction of their own pronunciation errors. Although revealing the important form-focusing function of several techniques for teaching L2 pronunciation, only a few studies have indicated on the effects of the connected speech through the instruction. Take the intonation instruction for instance; Shimizu (2005) conducted the experimental study on the different effects of intonation instruction with the Japanese EFL learners as the test subjects. And none of the studies on SLA intonation instruction was on the Chinese EFL learners. To fill in the research gap,

the current studies compare the different effects of instruction approaches, namely, input plus interaction, and input plus the explanation on the Chinese EFL learner's learning of intonation.

1.2 The SLA studies on the intonation learning

Intonation is one of the prosody features of a language. It refers to the melody of speech which contributes to organizing and conveying the message appropriately. It is universally available in human communication, while the use and realization of the intonation are specific to each language (Ladd, 1996). This could account for the difficulty in acquiring the L2 interlanguage intonation system. Due to the environment of the EFL learning, the pronunciation instruction places an important role in formulating the interlanguage phonology system, which is also one of the important components of the L2 classroom. Thus, in the past few decades, the findings of L2 studies on the effects of the intonation instruction indicated that it plays a crucial role in attaining a sufficient level of intelligibility that a student has to achieve in a target language. Also, the intonation studies on the intonation learning of EFL learners with different language backgrounds pointed out the errors in the production of L2 English intonation, which appear similar across studies (Backman 1979; Willems 1982; Lepetit 1989; Toivanen, 2003; Chen, 2006; Gao, 2006). Namely, a narrower pitch range, replacement of rises with falls and vice versa (Backman 1979; Lepetit 1989; Willems 1982; Chen, 2006; Gao, 2006); incorrect pitch on unstressed syllables, such as too high, (Backman 1979), no gradual rise on unaccented words preceding a fall (Willems 1982); starting pitch too low (Backman 1979; Willems 1982); problems with reset from low level to mid level after a boundary (Willems, 1982).

As far as the intonation studies in China is concerned, the findings from most of the studies on the EFL learners pointed out that there is an incorrect use of the tone types, especially the overuse of the falling tones (Chen, 2006; Chen, 2002; Feng & Wu, 2000; Gao, 2006; Zhang, 2001). While most of them are just exploratory studies on finding out the existing problems in the pronunciation and intonation learning of EFL Chinese learners, which aim at providing some implication for the future intonation instruction (Chen, 2002; Feng & Wu, 2000; Luo & Zhang, 2002; Zhang, 2001). Hence, their studies lacked the experimental support (Chen, 2002; Feng & Wu, 2000; Zhang, 2001). And also none of the studies focused on how to improve the intonation learning of EFL Chinese through the intonation instruction (Chen, 2006; Chen, 2002; Gao, 2006; Zhang, 2001). Therefore, it is quite necessary to explore how to improve the learner's intonation learning through instructions.

1.2.1 The intonation

Intonation is one of the three basic elements of sentence prosody, the others being metrical rhythm and prosodic phrasing. It refers to the use of suprasegmental phonetic features to convey sentence-level meanings and intentionally excludes features of lexical stress, accent, and tone, which serve to distinguish one word from another. Intonation may be used to convey both non-categorical paralinguistic contrasts, such as emotional states and categorical linguistic contrasts (Ladd, 1996). E.g., one categorical linguistic value that can be conveyed by intonation is the illocutionary force of an utterance (Austin, 1975; Searle, 1969; Couper-Kuhlen, 1986). Hence, Halliday (1994) distinguish three hierarchical systems of English intonation systems, tonicity, tonality and tone. O'Connor and Arnold (1973) proposed much more detailed classification of tone types in English, namely ten tone types, which were further divided into the primary tone types and secondary tone types. The use of the tone types often related to different meanings and had different functions. Due to the complexity of the English intonation, seven of ten tone types are selected for the current study (see Table 1) and the teaching materials used to enhance and improve the intonation performance of the students are included in Appendix 1.

major questions:

1st. Do the intonation instructions, in which a teacher provides an explicit instruction, affect EFL learner's restructuring of their interlanguage phonology?

2nd. Do two types of instruction, differing in the manner of instruction have different effects on EFL learner's learning of the English intonation?

2. METHODOLOGY

2.1 Aims and objectives

To minimize the prosodic difficulties for EFL learners just described, I have just designed an experimental study to examine the effects of intonation teaching and learning. The effects of the different instruction approaches (input plus explanation/ input plus interaction) are to examine in relation to the production and perception performances of EFL Chinese. Hence, in order to check the effects of the instruction on the intonation learning of EFL Chinese learners, the intonation types in reading aloud declarative sentence was examined to address the answers to the following

2.2 Research Design

To address these research questions, the experimental study has quantitative and qualitative components. The pre-test, the immediate post-test were used to measure the effects of two-week intonation instruction (2 sessions of 50 minutes each in the language laboratory). The pre-test was taken on Dec. 5, 2007 and the post-test was taken on Jan.9, 2008. The acoustic software was used to provide auditory and visual displays of pitch

contours as a feedback, which allowed the comparison of the prosodic features of each experimental group. The pre-test consists of the recordings of the learner's intonation patterns prior to receiving any target intonation instruction. The instruction sessions in the interactive input group were designed within a framework of processing instruction and instructed input activities (VanPattern, 2002). The instruction session in the explanation input group was also a kind of popular explicit instruction. The input activities of the two experimental groups focused on the use of seven intonation types. The post-test consists of the last version of the passages read aloud and recorded by these EFL learners. Following the post-tests each participants completed an anonymous questionnaire on evaluating the effects of the intonation teaching they received. All the teaching sessions have been observed by the author. Finally, participants' recordings were assessed on a 6-point scale by two English native speakers. The assessment was done individually. Each learner's pre-test and post-test were randomized. Judges were not told which productions had preceded or followed training. The whole study lasted around three weeks. The collected data were approached quantitatively and qualitatively.

2.3 Subjects

The population consists of two experimental groups and one native speaker group. The experimental groups consisted of 10 female students (n=5 each) from two intact classes (n= 30 each) of English major taught by the same teacher. They are the first-year undergraduates in the University of Science and Technology, Beijing. The experimental group of 10 subjects (5 each) forming part of this research was very homogeneous. They shared common features such as age (young adults, between 19 and 22 years old), mother tongue (Standard Chinese), region (from northern part), and with no other foreign language except English. They also presented a similar intermediate proficiency level decided on both external (students in first year of English major at university, with a similar previous academic background) and internal criteria (language assessment and testing, college entrance exam scores). Their language learning background, context and experience was also fairly similar: they had been learning English as a FL at primary and secondary school for practically the same number of years (6.5 years) and had not spent any time in an English-speaking country. Besides, they all haven't received any formal English phonology and phonetics training; they were prone to speaking the British English. Their preference over English was also cross-checked based on their recording of text reading at the first session of the course. They all spent the same amount of time in phonetics practice. The background information was obtained from the survey prior to the experiment.

The native-speaker group was a group of British native speakers (n=2). They did not receive any specific instruction. They were all native speakers of British English of the same age (young adults 20 years old), mother tongue (the southern British English), region of origin (south of Britain), and the academic background (undergraduate students). The native recorded performance on the controlled activities was prosodically analyzed, which aimed at providing the target language reference and contrast. That is, one of the samples was chosen and was compared with those produced by the two groups of Chinese EFL learners. Hence, the intonation units produced by the learners of the two experimental groups were considered appropriate or non-appropriate taking into account the native performance.

2.4 Instrument

2.4.1 Reading aloud material

The reading aloud performances of three test sentences, which embedded into the narrative passage, were analyzed in detail. The passage was, *The Best Art Critics*, a 146-word short passage, lesson 26 from New Concept English (Book two) (Alexander & He, 1997). The story was a narration, there are 16 sentences in the passage, in which the rising, level and falling tones are applied to express the content of the story vividly (see Appendix 2).

2.4.2 Questionnaires

The 10 participants in the experimental groups were asked to complete the questionnaires to check to what extent the instruction draw learner's awareness to the learning of English intonation. The questionnaires consisted of 15 open questions and also one close-ended question (Appendix 3).

2.5 Treatment

In this classroom-based study, the effects of the explicit instruction treatment were provided to two separate groups: Experimental Group IE (input plus explanation, n=5) and Experimental Group II (Input plus interaction, n=5). The IE treatment emphasized input processing which aimed at making learners understand the use and meaning of intonation process with the help of teacher's explanation. The subjects in the IE treatment were first given a listening task paying attention to a use of the intonation types and its meaning. Then the teacher checked what they heard in the task by asking them the implied meaning of the intonation. Following this, the teacher explained the aspects of English intonation, the use, the meaning, the onset, the nucleus, and head of the English intonation (O'Connor & Arnold, 1973), so that the subjects could fully understand the connected speech phenomena. The treatment ended with reading aloud the test material. The subjects in the II received an interactive approach, which was comprised of noticing and interaction. In this treatment, the subjects listened to the seven different intonation versions of the utterance, *yes*. Then the teacher asked the subjects to compare the difference among them. After the pair-discussion, they

shared their findings in class. After the teacher's brief summary of tone uses in English, the treatment ended with the same reading aloud task in the IE group. Besides, the participants of two experimental groups received the same amount of practice.

2.6 Analysis

The spoken material was given at the beginning of the teaching session and recorded by the MP3-H06, and were converted into wav form files at the sample rate of 16,000 kHz by the software Cool edit pro. 2.0. The acoustic analysis was carried out by the means of the PRAAT software package on the computer. In the pitch analysis an autocorrelation method was used to obtain f0 values in Hertz every 10 milliseconds to remove errors produced by the pitch tracker (e.g. the halving or doubling of individual f0 values), the pitch values for PRAAT were hand-corrected. Also the three acoustic/prosodic parameters were determined: pitch level, pitch range and pitch dynamism. The annotation of the tones were followed the British English convention. The recordings of the participants' reading also played to the two native speakers of English who are from southern Britain. The judgment criteria were given by the author (Appendix 4).

2.7 Procedures

Speech materials read by the participants were audio-recorded in a recording room using a Panasonic microphone before and after the pronunciation-training sessions (1 hour each class and two classes each week, 2 weeks altogether). All the teaching sessions were held in the visual-audio lab. Each student was seated in front of the computer. In order to avoid the test-effect among the participants, there was a regular teaching practice of recording the reading aloud the different texts previously. Before the actual recording, the participants practiced their readings twice silently. Then their reading aloud performance in the pre-test and the post-test was recorded. The recordings were also made of two native speakers of British English. The acoustic analysis on the speech data was conducted. The questionnaires were distributed among the participants in each experimental group upon the ending of the post-test.

3. RESULTS AND DISCUSSION

In this section, the results are presented based on the data gather from the participants. The results are discussed in the following order: (3.1) Native speaker's data collected; (3.2) pre-test data of the EFL college learners ;(3.3) Post-test data of EFL college learners; (3.4) comparison of the data collected; (3.5) native-speaker judgment on the comprehensibility; (3.6) the findings of questionnaires.

3.1 Native speakers' data

The analysis of the native speaker's data indicates that the average range of F0 of two native speakers were 357.85Hz (Table 2). The f0 range of the three sentences by the native speakers are 207.73 Hz, 235.30 Hz, 247.55 Hz respectively and the average f0 range of the three sentences read aloud by the native speakers are 230.19 Hz (see Table 3).

Take sentence 2 for instance, pitch contour of the two speakers were roughly similar (Figure1 and Figure 2). The sentences started by using the low-rising tones and ended with the falling tones. The words *look* and *again*, in the sentences were highlighted and were prominent comparing to the surrounding words. That is because these words are all content words that carry important meanings, the participants put sentence-stress on each of them in order to make them prominent; as a result, their pitch was raised. Such a regular occurrence of the sentence-stress in the utterance plays an important role to specific rhythm in English. This specific rhythm (stress-timed rhythm) is a backbone for English intonation. Thus, English is generally described as an intonation or stress- timed language; Chinese on the other hand, is described as tone language.

3.2 Pre-test data

The analysis on f0 range in the pre-test indicates that the intonation performances of the two experimental groups are roughly same (see Table 4), namely, 512.38 Hz (IE) and 509.49Hz (II).They have a wider f0 range than that of the native speakers (228.61Hz). However, the f0 ranges for the three sentences (Table 5) are 656. 63 Hz, 473.06Hz, 557.48Hz in IE group respectively and 189.56 Hz, 316.22 Hz and 243.43Hz for the II group respectively. This figures indicated that there the range of f0 in the experimental groups are wider than that of the native speaker groups (207.73 Hz, 235.30Hz, 247.55Hz). The f0 range in the native speaker group was evenly distributed; however, the ranges in the experimental groups were irregular, which may cause the prosodic unnaturalness for the EFL learners.

3.3 Post-test data of subjects

The average f0 ranges of post-test data are 384.29 Hz in the IE group while the average f0 range in the II group is 305.89Hz (Table 6). Comparing to the pre-test, the f0 range in the post-tests was natural than that in the pre-test512.38 Hz (II) and 509.49Hz (IE). The f0 ranges when uttering the three sentences were much natural than the version in the pre-test, with the narrower range, 632.27 Hz, 241.5 Hz, and 412.97 Hz in IE group and 312.33Hz, 317.25 Hz, and 404.46 Hz in the II group.

3.4 Data Comparison (pre-test speech data vs. post-test speech data)

The comparison of f0 range of the target sentences from the test passage was to examine the efficacy of the pronunciation instructions. The comparison between the pre-test f0 range and that of the post-test f0 range in the two experimental groups affirm the role of the instruction in the intonation learning of EFL Chinese learners. To be specific, the f0 ranges of the two experimental groups in the post-test are narrower, and a bit unevenly distributed than that in the pre-test.

The between-group comparison of the f0 ranges in the post-test indicates that II experimental group better performs than the IE groups. That is, the average f0 range in the IE group is 384.29 Hz and 305.89 Hz in the II group. The comparison between the f0 range in the native speaker group (228.61HZ) and that of IE group (384.29 Hz) and that of the II group (305.89 Hz) revealed that the intonation patterns in II group were better improved than that in the IE group. Hence, the effects of the processing instruction are confirmed.

Hence, the findings imply that the role of the noticing played in the intonation learning. The explicit attention to phonological properties of L2 speech may allow learners to notice and eventually learn such properties. The processing representation of the teaching materials are perhaps more efficient and beneficial to L2 speech learning. The reason is because that meaning focused instruction may hider the learner's noticing and learning phonological properties of L2 speech (VanPatten, 2004).

3.5 Native-Speaker Judgment Task on Comprehensibility

The scores obtained from the judge's assessment indicate that 1)the speech produced by the two experimental groups in the pretest are roughly same (Table 8); 2) a general improvement was perceived in the reading-aloud performances by the two experimental groups after the treatment (intonation instruction); 3) the findings of the between-group comparison indicate that the performance of the IE groups was as same as that of the II groups in the pre-test, while the intonation performance in the II group was better than that of the IE group in the post-test. The personal interview with the judges revealed that the post-test data were better for comprehension than the version prior to the intonation instruction.

Therefore, the judges' assessment corroborated the results obtained in the acoustic analysis confirmed, also at the level of the perception, a general improvement in the post-test reading by the two experimental groups.

Table 1 The tone types of English: shapes, meanings, and functions

	Tone types	Shapes	Meanings	Functions
The primary tones	Falling	↘	completeness	Meaning giving (given or new); Grammatical structure distinguish (statement, interrogative, directive or question)
	Rising	↗	Incompleteness; Questioning; Uncertainty	
	level	→	Incompleteness	
The Secondary tones types	Rising fall	↗↘	Being exciting; strong assertion	Attitudinal and emotional (Tench, 1996)
	Low-fall		Being calm, quite, and indifferent	
	High-fall		Being excited, lively, complete	
	Low-rise		Being calm, gentle, encouraging, incomplete	
	High-rise		Being excited, questioning, and incomplete	
	Mid-level		Being incomplete, indifferent	

(Chen, 2006; Shimizu, 2005)

Tale 2 The F0 Ranges of Female Native Speakers of English (Hz)

Speakers	**Range**	**Minimum**	**Maximum**
Speaker 1	303.10	155.95	459.05
Speaker 2	154.11	102.53	256.64
Average	228.61	129.24	357.85

Table 3 The F0 Range of Three Sentences Read by Three Native Speakers (Hz)

Sentence NO.	Range	Minimum	Maximum
1	207.73	105.78	313.51
2	235.30	134.77	370.07
3	247.55	147.41	394.96
Average	230.19	129.32	359.51

Figure 1 The Pitch Contour of *I look at it again* by Speaker 1

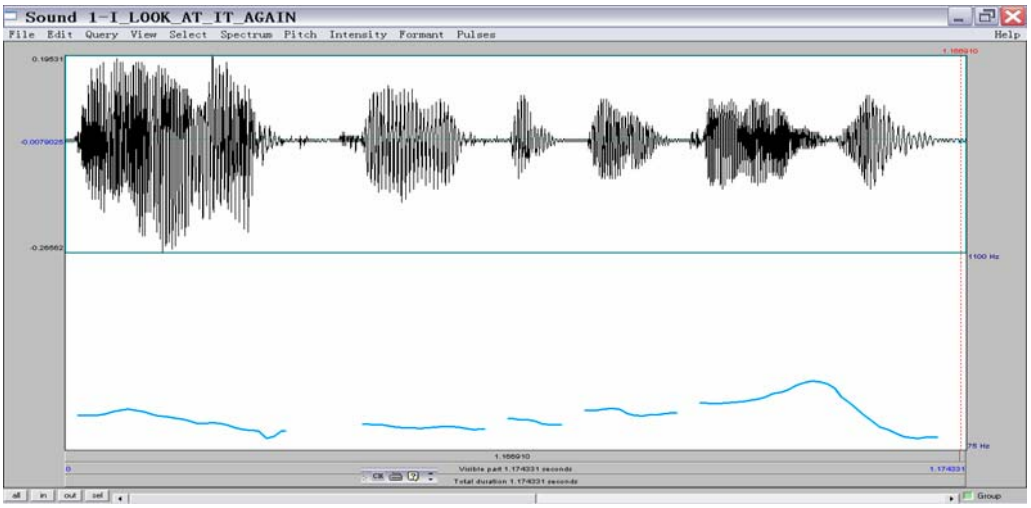

Figure 2 The Pitch Contour of "*I look at it again*" by Speaker Two

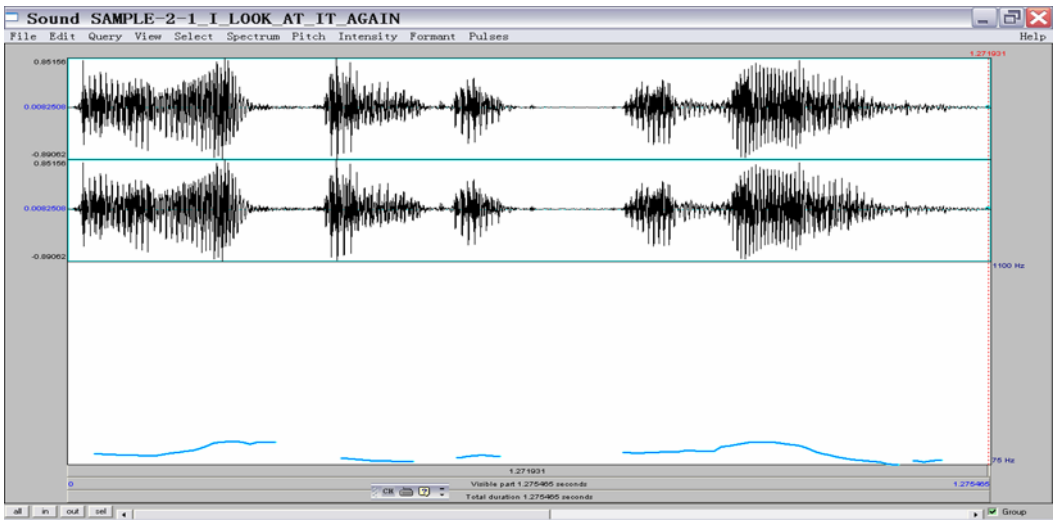

Table 4 Average F0 Ranges of Participants: Pre-test Data (Hz)

Experimental group	Range	Minimum	Maximum
IE group	512.38	166.41	678.79
II group	509.49	139.89	649.38

Table 5 The F0 Range of Three Sentences Read by Two Groups in the Pre-test (Hz)

	IE Group				II Group		
NO.	**Range**	**Mini.**	**Max.**	**NO**.	**Range**	**Mini.**	**Max.**
1	656.63	108.82	765.45	1	189.56	107.92	297.48
2	473.06	208.91	681.97	2	316.22	148.06	464.28
3	557.48	181.48	738.96	3	243.43	163.70	407.13
Average	562.39	166.40	728.79	Average	248.74	139.89	388.63

Table 6 Average F0 ranges of participants: Post-test data (Hz)

Experimental group	**Range**	**Minimum**	**Maximum**
IE group	384.29	172.48	556.77
II group	305.89	118.04	423.93

Table 7 The F0 Range of Three Sentences Read by Two Groups in the Post-test (Hz)

	IE Group				II Group		
NO.	**Range**	**Mini.**	**Max.**	**NO**.	**Range**	**Min.**	**Max.**
1	632.27	107.06	739.33	1	312.33	145.89	458.22
2	241.5	183.42	424.92	2	317.25	131.84	449.09
3	412.97	98.48	511.45	3	404.46	154.43	558.89
Average	428.91	129.66	558.57	Average	344.68	144.05	488.73

Table 8 Judges' Scores on the Speech Data

Criteria No.	**IE group**		**II group**	
	Pre-tests	**Post-tests**	**Pre-tests**	**Post-tests**
1	4	4	4	4
2	2.5	3	2	3
3	3	3.	2.5	3.5
4	3	3.5	3	3.5
Average	3.125	3.25	2.8	3.5

3.6 Learner questionnaire responses

The responses to the final questionnaires on the effectiveness of intonation instruction revealed that the learner perceived a general improvement in their intonation performance after the training. All ten subjects shared a common feeling of being more aware of the role of intonation in the spoken discourse, which has been neglected prior to the instruction. There had been an evident sensation towards the important of intonation to transmit meaning and intention as some of their answers recall: "before the program I found it difficult to tell the difference between the rising and falling tones; to distinguish meaning related to it." "I can recognize the different patterns of intonation and some intention when the sentences are uttered. And I can understand the intention of the speakers. All the learners clearly stated that the need for the future practice and their willingness to make the effort to improve further. Thus, in short, their awareness and noticing of the intonation helps them organize their speech to better express their opinions properly. They realized, for instance, that different degrees of certainty could be expressed by tone patterns.

In a sum, both the findings of the acoustic analysis and judge's analysis and the response from the questionnaires confirm the role of the instruction on the intonation learning. The interlanguage intonation system can be reset through the explicit instruction, through which the learners pay attention to the intonation. These certify the role of noticing in the SLA phonology learning. As far as the effectiveness of two instructions is concerned, the II, which is based on the processing framework, is better than that of the IE instruction, which is proved by the findings of the between-group f0 range comparison. The II group is better at improving the intonation f0 range by drawing more learners' attention to the tone patterns.

4. CONCLUSION

The two-folded purposes of the present article argue in

support of the possibility of teaching and learning of English intonation aspect in L2 learners; it also examines examine the different effectiveness of the two-form focused instructions. The acoustic analysis on f0 range, native-speaker judgment task, and the examination of the questionnaire response were conducted to examine 1) the effectiveness of the teaching instruction; 2) to which extent the effects of the instruction approach differ. The quantitative analysis and qualitative analysis indicate that the crucial role of the instruction on the intonation learning, also the processing instruction is also more effective in the intonation instruction and also the intonation learning, say the bettering and improvement in a F0 range.

While the current is far from perfection, it just examined the British intonation pattern. The teaching session is much short that just lasted about three-week. And also there are just five subjects and three sentences for examination, due to the limited time and sources.

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APPENDIX 1

TEACHING MATERIAL

1. Perceptive Materials

The material for the test was a one-word utterance, "Yes," uttered in the seven tones at random. The students were given a handout with explanations of the nuances and implications of the tones, and they were asked to choose the one that matched the tone uttered by MP3 recordings (Roach, 1991).

The handout read as follows:

Question) "Yes" can express different feelings according to the tone used. You will hear "Yes" in seven different tones. On the handout, you see seven different kinds of feelings, emotions and implications. Each time you hear "Yes" uttered with a tone, please choose the feeling; out of A to G, that you think fits it most.

1( ) 2( ) 3( ) 4( ) 5( ) 6( ) 7( )

A. The utterance seems to continue somehow, incomplete, indifferent.

B. Extremely excited, questioning, and implying "Yes, but…," incomplete.

C. Very excited, questioning, incomplete, asking for repetition.

D. Calm, gentle, encouraging, soothing, calmly questioning, incomplete.

E. Extremely excited, very strong assertion, implying "Of course," complete.

F. Very excited, interested, high-spirited, lively, and complete.

G. Calm, quiet, uninterested, low-spirited, complete.

The order of the tones actually read aloud in the pretest was as follows (the answers are shown in parentheses): 1 Low Fall (G), 2 High Fall (F), 3 Rise-Fall (E), 4 Low Rise (D), 5 High Rise (C) , 6 Fall-Rise (B), and 7 Mid-Level (A)

2. Productive Materials

The production materials are the tones matching for the suitable setting and utterance. The conversation setting and utterance were as follows (W indicates a waiter/waitress, and C the customer).

W: Hello, welcome to my restaurant! C: I made a reservation for today.

W: Oh! Are you Mr. Higgins? C: Yes (Low Fall).

W: Are you really Mr. Higgins? C: Yes (High Fall).

W: Could you show me your reservation card? C: Yes (Rise-Fall). Here it is.

W: Thank you. Would you like a nonsmoking seat? C: Yes (Low Rise).

W: Well, we have a special menu today! C: Yes (High Rise)?

W: We have a special menu today, because this is St. Valentine's Day! This is it. But you have to finish all of it. Would you like to order it? C: Yes (Fall-Rise).

W: Would you like some dessert? C: Yes (Mid-Level).

The short utterances were as follows (tones used are shown after the tonic syllables):

1A: Tea (Rise) or cof(Fall)fee? 1B: Tea (Rise) or cof(Rise)fee? 1C: Tea or cof(Rise)fee?

2A: Excuse (High Fall) me. 2B: Excuse (High Rise) me? 2C: Excuse (Fall-Rise) me.

Some explanations of the differences of meaning were given as follows:

Short Utterance 1A is used when the speaker has only two kinds of drinks to offer.

Short Utterance 1B is used when the speaker has more than two kinds of drinks to offer. Short Utterance 1C implies that the speaker is asking whether or not the listener is interested in having something to drink such as the drinks mentioned.

Short Utterance 2A expresses the speaker's apology.

Short Utterance 2B means the speaker is asking the listener to repeat what she/he has just said (a repetition question).

And Short Utterance 2C is an utterance using a polite tone to call the attention of somebody the speaker wishes to talk to.

APPENDIX 2

TEST MATERIALS

1. Reading materials

I am an art student and I paint a lot of pictures. Many people pretend that they understand modern art. They always tell you what a picture is 'about'. Of course, many pictures arc not 'about' anything. They are just pretty patterns. We like them in the same way that we like pretty curtain material. I think that young children often appreciate modern pictures better than anyone else. They notice more. My sister is only seven, but she always tells me whether my pictures are good or not. She came into my room yesterday. 'What are you doing?' she asked. 'I'm hanging this picture on the wall,' I answered. 'It's a new one. Do you like it?' She looked at it critically for a moment.' It's all right,' she said, 'but isn't it upside-down?' I looked at it again. She was right! It was!

2. The test sentences

I looked at it again.

She was right!

It was!

Appendix 3

ENGLISH NATIVE JUDGES' ASSESSMENT FORM

1	Can you understand the passage? Please, give it a score.	Yes / No 1 2 3 4 5 6
2	Do you feel the rhythm of reading out passage is appropriate? Please, give it a score.	Yes / No 1 2 3 4 5 6
3	Please, value the speaker's intonation in terms of understanding their speech.	1 2 3 4 5 6
4	Do you feel the speaker is using the most appropriate intonation to transmit the intended message?	Yes / No 1 2 3 4 5 6

Key: 1 (Very low level. Difficult to comprehend) / 2 (Low level. Not totally comprehensible) / 3 (Comprehensible) / 4 (Acceptable) 5 (High level) / 6 (Native-like)

APPENDIX 4

FINAL QUESTIONNAIRES

Questionnaire on English intonation

1st. What were the most difficult elements of English intonation for you, at a productive and perceptive level, before the sessions in the lab?

2nd. What do you feel you focused your attention on during these weeks of practice?

3rd. What elements of the speech and intonation of native English speakers did you notice after this program that you had not noticed before?

4th. What have you noticed about your own pronunciation and intonation in English as a result of these sessions?

5th. What do you feel you have accomplished in terms of your pronunciation and intonation in English?

6th. Do you feel you can recognize the English tone patterns (fall, rise, fall-rise contours) better now?

7th. Do you feel you can produce the English tone patterns (fall, rise, fall-rise contours) better now?

8th. Do you feel you can organize your speech better now?

9th. Do you feel you can recognize the prominent syllables in an utterance better now?

10th. Do you feel you can produce prominent syllables in an utterance better now?

11th. Do you feel you are more aware of the form of English intonation now? why and why not? Name some examples

12th. Do you feel you are more aware of the function of English intonation in speech (e.g., reading discourse or natural utterance) now? Please, explain. Please value the following parts of the session on intonation (key: 0 (no value) 5 (high value):

(a) Listen to native speakers and compare them with your own pronunciation.1 2 3 4 5

(b) Listen and explain the intonation patterns at the same time.1 2 3 4 5

(c) Listen to the recording several times and compare them. 1 2 3 4 5

(d) Record your speech and compare it with that of native speakers.1 2 3 4 5

(e) Basic theoretical concepts about the form and meaning of intonation.1 2 3 4 5

(f) The use of role plays and more spontaneous conversations. 1 2 3 4 5

13th. What do you feel you would need to practise more now?

14th. Do you feel you can apply what you have learnt in the course to more natural and spontaneous conversations? Why and How?

15th. Please, mention what you feel you would have improved in terms of the use of the intonation in your study.

APPENDIX 5

Table 9 (a) F0 Ranges of Individual Participants: Pre-and Post-Test Data (Hz)

	Participants NO.	Sentence NO.	Range	Minimum	Maximum
Experimental group IE (input + explanation)	IE-1 (PRE)	1	791.17	102.37	893.21
		2	41.98	242.62	200.64
		3	604.12	168.78	772.99
		Average	479.09	171.26	605.61
	IE-1(POST)	1	799.93	126.75	926.68
		2	45.41	189.77	235.18
		3	143.23	91.06	234.29
		Average	329.52	135.86	456.38
	IE-2(PRE)	1	149.87	172.36	322.23
		2	705.09	194.17	899.26
		3	521.71	90.13	611.84
		Average	458.89	152.22	611.11
	IE-2(POST)	1	181.61	126.91	308.52
		2	173.78	93.70	267.48
		3	453.67	100.22	553.89
		Average	269.69	320.83	376.63
	IE-3(PRE)	1	482.38	102.20	584.58
		2	14.86	243.41	258.27
		3	809.29	193.46	1002.75
		Average	435.51	179.69	615.20
	IE-3(POST)	1	411.09	89.73	500.82
		2	116.49	201.70	318.19
		3	226.98	108.06	335.04
		Average	251.52	133.16	384.68
	IE-4(PRE)	1	861.51	91.44	952.95
		2	150.29	97.36	247.65
		3	115.07	101.83	216.90
		Average	357.62	96.88	472.5
	IE-4(POST)	1	769.76	116.16	885.92
		2	102.52	164.84	267.36
		3	238.14	97.08	335.22
		Average	370.14	126.27	496.17
	IE-5(PRE)	1	998.52	75.74	1074.26
		2	837.06	266.97	1104.03
		3	737.10	353.22	1090.32
		Average	857.56	231.98	1089.54
	IE-5(POST)	1	998.93	75.76	1074.69
		2	769.32	267.08	1036.40
		3	1002.84	95.97	1098.81
		Average	923.70	146.27	1069.97

Table 9 (b) F0 Ranges of Individual Participants: Pre-and Post-Test Data (Hz)

	Participants NO.	Sentence NO.	Range	Minimum	Maximum
Experimental group Ii (input + interaction)	II-1 (PRE)	1	227.64	89.40	317.04
		2	149.67	84.22	233.89
		3	34.08	169.64	203.72
		Average	137.13	114.42	251.55
	II-1(POST)	1	841.85	175.98	1017.83
		2	994.21	86.63	1080.84
		3	70.02	177.31	247.33
		Average	311.36	146.64	458
	II-2(PRE)	1	248.65	78.07	326.72
		2	248.36	180.67	429.03
		3	196.90	195.36	392.26
		Average	231.30	151.37	382.67
	II-2(POST)	1	183.27	164.15	347.42
		2	93.88	178.05	271.93
		3	929.10	166.15	1096.25
		Average	402.39	169.45	571.87
	II-3(PRE)	1	173.01	74.67	247.68
		2	120.82	104.73	225.55
		3	115.04	90.28	205.32
		Average	136.29	89.89	226.18
	II-3(POST)	1	239.35	120.72	360.07
		2	91.18	121.26	212.44
		3	768.40	148.27	916.67
		Average	366.31	130.08	496.39
	II-4(PRE)	1	199.38	103.42	302.80
		2	893.35	177.23	1070.58
		3	737.43	176.08	913.51
		Average	610.06	152.24	762.30
	II-4(POST)	1	109.71	174.04	283.75
		2	163.06	186.05	349.11
		3	104.79	181.29	286.08
		Average	125.85	180.46	306.31
	II-5(PRE)	1	99.10	194.06	293.16
		2	168.92	193.43	362.35
		3	133.68	187.15	320.83
		Average	133.90	191.55	325.45
	II-5(POST)	1	187.45	94.57	282.02
		2	243.92	87.19	331.11
		3	148.97	99.15	248.12
		Average	193.44	93.64	287.08

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