



Teaching Phonetic Symbols Explicitly and Implicitly

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ABSTRACT

If we have a look at the history of the English Language we can understand that the sounds of English are not uniform since English is an unphonetic language. There is no relation between the letter and the sound. This paper aims at investigating the effect of pronunciation teaching of English to high school students. More specifically, it examines to realize whether learners can learn phonetic symbols better explicitly or implicitly. In order to do this, two different teaching methods were implemented, which resulted in having two different experimental groups; an explicit vs. an implicit one. The former received explicit teaching of English pronunciation through a variety of activities while the latter was taught implicitly via the use of recasts. The results showed that the explicit form of teaching is better than implicit one.

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Introduction

Explicit

In fact it is to maximize students' academic growth; explicit instruction is one of the best tools available to educators, a structured, systematic, and effective methodology for teaching academic skills. It is called explicit due to it is an unambiguous and direct approach to teaching that includes both instructional design and delivery procedures. Explicit instruction is characterized by a series of supports or scaffolds. In this form of teaching students are guided through the learning process with clear statements about the purpose and rationale for learning the new skill, clear explanations and demonstrations of the instructional target, and supported practice with feedback until independent mastery has been achieved. Rosenshine (1987) described this form of instruction as "a systematic method of teaching with emphasis on proceeding in small steps, checking for student understanding, and achieving active and successful participation by all students".

Elements of Explicit Instruction

Educational researchers (e.g., Brophy & Good, 1986; Christenson, Ysseldyke, & Thurlow, 1989; Hughes, 1998; Marchand-Martella, Slocum, & Martella, 2004) have proposed a list of instructional behaviors and elements characteristic of an explicit approach to teaching. These 16 instructional elements are:

1. Focus instruction on critical content
2. Sequence skills logically
3. Break down complex skills and strategies into smaller instructional units
4. Design organized and focused lessons
5. Begin lessons with a clear statement of the lesson's goals and your expectations
6. Review prior skills and knowledge before beginning instruction
7. Provide step-by-step demonstrations
8. Use clear and concise language
9. Provide an adequate range of examples and non-examples
10. Provide guided and supported practice
11. Require frequent responses
12. Monitor student performance closely

13. Provide immediate affirmative and corrective feedback
14. Deliver the lesson at a brisk pace
15. Help students organize knowledge
16. Provide distributed and cumulative practice

Explicit Systematic Phonics

The aim of phonics instruction is to teach children sound-spelling relationships and how to use those relationships to read words. Phonics instruction should be explicit and systematic. It is explicit in which sound-spelling relationships are directly taught. For example, Students are told that the letter *s* stands for the /s/ sound. It is systematic it means it follows a scope and sequence that allows children to form and read words early on. The skills taught are constantly reviewed and applied to real reading.

By systematic and early instruction in phonics students can read better. It is because phonics knowledge aids in the development of word recognition. Word recognition, in turn, increases fluency and Reading fluency, improves reading comprehension since children are not struggling with decoding and are able to focus on making meaning from text. Inadequate decoding is characteristic of poor readers.

Good phonics lessons contain the following critical parts. Each will be discussed in depth on the following pages.

1. Phonological Awareness
2. Introduce Sound-Spelling
3. Phonics Maintenance
4. Blending
5. Word Building
6. Dictation/Spelling

Phonetic transcription & analysis

Phonetic transcription is the use of phonetic symbols to represent speech sounds. Ideally, each sound in an utterance is showed by a written phonetic symbol, so as to furnish a record sufficient to render possible the accurate reconstruction of utterance.

The transcription system will in general reflect the phonetic analysis imposed by the transcriber on the material. In particular, the choice of symbol set will tend to reflect decisions about (i) segmentation of the language data and (ii) its phonemicization or phonological treatment.

In practice the same data set may be transcribed in more than one way. Different transcription systems can be appropriate for different purposes, such as might include descriptive phonetics, theoretical phonology, language pedagogy, lexicography, and speech and language therapy computerized speech recognition and text-to-speech synthesis. Each of these has its own requirement.

Phonetic symbols

For most of phoneticians, the symbol set of choice is the alphabet of the International Phonetic Association, known as the International Phonetic Alphabet (IPA). This is a set of about a hundred alphabetic symbols (e.g. *η*, *ɔ*) together with a handful of non-alphabet symbols (e.g. the length mark :) and about thirty diacritics (e.g. those exemplified in *ʔ*, *à*).

They are summarized on the IPA Chart (appendix A) and presented, together with guidelines for their use, in the IPA Handbook (Nolan and Esling, 1999); that replaced the earlier Principles booklet (Jones, 1949).

Different pronunciation researches have demonstrated the benefits of explicit phonetic instruction in pronunciation learning (e.g., Lord, 2005; Saito & Lyster, 2012a, 2012b). However, the effects of instruction targeting segmentals in comprehensibility (e.g., Derwing, Munro, & Wiebe, 1998) or the use of laboratory training studies to classroom instruction (e.g., Pennington & Ellis, 2000) has not been investigated in large intensive language programs where the implementation of pronunciation instruction is sometimes limited. This study aims at investigating how explicit instruction influences the acquisition of second language (L2) segmentals and how their production contributes to comprehensible speech in L2 learners in a large intensive language program. The study was implemented in three intact English as a second language (ESL) class where learners received explicit instruction in either segmentals or no explicit instruction. The results suggest a major role of prosody in improving comprehensibility in learners even when instruction is limited to small periods of time in class. Additionally, a qualitative analysis of the classroom-treatment implementation demonstrated that explicit phonetic instruction that guides learners to notice L2 features—and the ambiguities that could arise in production as a result of errors—could be beneficial in the development of comprehensible speech.

Implicit

Implicit instruction happens in instructional tasks that do not provide specific guidance on what is to be learned from the task. It can provide examples, uses, instances, illustrations, or visualizations of a knowledge components without a direct statement (or rule) that specifically directs the learner on what is to be learned (knowledge component). It contrasts with explicit instruction.

Ellis (1994) provides definitions of implicit and explicit learning:

"Implicit learning is acquisition of knowledge about the underlying structure of a complex stimulus environment by a process which takes place naturally, simply and without conscious operations. Explicit learning is a more conscious operation where the individual makes and tests hypotheses in a search for structure. Knowledge attainment can thus take place implicitly (a non-conscious and automatic abstraction of the structural nature of the material arrived at from experience of instances), explicitly through selective learning (the learner searching for information and building then testing hypotheses), or, because we can communicate using language, explicitly via

given rules (assimilation of a rule following explicit instruction)." (Ellis, 1994, p. 1)

As implicit phonics, is the most widely used form of phonics taught in schools today. Implicit phonics is moving from the whole to the smallest parts; "blending-and-building" is not usually taught.

In this form of instruction, students are expected to absorb or induce the required information from the word's structure, only from presentation of similar sounding words ("The sound you want occurs in these words: mad, maple, moon." The words may be pointed to or spoken by the teacher, but the sounds in isolation from words are never presented to children). A serious problem with implicit phonics methods is the incorrect assumption that all students will already have the fairly sophisticated phonemic awareness skills needed to enable the comparison of sounds within the various words.

There are also two ways to the instructional process that are "systematic" and "incidental". In first one, there will be attention to the detail of the teaching process. Instruction will usually be teacher-directed, based on a logical analysis of the skills required and their sequence. At its most systematic, it will probably include massed and spaced practice of those skills (sometimes in isolation), corrective feedback of errors, and continuous evaluation of progress.

Incidental (or discovery, or embedded) instruction change the responsibility for making use of phonic cues from the teacher to the student. It presumes that students will develop a self-sustaining, natural, unique reading style which integrates the use of contextual and grapho-phonetic cues, without the possibly disabling influence (it is argued) of systematic instruction.

Though rarely explicitly stated, a fundamental assumption on which many speech recognition systems are implicitly based is that speech is literate. It means that, it is a code for communication having a small number of discrete phonetic symbols in its alphabet. These symbols are, however, only mental constructs and, as such, are not directly accessible but are, instead, observable only in their highly variable acoustic manifestation.

By implicit instruction, we mean that instructor does not outline such goals or make such explanations overtly, instead simply presents the information or problem to the student and give this chance to student to make their own conclusions and create their own conceptual structures and assimilate the information in the way that makes the most sense to them.

Review of Literature

If we search about the history of the English Language we can found that due to the influence of so many languages, like, Latin and German, the sounds of English are not uniform and phonetic. In fact, there is no relation between the letter and the sound. In languages such as Tamil and Hindi every letter is pronounced but English is not so. For example, the following words ring, women, and many the letters i, o and y are pronounced as /ɪ/ which occurs in the letter sit. Therefore in English one letter can represent more than one sound and therefore this becomes an obstacle for the new learner of the language. One of the most important evolutions in pronunciation was the emergence of the IPA i.e. the International Phonetic Alphabet. It was developed in 1888 to provide a universal code which could represent the exact pronunciation of the sounds that exist in all languages. It considers all the sounds or phonemes that can be uttered in English and each sound is given as a separate symbol. A great number of ELT writers insist on the benefits to be gained when learners master the symbols of the

phonetic alphabet; for example, they will be able to understand the pronunciation of a new word (e.g. Cook, 2001). So, many ELT writers recommend activities that either require knowledge of the phonetic script or help learners become competent in phonetic transcription.

Celce-Murcia, Brinton, and Goodwin (1996) proposed two modern approaches to teaching pronunciation which are the intuitive-imitative approach and the analytic-linguistic approach. The first approach had been used prior to the late 19th century and was the only approach in use at the time. This approach relies on the learners' ability to listen to and imitate the target language sounds without the presentation of explicit information. The second approach has been used to complement the intuitive-imitative approach without replacing it. This approach by using information and tools such as the phonetic alphabet and articulatory descriptions explicitly directs the learner to focus attention on the sounds and rhythms of the target language.

Pronunciation instruction came to be considered crucial after the communicative approach became the leading instructional approach in the 1970s, given that communication was considered the primary purpose of language in all varieties of methodology. Celce-Murcia et al. (1996) defined the traditional approaches which were used in pronunciation classrooms as "...the phonetic alphabet, transcription practice, and diagnostic passage; detailed descriptions of the articulatory system; recognition/discrimination tasks; approximation drills; focused production tasks (e.g., minimal pair drills, contextualized sentence practice, reading of short passages or dialogues) and [the] like". They also introduced newer techniques which come from other fields: fluency-building activities, use of multisensory modes, visual and auditory reinforcement, tactile reinforcement, kinesthetic reinforcement, use of authentic materials, and techniques from psychology, theater arts, and other disciplines.

These methodologies have been used, studied, and refined in many parts of the world. In Japan, however, English phonetic education has never been the center of instruction nor has it been given much attention in syllabus development. Even in the rare instances when it receives a spot in the syllabus, exact classroom practice is still very limited. In addition, educator- researchers' interests rarely focus on this field. The Chubu English Language Education Society (CELES) reviewed all the papers published by the CELES over the past 40 years and categorized them to examine what fields of skill development have been published. The pronunciation category was found to consist of only three percent (Hirano, 2010). Ohtaka (1996) summarized the position of pronunciation education in Japanese education by stating that the need for English phonetic training in current Japanese English education is widely recognized, but is not really practiced in the classroom for the following four reasons: (a) grammar translation instruction is emphasized for entrance examinations; (b) actual opportunities of speaking English are not increasing; (c) Japanese English educators does not have high confidence in their own English pronunciation; and (d) English instructional theory is underdeveloped. Arimoto (2005) analyzed what is actually happening in the classroom when junior or high school teachers in Japan claim to include phonetic education in their lessons. He found three typical characteristics: (a) there was no explicit systematic phonetic alphabet presentation; (b) teachers would play the model sounds on tape or CD (or use the teachers' voice) to students; and (c) students would repeat what they heard. He noted that what students have

typically done is simply the repetition of words like parrots not real accent correction.

3. Methodology

Participants

The present research was conducted for a group of 40 female high school students who were at intermediate level at English language institutes, with the same level and age. All speak Persian as their first language and they chosen from Khorasan foreign languages institute in Kashmar.

Instructions

This research consisted of two experimental groups, implicit (group 1) and explicit (group 2). The explicit group received explicit teaching in the pronunciation of the English phonetic symbols through a variety of activities such as listen and repeat, vowel and consonant discrimination activities. On the other hand, the implicit group was taught the English pronunciation implicitly through the use of recasts (i.e. the reformulation of the learner's immediately preceding erroneous utterance while maintaining his or her intended meaning) (Ammar and Spada 2006). More specifically, students received extensive phonetic symbol practice. Throughout the lesson the teacher recasted the erroneously pronounced words without correcting any grammatical or vocabulary mistakes.

Instruments and Procedure of the study

The students took a pre-test exam which includes 36 questions (each blanks was consider as a question) to determined students homogeneity. There were two groups in this study, each one includes 20 participants. For the first group, implicit one, we used the book, Interchange 1 and for the second group, explicit one, American English File 1 was used. The treatment was conducted 3 sessions through 10 weeks. At the end of instruction we conducted post test exam which includes 72 questions (each blanks was consider as a question) to determine the effect of instruction on these two groups. These questions were taken from American English File Work Books and different sites.

Data Analysis

We evaluate the data by use of pre and post tests. At first, for evaluating two teaching approaches (explicit and implicit); we divided the scores of post tests by two that are calculated out of 36. Then, we calculate the means of two pre tests and two post tests (table 1) and finally compared these two means together.

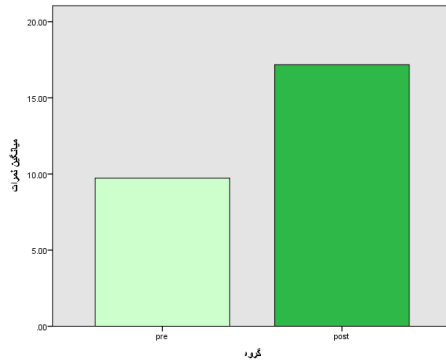
The questions of pre-test

pre	post
7.50	9.75
8.50	12.00
8.00	13.00
1.50	12.00
4.00	11.00
7.50	7.00
6.50	7.25
10.00	24.75
14.00	29.00
18.00	26.50
5.50	20.50
8.00	16.00
11.50	10.00
15.50	15.25
11.00	30.00
11.50	23.25
14.00	30.00
12.00	15.50
10.50	18.75
9.50	12.00

Descriptive statistics including the mean and standard deviation are as follow:

Table	Min score	Max score	Mean	Standard Deviation
Pre-test	5.1	18	725.9	96.3
Post-test	7	30	175.17	66.7

Bar chart of the mean is like this:



In next stage we evaluated to see whether the data are normal (table 3). Doing this is necessary for comparing of two groups to select test of parameter or non-parameter. According to output of SPSS, results of two Kolmogorov-Smirnov and Shapiro-Wilk Tests confirm that data of two groups are normal. (pvalue \geq 0.05)

Tests of Normality						
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Pre	.087	20	.200 [*]	.992	20	1.000
Post	.161	20	.186	.910	20	.063

Paired Samples Test:

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 pre	9.7250	20	3.96191	.88591
post	17.1750	20	7.66404	1.71373

Paired Samples Correlations

	N	Correlation	Sig.
Pair 1 pre & post	20	.584	.007

Paired Samples Test

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	pre - post	-7.45000	6.24110	1.39555	-10.37092	-4.52908	-5.338	19	.000

In this stage, table 4 and table 5 show the descriptive statistics of each group and correlation of two groups which is 584.0. Table 6 shows the information that are related to Paired Samples Test that according to it, mean of the pretest scores 45.7 units is lower than post test scores. P-value is equal to .000 that is in meaningful level 05.0 of pre test has meaningful differentiation with post test. Due to mean of post test scores is more than pre test so, we conclude that second method (explicit) is better than first method (implicit).

Conclusions

One of the challenges currently Iranian teachers facing in English language in teaching pronunciation is that to understand which teaching method is better, explicit or implicit form of teaching. Explicit way of teaching is one of the best and effective methods for teaching academic skills. In fact it is a kind of direct approach to teaching. But in implicit way of teaching learners face with examples, uses, instances, illustrations, or visualizations of knowledge components without a direct explanation. However, after a comparison of these two ways of teaching pronunciation it shows that explicit way of teaching is better than implicit one.

Appendix A

THE INTERNATIONAL PHONETIC ALPHABET (revised to 1993)

CONSONANTS (PULMONIC)																
	Bilabial		Labiodental		Dental	Alveolar		Postalveolar		Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal	
Plosive	p	b				t	d			ʈ	ɖ	ɟ	k	g	q	ʔ
Nasal	m	ɱ				n				ɳ	ɲ	ŋ	ɴ			
Trill		ʙ				r							ʀ			
Tap or Flap						ɾ				ɽ						
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ɕ ʑ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ					
Lateral fricative						ɬ ɮ										
Approximant		ʋ				ɹ				ɻ	j	ɰ				
Lateral approximant						l				ɭ	ʎ	ʟ				

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

CONSONANTS (NON-PULMONIC)			
Clicks		Voiced implosives	
◌	Bilabial	ɓ	Bilabial
◌̤	Dental	ɗ	Dental/alveolar
◌̥	(Post)alveolar	ɖ	Palatal
◌̧	Palatoalveolar	ɣ	Velar
◌̨	Alveolar lateral	ɠ	Uvular
		ʛ	Alveolar fricative

VOWELS			
	Front	Central	Back
Close	i y	ɨ ʉ	ɯ u
Close-mid	e ø	ɘ ɵ	o
Open-mid	ɛ œ	ɜ ɞ	ɔ
Open	æ ɶ	ɑ ɶ	ɑ ɒ

Where symbols appear in pairs, the one to the right represents a rounded vowel.

OTHER SYMBOLS	
Λ	Voiceless labial-velar fricative
W	Voiced labial-velar approximant
U	Voiced labial-palatal approximant
H	Voiceless epiglottal fricative
Ʒ	Voiced epiglottal fricative
ʢ	Epiglottal plosive
Ɓ	Alveolo-palatal fricatives
ɺ	Alveolar lateral flap
ɺ	Simultaneous ɺ and X
	Affricates and double articulations can be represented by two symbols joined by a tie-bar if necessary.
kp	ts

SUPRASEGMENTALS		TONES & WORD ACCENTS	
		LEVEL	CONTOUR
Primary stress	founəˈtʃən	é	↗ Extra high
Secondary stress		ê	↘ Rising
◌̈	Long	e̊	↗ High
◌̊	Half-long	ē	↗ Mid
◌̋	Extra-short	ĕ	↘ Low
◌̌	Syllable break	ē̌	↘ Low rising
◌̍	Minor (foot) group	ē̌	↘ Extra low
◌̎	Major (intonation) group	↓	Downstep
◌̏	Linking (absence of a break)	↑	Upstep

DIACRITICS		Diacritics can be placed above a symbol with a descender, e.g. ɰ̥	
◌̥	Voiceless	◌̤	Breathily voiced
◌̧	Voiced	◌̨	Creaky voiced
◌̨	Aspirated	◌̩	Linguabial
◌̩	More rounded	◌̪	Labialized
◌̪	Less rounded	◌̫	Palatalized
◌̫	Advanced	◌̬	Velarized
◌̬	Retracted	◌̭	Pharyngealized
◌̭	Centralized	◌̮	Velarized or pharyngealized
◌̮	Mid-centralized	◌̯	Raised
◌̯	Syllabic	◌̰	Lowered
◌̰	Non-syllabic	◌̱	Advanced Tongue Root
◌̱	Rhoticity	◌̲	Retracted Tongue Root

Appendix B

The questions of pre-test

Full Name:

Gender: ☐ Male ☐ Female Age:

.....

Grade:

1. Complete the chart with the letters from the list.

/eɪ/	/i/	/ɛ/	/aɪ/	/u/	/oo/
	B	F			
H	C	L	Y	Q	
	D			W	
		N			
	P	X			
	V				
	Z				

2. Write the words in the chart.

smoke work does typical TV drive

/v/	/d/	/s/	/z/	/l/	/w/

3. Circle the word with a different sound.

/k/	country	cook	center	coffee
/g/	get	Germany	golf	go

4. Write the words in the chart.

book think brother nurse matches have

/b/	/θ/	/ð/	/m/	/n/	/h/

5. Write the past simple forms next to the correct sound.

/ oʊ /	drove
/ u /	
/ æ /	
/ ɛ /	
/ ɔ /	

6. Write the correct words in chart.
meet fine two six man wait

/ k /	country	cook	center	coffee
/ g /	get	Germany	golf	go
/ f /	she	fish	glasses	Russia

7. Write the correct words in chart.
Argentina not hotel where Japan

/ ar /	/ a /	/ ə /	/ oʊ /	/ ɛ /

Appendix C
The questions of post-test
Full Name:
Gender: ☐ Male ☐ Female Age:
Grade:

1. Complete the chart with the letters from the list.
A E G I J K M O R S T U

/ eɪ /	/ i /	/ ɛ /	/ aɪ /	/ u /	/ oʊ /	/ ɑ /
	B	F				
H	C	L	Y	Q		
	D			W		
		N				
	P	X				
	V					
	Z					

2. Write the past simple forms next to the correct sound.
came could had drove gave read said spoke swam took wore

/ oʊ /	drove
/ u /	
/ eɪ /	
/ æ /	
/ ɛ /	
/ ɔ /	

3. Write the correct words in chart.
meet you fine two six man eight three nice
in thank wait

/ I /	/ i /	/ æ /	/ u /	/ eɪ /	/ aɪ /

4. Write the correct words in chart.
Argentina twenty airport not hotel where are
copy Japan Mexico Wednesday hundred

/ ar /	/ a /	/ ə /	/ ɛ /	/ oʊ /	/ ɛ /

5. Write the words in the chart.
smoke work have does typical stand has TV
drive like cooks when

/ v /	/ d /	/ s /	/ z /	/ l /	/ w /

6. Circle the word with a different sound.

/ k /	country	cook	center	coffee
/ g /	get	Germany	golf	go
/ f /	she	fish	glasses	Russia

7. Write the words in the chart.
book housewife think brother nurse this matches
three men builder nephew have

/ b /	/ θ /	/ ð /	/ m /	/ n /	/ h /