

# Efficacy in Accent Modification Services: Quantitative and Qualitative Outcomes for Korean Speakers of American English

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## **Abstract**

*Instructors of accent modification programs find few long range efficacy studies that they can use to critically examine the effectiveness of their training programs. Fewer still limit the language background variables of the study participants that might yield interesting information about specific instructional strategies and targets. This long term study examines outcomes data from 167 Korean men and women who participated in the MU (University of Missouri) Accent Modification and Pronunciation Program (AMP) from 2006-present. Quantitative data will include pre- and post- measures using the Sentence Intelligibility Test (Yorkston, Beukelman, & Tice, 1996), the POEC Screen Online (Sikorski, 2009), and qualitative data will include information obtained through surveys of individuals who have completed the MU AMP program. The authors discuss multisensory methods used in this program to effect positive change in adult English as a Second Language (ESL) oral skills.*

## **Background**

Services provided by speech-language pathologists (SLPs) in accent modification (variably termed accent reduction, accent improvement, pronunciation training, etc.) have been steadily growing within our profession both nationally and worldwide. ASHA (2011) clearly supports professional preparation of future professionals in accent modification. One of the challenges to the assessment and instruction of second language speakers of North American English (NAE) is measuring efficacy. However, relatively few studies in the field are available for instructors to evaluate their effectiveness in addressing the communicative competence of their NAE clients (assessment, goal setting, format design, prioritizing instruction, etc.) (Sikorski, 2005). A 50+ year history of research does exist among professionals who are Teachers of English to Speakers of

Other Languages (TESOL), or otherwise engaged exclusively in the roles of English as a Foreign Language (EFL), English as a Second Language (ESL), and more recently, English as an international language (Scales, Wennerstrom, Richard, & Wu, 2006). To determine whether positive change in communication has occurred, recent literature also suggests it is vital to, as Trofimovich and Isaacs (2012) describe it, “disentangle” the three core factors typically central to intervention for these ESL speakers: accent, intelligibility and comprehensibility.

In line with previous research, the authors adopt the definition of the term, accent, as: “how closely the pronunciation of an utterance approaches that of a native speaker” (Trofimovich & Isaacs, 2012, p. 905). SLPs are familiar (and typically comfortable) with their understanding of the clinical definition for intelligibility. In the fields of speech, hearing, and language, there is a significant body of research on the relationship between motor speech disorder decrements and speech intelligibility. Historically, intelligibility ratings for both impaired and for second language speakers typically were measured by examining listeners’ transcription accuracy of second language (L2) speech or disordered speech (Keintz, Bunton, & Holt, 2007). However, there is a newer, evolving term gaining favor as the optimal determiner of communication competence: comprehensibility. Indeed, Sikorski (2005) notes that the term comprehensibility is generally preferred within the TESOL community of professionals. Intelligibility measurements and/or rating scales are objective: they are quantifiable by transcription accuracy. However, the companion component, comprehensibility “denotes listeners’ perceptions of understanding as measured by listeners’ scalar rating of how easily they understand speech” (Trofimovich & Isaacs, 2012, p. 906.) Future research on the relationship between the two concepts is valid and necessary. For instructors to confidently design strategies that will result in time-efficient “readable” speech, they need to have assessment tools that truly correlate trained observations with the realities of listeners’ subjective impressions.

The terminology above is not without controversy. Many feel that looking at intelligibility issues implies communicative competence. These authors simply suggest that for L2 communication, a host of additional variables are present that are not always present for disordered speech. Qualitative and quantitative outcomes can be examined from the perspectives of either intelligibility or comprehensibility, building a framework for the discussion of accent.

For the scope of this project, the authors use the principles of intelligibility (as defined above) to determine quantitative and qualitative outcomes of a specifically designed accent improvement program. This study evaluates the communicative competence of Korean speakers of NAE before and after participation in the Accent Modification & Pronunciation Program (MU AMP). The MU AMP has been in operation since January, 2006. Nearly 250 individuals from 14+ countries have participated in MU AMP; 167 were visiting scholars from Korea. The instructional focus of this program has been on: NAE intonation, co-articulation and pronunciation of NAE vowels and consonants.

## **Method**

### **Study Participants**

At the end of the Korean War, President Truman designated several universities in the United States where qualified Koreans could receive a free education. One of the selected universities was the University of Missouri in Columbia. Even though education is no longer free to Koreans at these designated universities, this historical relationship continues to this day between the Korean government and the University of Missouri (MU).

Of the various language backgrounds in the MU AMP program, Korean first language speakers represent the highest percentage of MU AMP graduates since 2006. The study participants are 167 adult Korean visiting scholars who were participants (2006–2013) in educational opportunities offered through the Asian Affairs Center (AAC) at MU. Participants were selected based on availability of complete records for all requisite study parameters,

completion of qualitative questionnaires, and formal permissions. They were predominantly government officials and educators, ranging in age from 25–56. All participants took MU courses and participated in educational tours through AAC for about two years. Men and women are equally represented in the study. Nearly all come with their families to the Midwest with the goal of taking an active role in learning English as well as American culture. Notably, they become highly involved in local school, church and community activities during their tenure at MU.

## ***Relevance of Korean Population as a Single Study Group***

While an in-depth cross-linguistic comparison (Korean/English) is not germane to this study, it is valuable for the reader to appreciate the significance of these speech differences and their potential impact on: (1) Korean speakers' self-rating of their communicative competence, (2) native speaker intelligibility ratings and (3) outcomes, and (4) experienced and novice examiner familiarity with Korean speakers in particular. Further, current United States population and education trends suggest that the influence on Korean ESL speakers will only increase. Approximately 29% of the 39 million Korean foreign born in the United States arrived post 2000 (Migration Policy Institute, 2012).

## ***Population Statistical Detail***

It is estimated that there are approximately 75 million first-language speakers of Korean worldwide, yet only 10% permanently live outside the Korean peninsula. Four to six regional dialects exist on the peninsula; however, they are generally comprehensible to all Korean speakers (Kim & Pae, 2007).

According to the 2010 American Community Survey, U.S. Census Bureau, here are relevant migration details for the United States:

- 28 United States with < 1% Korean population
- 14 states 1%< 4.9%
- 3 states 5–10%
- 1 state (CA) 31+%
- Notable concentrations of 30,000+ in: Los Angeles, CA (200,000+), Seattle, WA, New York, NY, Washington, DC, Chicago, IL, Atlanta, GA, and Philadelphia, PA
- The Korean foreign born made up the sixth-largest immigrant group to obtain citizenship

As of 2003, Korean citizens made up the second-largest group of foreign students in the United States, second only behind Japanese nationals. It is interesting to note that, although Missouri is not represented on the 2010 state census information cited above, Truman's historical impact on Missouri university policies have resulted in a unique concentration of adult Korean scholars immersed in the language learning and cultural opportunities in this state. It is clear that improving the efficacy of accent improvement programs would significantly impact the immediate communities. Additionally, while Koreans do not represent the majority of migrants to the United States, efficacy studies of advanced ESL programs for this group are relevant to the United States at large.

## ***Language Background Characteristics***

As Korean first language speakers, these study participant's present unique challenges to the instructors in the AMP program, influencing both the range of instructional targets and the priorities chosen for instruction. The Korean sound system differs greatly from that of English. Korean includes 19 consonants, 10 diphthongs, and 7 monophthongs. In Korean, there are few

word-final consonants, and there are initial or final consonant blends/clusters. Although both Korean and English allow for allophones, there is little overlap in variation rules. For example, as a function of phonetic context, /s/ can be pronounced as /s/, /ʃ/ or /z/ (Yavas, 2006). Voicing as a function of allophonic change (and as a phoneme property) also varies significantly. Prosodic features of stress, pitch, and timing (i.e., syllable-timing v. stress-timing) continue the polarity. For example, in addition to exhibiting syllable-timing (as opposed to the stress-timing of English), stress characteristics of loudness and duration (critical to English) do not play an important role in Korean stress marking (Avery & Ehrlich, 1992).

## **Study Components**

### **Assessment**

Each semester began with a short evaluation, consisting of a conversational sample, a reading sample (*The Rainbow Passage*), and phoneme targeted sentences. Baseline and end line data was also obtained using:

1. Sentence Intelligibility Test (SIT; Yorkston et al., 2006) transcribed by three unfamiliar American listeners. In this assessment, the clinician presented fourteen grammatically correct, albeit semantically unpredictable, sentences of increasing length to their AMP participants. These sentences were recorded by the clinician who would ultimately work with the AMP participants. These recordings were sent by regular email, through Blackboard voice email or via podcast to three unfamiliar American listeners (typically college students) who then transcribed what they heard – listening to each sentence up to two times only. The unfamiliar listeners emailed these transcriptions back to the AMP clinician who then reviewed and scored the transcription by dividing the number of words understood by the total number of words in the original recording of SIT sentences. This resulting percentage became the AMP participant’s baseline intelligibility or understandability rating.

Although created for the assessment of dysarthric speech (with the initial premise that test takers are first language English speakers), the SIT is an effective, discriminating tool in establishing how well unfamiliar listeners can understand the speech of Korean first language users. Given the terminology as defined at the beginning of this article, the SIT is essentially an intelligibility measurement. While it does quantify transcription for untrained listeners (a component of comprehensibility), it only partially addresses possible interference with transcription from ESL issues: grammatical and linguistic errors, phonological and intonational differences. Again, unfamiliar listeners were asked to only listen to the sentences up to two times before transcribing them and the semantically unpredictable SIT sentences increased in length – demanding better performance in intonational contour with longer sentences where improved phrasing would be required.

2. POEC Screen (Sikorski, 2009) is an assessment tool that screens for English language output rules, such as phonological variation rules, stress and pitch rules for word and extended speech, etc. Again, utilizing the definitions for comprehensibility and intelligibility given above, this tool is primarily a comprehensibility instrument, since it weights issues that impact native English “understanding as measured by listeners’ scalar rating of how easily they understand speech” (Trofimovich & Isaacs, 2012, p. 906). Because data collection for the study began prior to the introduction of this screening tool, not all participants in the current study have POEC Screen outcome data.

3. Qualitative survey given at the beginning and end of the semester for the scholars to self-evaluate their own progress. Progress cannot be completely gauged by quantitative measures of understandability. As the MU AMP program continued to grow, we realized we were not effectively measuring or documenting our participants’ perception of their own progress, so this survey was designed to delve into these more personal perceptions of the effectiveness of the AMP program.

## **Instructional Format and Content**

AMP participants attended 11–13 paired or small group sessions per semester (50-minute sessions, 1x per week). Attendance and active participation within each session were strengths of the program, with an overall attendance rate of 88% for the 167 participants. Weekly sessions focused on a different aspect of North American English pronunciation with focused targets based on information gained from the initial evaluation. An interactive exchange was encouraged with the AMP clinicians providing clear auditory, visual and tactile cues when introducing phonemes and intonational contours (stress and pitch changes across words and messages). Visual cues included modeling of tongue placement, pictures of tongue positions and hand gestures showing movement of the tongue and other articulators. Additionally, the clinicians often utilized a mirror to model articulatory placement side-by-side and a dry erase board to write out pronunciations phonetically (most of the Korean participants had learned IPA as a part of their English language learning in Korea) or to provide a visual model of the participant's production of a word or intonational contour. Written rules and verbal explanations were also used by the clinicians for coarticulation, rhythm, intonation, and pausing to assist participants in becoming more proficient in American English communication.

## **Results**

In terms of the quantitative measures, when viewed as a whole, AMP participants had a mean baseline intelligibility rating of 74.7% and end line intelligibility rating of 83.9% when using SIT unpredictable sentences evaluated by unfamiliar listeners as a rating of understandability (SSD;  $p < .001$ ). When this group data was divided into tiers based on baseline understandability and compared using paired samples t-tests, statistically significant gains were also observed (SSD;  $p < .001$ ). See Table 1 (Andrade & Fritz, 2013; Fritz, Keller, & Sieker, 2010).

*Table 1. Comparison of Pre- and Post AMP Participant Intelligibility*

Tier	Number of AMP Participants	Average Improvement
Tier I < 50% on SIT at baseline	14	22.7**
Tier II 50-75% on SIT at baseline	63	12.6**
Tier III > 75% on SIT at baseline	90	4.4**

*Note.* \*\* $p < .001$  in paired samples t-tests

In evaluating qualitative measures, AMP participants who participated in the survey of their perception of their own communication abilities before and after their participation in the MU AMP program, said they were likely to recommend the MU AMP program to future scholars. Overall, they felt the intense, explicit work on American pronunciation skills within this program was beneficial to them and contributed positively to their ability to communicate and interact with Americans. See Charts 1–3.

Chart 1. Self Evaluation of English Communication Skills by Korean AMP Participants

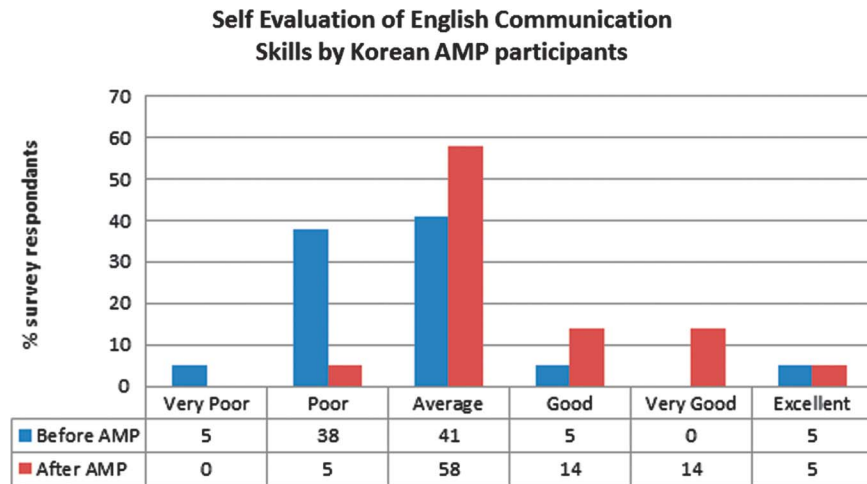


Chart 2. Self Evaluation of NAE Pronunciation Skills by Korean AMP Participants

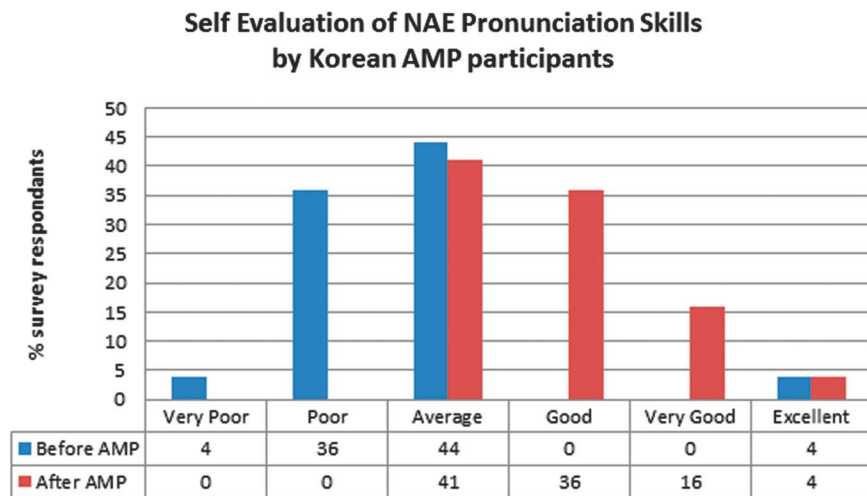
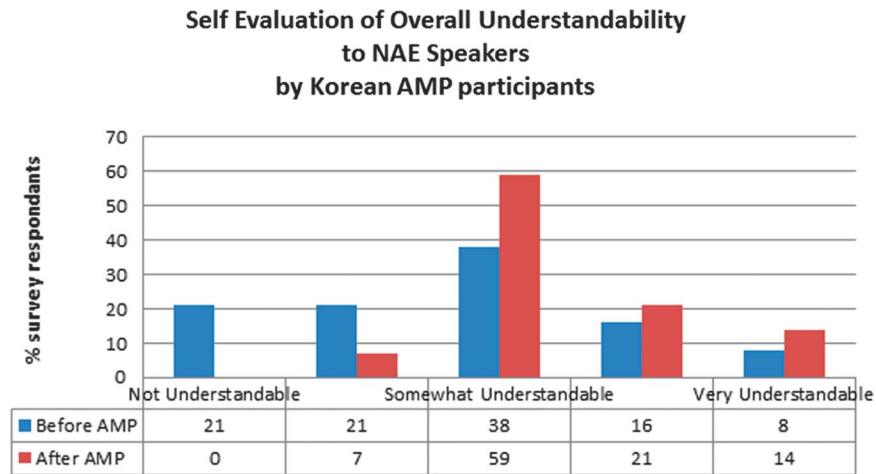


Chart 3. Self Evaluation of Overall Understandability to NAE Speakers by Korean AMP Participants



## Discussion

### Quantitative Outcomes

MU AMP participants were highly motivated to improve their American English pronunciation. This motivation led to high rates of attendance, intense practice inside and outside of the sessions and a willingness to use critiques provided by the clinicians to improve their skills.

Besides notable group data improvements, many factors contributed to individual successes within the MU AMP program. Participants who exhibited better comprehension of the English language, finer auditory discrimination abilities, and a willingness to accept suggested corrections often experienced the greatest gains in their English language proficiency. While some errors persisted in the participants' American English communication, most exhibited increased abilities to correctly articulate previously difficult phonemes and apply more native-like intonation and prosodic features of American English.

### Qualitative Outcomes

Results from the self-evaluation survey revealed that many of the participants were not confident with their English communication and pronunciation prior to participating in the MU AMP program and indicated that American listeners had difficulty understanding them.

After explicit instruction in the MU AMP program, these Korean scholars expressed that they were more confident in their English communication and pronunciation skills. They believed that they were more likely to be understood by American listeners, and were therefore more likely to talk and interact with Americans, and in so doing, obtain more practice in proficient pronunciation.

## Conclusions

This venue is an excellent study center for future research. With its reputation secure, significant numbers of Korean participants are assured, which is ideal for longitudinal studies with participants going forward. Additionally, the MU AMP program will continue to provide important participant diversity within this language group (language proficiency, age/sex diversity, variability of adult communicative requirements/professions, etc.).

This current project was designed as an initial foray on the global efficacy of accent improvement programs. As such, the authors acknowledge its limitations.

The initial explorations of the efficacy of the MU AMP communication program validate not only the program design but also the perceived value (qualitative outcomes) of both participants and their listeners (Dromy & Benson, 2003). Until this decade, learner perceptions of accent, as well as their opinions of the perceived value of accent programs, have been largely ignored in research. There are two seemingly contradictory perceptions of how pronunciation skills should be taught. The term *nativeness* suggests that the model for learners to strive for (and to be measured against) is what is labeled the “North American (NA) dialect” model. Counter to this is the ‘intelligibility’ model: learners should seek to be understood by native listeners despite the presence of a (possibly) heavy accent (Scales, et al., 2006). Munro and Derwing (1994, 2001) argue forcefully that a native NA accent is unnecessary for intelligibility. Needless to say, there is significant controversy in the field of TESOL today and, perhaps, our own field.

The Scales study analyzed the perceptions of English language learners about their personal accents, their target pronunciation ideals and their ability to rate accent samples for preference as well as intelligibility. 62% of these learners stated that their goal was nativeness. What was particularly striking about this study is that only 16% of the study participants listed living in the United States permanently as their primary motivator for accent improvement. Like the participants in the MU AMP program, 70% of the participants in the Scales study listed education or business needs (54%) as the primary drivers for their continued efforts at improving their accent. While the study was limited in scope, it clearly addresses philosophical issues that may or may not divide the learner from the instructor community.

The MU AMP survey results indicate a clear correlation between accent self-perception and listener understandability. Going forward, the qualitative survey could be expanded to include more quantifiable data that reveals participants’ perception and rating of accents in general and where their personal communication fits in the continuum. Ongoing review of their concerns could assist in the instructors’ ability to: (a) clearly demonstrate to (thus, motivate) participants the rationale behind certain target choices and practice strategies, (b) measure outcomes more objectively against participants’ post-program self-ratings, and (c) maintain and/or increase motivation and d) increase recommendations.

The authors plan further research on the relationships between perceived accent, intelligibility and comprehensibility. More research on the relationship between accent and comprehensibility is needed if we are to further refine both the assessment and approach strategies for building more effective (and time-efficient) English skills. Separate studies on assessment and on instruction are both feasible and needed. The introduction of more formalized measurements of English language fluency will open the door to expanded research on the relationship of grammar and vocabulary to quantitative and qualitative perceptions of accent. A separate study of the instructional efficacy of incorporating the supersegmentals (stress/pitch rules and rhythm issues unique to NAE) will give guidance on instructional priorities and support existing research on the topic (Setter, 2006; Ling Low, 2006). Finally, it is important to study the concept of rating scales for the oral communication skills of second language speakers. Exploring greater (weighted) inclusion of suprasegmental characteristics in intelligibility rates scales for ESL merits more research (Trofimovich & Isaacs, 2012). The authors plan to expand assessments for MU AMP to include more formalized suprasegmental feature testing (POEC Screen Online, 2009). Pre- and post- program measurements of NAE intonational characteristics (suprasegmentals) will be examined relative to ratings (independent or combined) for accent, comprehensibility and intelligibility.

There are unilateral studies on efficacy of intelligibility measures within the separate fields of speech pathology (Keintz et al., 2007) and of ESL or (formal) linguistics (Setter, 2006). The authors would like to see cross-field studies of these measures and their unique applications to our North American-based, ESL adults in English improvement programs. The authors welcome



their ASHA colleagues to join their fellow professionals in TESOL to generate more in-depth efficacy studies, especially for the concepts of intelligibility and comprehensibility.

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