The Effect of Form-focused Instruction on Pronunciation

Atsuko Kashiwagi
Showa Women's University

Michael K. Snyder
Showa Women's University

Inspired by a recent survey of high school students in Hokkaido, Japan, which showed that most students learn no phonetic alphabet in school, presumably because of recent Monbusho guidelines which promote "communicative" teaching methods in the English language classroom, and by their encounters with Japanese high school graduates who exhibit poor pronunciation of English, the authors undertook two studies to see if explicit instruction in phoneme production was useful in improving pronunciation. The studies, involving 1st and 2nd year students at a Japanese women's university, showed that explicit instruction in a phonetic alphabet and in phoneme production do have a beneficial effect on the over-all intelligibility of pronunciation.

北海道の高校で最近行われた調査によると生徒のほとんどは発音記号を授業で学んでいないという結果が出た。文科省の教育指導要領が「実際的なコミュニケーション能力」により重点を置くようになったことに関係があると推察されるが、その一方で大学に入学してくる学生の発音はコミュニケーションを行うために充分とは決して言えない。この研究では発音記号を使った明示的な発音指導が実際に学習者の発音を向上させるために効果があるかを探るために大学1・2年生を対象に調査を2回行った。調査の結果は発音記号を使った明示的な発音指導が学習者の全体的な発音をより「わかりやすく」するために効果があることを示した。

Background

The research in this paper was motivated by a simple observation: that students coming to university in recent years do not seem to know much about phonetic symbols. A survey conducted by Etsuyuki Usuda (Usuda, 2000), a high school teacher in Hokkaido, clearly shows this trend. Usuda found out that of the 194 students at his school who answered his survey, 59.3% of them had not learned phonetic symbols in junior high school as opposed to 25.3% who had. 57.2% of the same students answered no phonetic symbols had ever been taught in high school.

Lack of emphasis on phonetic transcription in the English classroom indicates de-emphasis of explicit instruction on segmental sounds. The authors feel that this is a result of the changing priorities of the educational guidelines issued by the Ministry of Education (now known as the Ministry of Education, Culture, Sports, Science and Technology). In the guidelines for 1979, Monbusho wrote, "The use of phonetic transcription is recommended as an instructional aid" (Monbusho, 1978). The most recent guidelines issued in 1999 for high school state that developing "practical communication skills" is the primary goal of English instruction (Monbusho, 1999, p.119). They further suggest that "analysis and explanation of the language be kept to a bare minimum" and that "more focus be placed on actually using the language" (Monbusho, 1999, p.120). Reference to phonetic transcription has been downgraded to "Phonetic transcription could be used as an instructional aid" (Monbusho, 1999, p.129). As a result, the teaching of phonetic symbols is now considered an optional classroom activity, rather than recommended, and the segmental sounds seem to receive a lot less attention in junior and senior high school. Instead of just teaching segmental sounds, teachers are now expected to have a "more balanced" approach to pronunciation, paying attention also to suprasegmental features such as stress, intonation and rhythm, which are at least as important as the segmentals in conveying meaning (Celce-Murcia, Brinton & Goodwin, 1996).

In principle, Monbusho's approach faithfully reflects what most teaching professionals now agree on: i.e., we have to move away from the monotonous teaching of discrete language units towards a more communicative learning environment. However, a simple question still lingers: Can pronunciation be taught effectively without explicit instruction in discrete phonemes or the use of phonetic transcription? Can learners implicitly learn L2 phonology if given sufficient aural input? And many teachers are struggling unsure of what actually to do.

Form-focused instruction is now receiving renewed interest in the teaching profession, and the emerging consensus is that explicit instruction and the resulting metalinguistic awareness on learners' part do promote learning (Ellis, 2001; Schmidt, 1995). If the question is whether adult learners can develop an advanced understanding of an L2 syntax without receiving explicit instruction in syntactical forms, the answer to many will probably be a definite no. However, when it comes to pronunciation, the teaching of abstract rules not only seems to lose its appeal, but is often shunned as something not desirable.

What is complicating the discussions here and giving pronunciation a kind of "special status" is the particular difficulty which adults face in attaining native-like proficiency in pronunciation. Whether it is because of the maturation of the brain, psychomotor constraints, or social or psychological factors, a common observation is that adults invariably have a "foreign" accent regardless of their mastery of lexis, syntax and morphology (Avery & Ehrlich, 1992). The questions about whether pronunciation can be taught at all in the classroom lingered, and led many programs to pay less attention to pronunciation or drop it all together (Morley, 1991).

However, it is important to note that intelligible pronunciation is essential to effective communication. Hinofotis & Bailey (1980) showed in their research that there is a threshold level of pronunciation in English; if a non-native speaker's pronunciation falls below that level, he or she will not be able to orally communicate no matter how good their grammar or

vocabulary is. Learners themselves know this simple axiom very well. When their opinions are investigated, learners invariably give a very high priority to improvement of their pronunciation (Nunan, 1988; Willing, 1988).

Unfortunately, little is still really known about what kind of teaching actually contributes to L2 phonological development and how adult learners actually develop L2 phonology (Pennington & Richards, 1986). One of the few studies that give us some insight into pronunciation acquisition is the one conducted by Sheldon & Strange (1982). Studying the relationship between Japanese learners' ability to perceive /r/ and /l/ and their ability to produce the two consonants correctly, they found that perception does not necessarily precede production. By questioning the popular assumption that learners must first be able to hear the sounds correctly before producing them, they also cast serious doubts on the "listen and imitate" approach which had long been intuitively appealing to teachers. There are only a limited number of studies on the learning effects of different types of instruction in pronunciation. One (Derwing, Munro & Wiebe, 1998) concluded that explicit instruction both in segmental and suprasegmental features contributed to learners' phonological development. Another (Macdonald, Yule & Powers,1994) was less conclusive.

Purposes and research questions

A brief review of the literature shows that the decision by Monbusho not to require the teaching of phonetic symbols under the banner of communicative teaching is, in fact, not based on any solid empirical data. Monbusho's approach does not seem to reflect learners' needs, either. In the survey conducted by Usuda (Usuda, 2000), 77.3% of the students felt that phonetic symbols should be taught at school, and 53.6% of them felt that a knowledge of phonetic symbols is essential when learning pronunciation on their own. There is an urgent need for reliable data on how Japanese learners past puberty actually develop their L2 pronunciation, and specifically whether metalinguistic awareness of L2 phonetic rules helps learners improve their performance.

Two studies (Study I and Study II) were conducted in order to evaluate whether explicit knowledge of English segmental sounds is conducive to overall improvement in learners' pronunciation. The studies also tested the assumption of some that the best way to learn correct pronunciation is through listening, not by learning abstract knowledge. This assumption holds that learners must first develop an "ear" for English sounds for them to imitate them. This assumption serves to play down the importance of phonetic transcription, and leads teachers who believe this to think that learners will just "pick up" the correct pronunciation if given good aural models.

The studies

Participants

A total of 39 second-year Japanese students majoring in English at a women's junior college in Tokyo participated in Study I conducted in January of 2003. Study II was conducted in July of 2003 to replicate Study I with a larger group of subjects. In Study II, a total of 75 Japanese students participated; 10 of them were first-year students at a women's junior college majoring in English and 65 were first-year students at a women's university majoring in liberal arts, whose studies include four 90-minute English classes per week. All of the participants had gone through six years of English instruction in the regular

Japanese school system. The 39 participants in Study I had experienced a three-and-a-half-month study program in the United States between September and December of 2001. None of the participants in Study II had stayed overseas for extensive periods of time.

Procedures

In Study I, the participants were divided into two groups and each group had a 13-week pronunciation course taught by the same instructor. In class, they received extensive pronunciation instruction including explicit explanation of the articulatory positions of both English consonants and vowels, practice both in drill-type activities and in more communicative interactions, listening exercises, and self-monitoring activities. The course also had a heavy focus on suprasegmental aspects, which were explained explicitly and practiced extensively. Phonetic symbols were used extensively in the course to reinforce learning. *Pronunciation Plus* (Hewings & Goldstein, 1998) was chosen as the course material, heavily supplemented by *Mother Goose Jazz Chants* (Graham, 1994).

For the purpose of the study, five English vowels, /æ/ /ɑ/ /ʌ/ /ou/ /ɔ:/, were selected which present particular difficulty to Japanese learners. At the end of the 13 weeks, the participants were evaluated on the following four areas.

1) Knowledge: This was tested by means of a 29-item multiple choice test in which the participants were asked about the correct articulatory positions of the five vowels represented in phonetic symbols. They also identified the vowels in common English words by selecting the appropriate phonetic symbols. Many of the vowels in this section of the test also appeared in Passage Reading.

2) Perception: The participants took an 85-item test of how well they could aurally distinguish three minimal pairs of vowels—/æ/-/ɑ/, /ɑ/-/ʌ/, /ɔ:/-/ou/—which were presented in pairs of words containing the target vowels and the students were asked to identify the vowel sound they heard in each word. For Study II, the number of items was increased to 120 and the vowels were read more slowly in an attempt to make this part of the test less difficult.

3) Vowel Reading: The participants were asked to read five different sets of each of the three minimal pairs mentioned above. Their reading was recorded and rated by three independent raters. The participants received points when they could correctly produce both vowels in a given minimal pair. Prior to their reading, a native speaker model was played; the three minimal pairs were also presented in phonetic symbols.

4) Passage Reading: For this part of the test, the participants read a short passage aloud. Before reading the passage, they listened to a native speaker model; they were also given time to study the text and look up phonetic transcription of words in a dictionary if necessary. The reading was recorded and rated by three independent raters on a scale of 1 to 7, with 1 indicating unintelligibility and 7 indicating near-native speech (see Appendix).

Study II specifically investigated the correlation between Passage Reading, and Knowledge and Listening, with a larger group of learners. The 75 participants were divided into four groups and each group went through a 13-week pronunciation course similar to that of the first study, taught by the same instructor. The same testing procedures as the first study were carried out. The tests were also conducted in the beginning of the pronunciation course to obtain pre-treatment data.

Method of analysis

In both Study I and II, the correlations between the parts of the test were calculated, using Pearson's correlation coefficients. Reliability estimates for the multiple-question sections of the test (Knowledge and Perception) were calculated using the Spearman-Brown Split-Half coefficients. Inter-rater reliability estimates between the three raters for Vowel Reading and Passage Reading were calculated using Cronbach Alpha. All the statistical analyses were performed with Statistical Product and Service Solutions Windows 7.5 Version (SPSS inc., 1996).

Results and discussion

Study I

Descriptive statistics and a correlation matrix from Study I are presented in Table 1.

A significant correlation was observed between Knowledge and Vowel Reading ($r = .401^*$, $p < .05$), suggesting that metalinguistic knowledge about phonemes contributes to better production of discrete vowels. No correlation was found between Perception and Vowel Reading, supporting the claim by Sheldon & Strange (1982) that learners' ability to perceive sounds correctly does not necessarily precede production. A closer look at the data gives us further evidence for their claim; there were 7 participants who were able to perfectly produce five sets of the /æ/-/ɑ/ pair, yet none of them had a perfect score in the listening test of the same minimal pairs. Other students had similar results for the other minimal pairs (See Table 2).

The listening scores also varied widely among the participants, hinting at large individual differences in how they learn to produce English sounds. This is in line with what Lightbown & Spada (1993) conclude---that the past research in learner

Table 1. Descriptive statistics and a correlation matrix (Study I)

Measure (total possible)	Mean SD	Reliability	1	2	3	4
1.Knowledge (29)	17.18 4.10	.894	___			
2. Perception (85)	52.82 11.91	.933	.217	___		
3. Vowel Reading (30)	22.90 3.39	.821	.401*	.296	___	
4. Passage Reading (evaluated on 1-7 scale)	3.29 .66	.819	.290	.181	.334*	___

N = 39* = p < .05; ** = p < .01

differences "suggests that different learners approach a task with a different set of skills and preferred strategies." The data here also lend support to their claim.

There is a significant correlation between Vowel Reading and Passage Reading ($r = .334$*, $p < .05$), suggesting that correct production of discrete vowel sounds can lead to more intelligible pronunciation on the whole. A rather weak correlation should be expected, as factors other than vowel sounds influence the overall impression of good pronunciation, such as consonants, suprasegmental features (i.e., rhythm, stress, intonation, linking), and voice quality settings (i.e., pitch level, vowel space, neutral tongue position, and degree of muscular activity) (Celce-Murcia, Brinton & Goodwin, 1996). No correlation was found directly between Knowledge and Passage Reading possibly because of a small group size.

Study II

Descriptive statistics and a correlation matrix from Study II are presented in Table 3.

A significant correlation between Knowledge and Passage Reading was found in Study II. In the pre-test conducted in the beginning of the pronunciation course, there was no correlation between Knowledge and Passage Reading (pre-test $r = .113$ compared to the post-test $r = .328$**). The students' phonetic knowledge significantly improved when compared to the beginning of the course ($t = 13.78$**). The performance of the students in reading the test passage also showed a significant improvement ($t = 18.19$**). These results seem to suggest that when abstract rules of discrete phonemes are learned, they can be turned into automatic, productive use, resulting in better overall performance. Passage Reading was also significantly correlated to Perception,

Table 2. Listening scores of high performers in vowel reading

/æ/-/ɑ/		/ɑ/-/ʌ/		/ɔ:/-/ou/	
Student No.	Score (%)	Student No.	Score (%)	Student No.	Score (%)
5	88.6	6	51.4	9	80.0
6	68.6	11	37.1	13	62.1
21	94.3	22	31.4	32	83.3
23	97.1	29	62.6	39	86.7
25	97.1	30	34.3		
29	62.9				
30	48.6				

showing that perception abilities could play as important a part as explicit knowledge in developing L2 phonology.

This result differs from what was obtained in Study I, where no significant correlation was found between Perception and Passage Reading, probably because the Listening test in Study II had more items, and each vowel was read more slowly than in Study I in an attempt to make the contrast in the minimal pairs more noticeable (The average listening score in Study I was 62.5%; the average post-test score in Study II was 72.5%).

The importance of perception, though seemingly running counter to the findings of Sheldon & Strange (1982), does not contradict them. They did not claim that perception and production of sounds were independent of each other; they only argued that perceptual mastery of phonemes does not necessarily precede adult learners' ability to produce them. They also recognized the possibility that when a larger group of learners was investigated, a positive correlation between the two factors could emerge.

The correlation between Knowledge and Perception is also of significance. Though it may simply show that good test takers perform well in both sections, it also suggests that a better metalinguistic awareness helped learners improve their perception, and vice versa. And both of them, by interacting closely with each other, contributed to the overall production.

Conclusions

The two studies suggest:

1) Explicit knowledge of phonemes plays an important role in improving L2 phonology.

Table 3. Descriptive statistics and a correlation matrix (Study II)

Measure (total possible)	Mean SD	Reliability	1	2	3
1.Knowledge (29)	20.39 4.14	.906	___		
2. Perception (120)	87.45 12.75	.941	.440**	___	
3. Passage Reading (evaluated on 1-7 scale)	3.90 .60	.783	.328**	.311**	___

N = 75 * = $p < .05$; ** = $p < .01$

2) Perception of phonemes could also contribute to a better grasp of L2 phonology.

3) Perceptual mastery of vowels sounds does not precede the ability to produce them.

The authors understand that these results do not necessarily indicate any causal relationship. However, when interpreted in the context, they do seem to indicate that when declarative knowledge about phonemes is gained, it might lead to better overall performance, just as explicit knowledge about grammatical rules might promote acquisition. Perception is also relevant in the development of L2 phonology, even though perfect perceptual ability is not required in order to produce the sounds correctly.

The findings in the two studies are a strong argument supporting the usefulness of explicit instruction in phonetic symbols in school. The data show that a significant number of learners could benefit from the teaching of abstract rules. In the interviews conducted after Study II, a large number of participants commented not only that explicit instruction coupled with phonetic transcription helped them learn to produce English sounds better, but also that being able to produce sounds better led them to hear the sounds better. These student comments seem to support our findings.

By pointing out the importance of explicit instruction, the authors are by no means suggesting that teachers once again subscribe to the traditional mode of a rigid teaching sequence, where presentation of abstract rules must come first, followed by practice and error correction until the rules are mastered. Teachers must be aware that "explicit instruction does not lead directly to automatic, productive use, but direct instruction, consciousness-raising, and a focus on form are valuable to the extent that they help learners bring order to the input they encounter, facilitate understanding, and boost or support natural acquisition" (Schmidt, 1995, p. 4). Efforts should be made to explore how direct instruction of rules can be incorporated within a communicative framework.

Suggestions for future studies

Even though the two studies reported here produced some important information, they nonetheless have some limitations. The participants were evaluated on their reading of a prepared passage, but there is some doubt about whether pronunciation shown in the reading of a text can be retained when the participants engage in spontaneous speech. (Celce-Murcia, Brinton & Goodwin, 1996). Further empirical investigations are needed to test how much of the metalinguistic awareness could carry over to truly spontaneous speech in which more attention must be paid to meaning, not to form.

References

Avery, P. & Ehrlich, S. (1992). *Teaching American English pronunciation.* Oxford; Oxford University Press.

Celce-Murcia, M.; Brinton, D. M.; & Goodwin, J. M. (1996). *Teaching pronunciation: A reference for teachers of English to speakers of other languages.* Cambridge: Cambridge University Press.

Derwing, T. M.; Munro, M. J.; & Wiebe, G. (1998). Evidence in favor of a broad framework for pronunciation instruction. *Language Learning, 48*(3), 398-410.

Ellis, R. (Ed.).(2001). *Form-focused instruction and second language learning.* MA: Blackwell Publishers.

Graham, C. (1994). *Mother Goose: Jazz Chants.* Oxford: Oxford University Press.

Hewings, M. & Goldstein, S. (1998). *Pronunciation Plus: Practice through interaction*. Cambridge: Cambridge University Press.

Hinofotis, F. & Bailey, K. (1980). American undergraduate reactions to the communication skills for foreign teaching assistants. In Fisher, J., Clarke, M., & Schacter, J. (Eds.), *On TESOL '80: Building bridges* (pp. 120-133). Washington, DC: TESOL.

Lightbown, P. M. & Spada, N. (1993). *How Languages are Learned.* Oxford: Oxford University Press.

Macdonald, D.; Yule, G.; & Powers, M. (1994). Attempts to improve English L2 pronunciation: The variable effects of different types of instruction. *Language Learning, 44*(1), 75-100.

Monbusho. (1979). *Kotogakko gakushu shido yoryo* [The Ministry of Education educational guidelines for junior high school]. Tokyo: Okurasho Insatsu-kyoku.

Monbusho. (1999). *Kotogakko gakushu shido yoryo* [The Ministry of Education educational guidelines for high school]. Tokyo: Okurasho Insatsu-kyoku.

Morley, J. (1991) The Pronunciation component in teaching English to speakers of other languages. *TESOL Quarterly, 25*(3), 481-520.

Nunan, D. (1988). *The learner-centered curriculum.* Cambridge: Cambridge University Press.

Pennington, M. C. & Richards, J.C. (1986). Pronunciation revisited. *TESOL Quarterly, 20*(2), 207-225.

Scovel, T. (1969). Foreign accent: Language acquisition and cerebral dominance. *Language Learning, 19*, 245-254.

Schmidt, R. (Ed.). (1995). *Attention and awareness in foreign language learning.* Honolulu: University of Hawai'i Press.

Sheldon, A. & Strange, W. (1982). The acquisition of / r / and / l / by Japanese learners of English: Evidence that speech production can precede speech perception. *Applied Psycholinguistics 3*, 243-264.

Usuda, E. (2000). "Hatsuon shidou ni kanshite no ikkousatsu" [A Consideration of pronunciation instruction]. *Argument*. Obunsha, Co., Ltd. Online. Available: <http://www.obunsha.co.jp/argument/tokushu/oral/0001.html>.

Willing, K. (1988). *Learning strategies in an adult migrant education*. Adelaide: NCRC.

Appendix

Evaluation Criteria, adapted from Speech Intelligibility Index (Morley, 1991)

1. Speech is basically unintelligible; only an occasional word/phrase can be recognizable.

2. Speech is often unintelligible; great listener effort is required. Native speakers unaccustomed to Japanese speakers will have a hard time understanding it.

3. Speech is somewhat intelligible; parts of the speech are still difficult to understand even with effort. Speech is marked with pronounced accent and choppy delivery.

4. Speech is reasonably intelligible. While speech is still rather choppy and marked with accent, listeners can understand if they concentrate on the message.

5. Speech is largely intelligible. While sound and prosodic variances from NS norm are still evident, they do not impede greatly with comprehension. Delivery is rather smooth.

6. Speech is intelligible. Sound and prosodic variances from NS norm still exist but do not impede much with comprehension. Delivery is smooth.

7. Near-native speech.