THE EFFECT OF LONG-TERM INSTRUCTION ON A BRAZILIAN LEARNER'S PRODUCTION OF ENGLISH VERBS ENDING IN –*ed*

O Efeito da Instrução a Longo Prazo na Produção dos Verbos do Inglês Terminados em -*ed* de uma Aprendiz Brasileira

Fernanda DELATORRE, UFSC[1]
Barbara O. BAPTISTA, UFSC[2]

RESUMO: Diferentemente de estudos anteriores, tais como Alves (2004) e Mariano (2009), o presente estudo tem como objetivo principal investigar o efeito da instrução na pronúncia de verbos regulares terminados em -*ed* produzidos por uma brasileira, graduanda de Letras/Inglês ao longo de aproximadamente dois anos. Este estudo também avaliou se a participante melhorou a pronúncia do morfema de maneira uniforme ou se variou de acordo com o contexto fonológico anterior. A ortografia e o nível de proficiência, variáveis importantes em estudos anteriores, foram levados em conta na discussão, mesmo que a proficiência não possa ser separada da instrução neste estudo. Os resultados demonstram que, depois de três semestres de estudo de pronúncia do inglês, de duas sessões de instrução de 90 minutos cada sobre a pronúncia do -*ed* e de instrução sobre a produção das consoantes do inglês, o erro frequente de epêntese vocálica diminuiu consideravelmente, corroborando estudos anteriores. Foi constatado também que os contextos não-vozeados exceto /t/ induziram maior índice de epêntese vocálica do que os vozeados exceto /d/, corroborando estudos anteriores, e que houve uma melhora bem menos acentuada nos contextos não-vozeados. Por último, os verbos com /t/ ou /d/ como contexto precedente foram corretamente produzidos na grande maioria dos casos, o que não surpreendeu dado que a produção correta nesses contextos exige uma vogal, portanto este contexto não melhorou com a instrução. A ortografia destes verbos pareceu induzir a produção da epêntese vocálica enquanto que a instrução ou o aumento na proficiência na língua pareceu colaborar para diminuir este efeito.

PALAVRAS-CHAVE: verbos regulares do inglês; epêntese vocálica; instrução; estudo longitudinal

ABSTRACT: Differently from previous studies, such as Alves (2004) and Mariano (2009), the present study investigated the effect of instruction on the production of regular verbs ending in -*ed* by an undergraduate female Brazilian EFL learner in a period of about two years. Moreover, it also investigated whether improvement was fairly uniform or varied according to preceding phonological context. Orthography and proficiency level, important variables in previous studies, were considered in the discussion of results, although proficiency is not separable from instruction in this study. Results demonstrate that, after three semesters of pronunciation instruction, including two 90 minute sessions on -*ed* pronunciation and a session on English

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[1] Doutoranda do Programa de Pós-Graduação em Inglês: Estudos Linguísticos e Literários da Universidade Federal de Santa Catarina (UFSC) e servidora técnico-administrativa em Educação (UFSC).
[2] Professora Associada II aposentada do Departamento de Língua e Literatura Estrangeiras e do Programa de Pós-Graduação em Inglês da Universidade Federal de Santa Catarina (UFSC). Doutora em Linguística Aplicada pela University of California, Los Angeles (UCLA).

consonant pronunciation, the frequent error of vowel epenthesis was drastically reduced in the production of this morpheme, corroborating the results of previous studies. It was also found that preceding voiceless contexts except /t/ induced higher rates of vowel epenthesis than voiced contexts except /d/, corroborating the results of previous studies, and that there was much less improvement in the voiceless contexts. Finally, verbs in which the -*ed* was preceded by /t/ or /d/ were usually accurately produced, not surprising since the accurate pronunciation does require a vowel, and thus did not improve with instruction. Orthography of -*ed* ending verbs seemed to have induced vowel epenthesis, whereas instruction/increased proficiency level seemed to have decreased the orthographic effect.

KEYWORDS: English regular verbs ending in -*ed*; epenthetic vowel; instruction; longitudinal study.

1. INTRODUCTION

International research on past-tense verbs has focused mostly on the acquisition of both regular and irregular verbs by young and adult native speakers or bilinguals of English and/or French (BERMÚDEZ-OTERO; MCMAHON, 2006; BYBEE, 2001, 2010; BYBEE; MODER, 2007; BYBEE; SLOBIN, 2007; HARE; FORD; MARSLEN-WILSON, 2001; NICOLADIS; PARADIS, 2012; PARADIS, 2010; PARADIS; NICOLADIS; CRAGO, 2007; PARADIS; TREMBLAY; CRAGO, 2008; ULLMAN, 1999). Since these studies deal with the acquisition of past tense verbs, no attention is paid to -*ed* morpheme pronunciation. However, it is an important issue to be addressed when the investigation involves non-native speakers of English. In this regard, Prator and Robinet (1985) list (a) the addition of a syllable, as in *robbed* [rɔbɪd]; (b) the pronunciation of the -*ed* as /t/ after approximants and vowels, as in *dared* [dært]; and (c) the omission of the -*ed* ending, as in *answered* [ænsər] as frequent pronunciation errors made by English non-native speakers.

Given that the addition of an epenthetic vowel (ALVES, 2004; BAPTISTA, 2001, 2002; DELATORRE, 2006a; FERNANDES[3], 2009; GOMES, 2009; PEREIRA, 1994) and the omission of the -*ed*, leading to verb production in their base forms (ALVES, 2004; DELATORRE, 2005, 2006b) appear to be common in Brazilians' pronunciation of the past tense -*ed*, it emerges as an important item to investigate in the area of pronunciation teaching.

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[3] This study discusses the intelligibility of regular verbs ending in -*ed* by Brazilian EFL learners but will not be described in detail here.

Only a few studies have investigated the effect of instruction on learners' production and/or perception of regular verbs ending in *-ed* (ALVES, 2004; MARIANO, 2009; SILVEIRA; ALVES, 2006). They found that pronunciation instruction, even over a short period of time, helped their Brazilian participants to deal with the perception and/or production of these verbs. Taking into account the positive effect of instruction found so far, the present case study investigated the possible influence of pronunciation instruction on the production of regular verbs ending in *-ed* by a female undergraduate student of English over a period of about two years of English instruction.

2. THE THREE *-ed* PRONUNCIATIONS AND EMPIRICAL STUDIES WITH BRAZILIANS

According to Marslen-Wilson and Tyler (1998), the simple past tense pronunciation of the approximately 160 irregular verbs is phonologically unpredictable, whereas the past tense pronunciation of the 10,000 regular verbs ending in *-ed* is quite regular. Thus, the *-ed allomorphs*[4] are pronounced, according to the assimilation processes that occur, as (a) [t] in verbs whose base forms end in voiceless obstruents other than /t/, such as *liked*; (b) [d] in verbs whose base forms end in vowels, sonorants, or voiced obstruents other than /d/, such as *played, screamed* and *loved*; and (c) [ɪd] or [əd] in verbs whose base forms end in one of the alveolar stops /t/ or /d/, such as *wanted* and *needed* (CELCE-MURCIA; BRINTON; GOODWIN, 1996; HAGEN; GROGAN, 1992; HANCOCK, 2003; LANE, 1993; MARSLEN-WILSON; TYLER, 1998; PRATOR; ROBINETT, 1985).

The first study to investigate the production of regular verbs ending in *-ed* by Brazilian EFL learners was Pereira (1994), who found that beginners tended to insert an epenthetic vowel in the production of these verbs more frequently than did advanced learners. She concluded that (a) there is considerable interference from the first language (L1) in the production of clusters formed by the addition of *-ed*; (b) greater experience in the foreign language (FL) seems to reduce this L1 interference; and (c)

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[4] An *allomorph* is a variation in the pronunciation of a morpheme, which is influenced by the context and may express the relation between phonology and morphology (Cristófaro-Silva, 2011).

orthographic input and/or insufficient instruction may hinder the accurate production of regular verbs ending in -*ed*.

Following Pereira, there was a gap in the study of the pronunciation of the English regular past until Delatorre (2004). Delatorre investigated the production of regular verbs ending in -*ed* in free speech by six Brazilian EFL teachers, and found that one inserted an epenthetic vowel after both consonants and vowels, while another epenthesized only in the verb *studied*, which may be attributed to fossilization of her pronunciation of this specific verb. It was suggested that the results may reflect a difference in proficiency level, since the four teachers who consistently pronounced these verbs correctly had had more contact with the language, either by traveling to an English-speaking country and/or by doing graduate-level study in English in Brazil or in the United States.

A variable investigated in subsequent studies is the phonological context preceding the -*ed*, which was found to have a strong influence on the insertion of epenthetic vowels on these verbs. This was the case in Delatorre (2005, 2006b) on the -*ed* production of 9 intermediate Brazilian EFL learners, and in Delatorre (2006a, 2008) and Delatorre and Koerich (2008) on the –*ed* production of 26 upper-intermediate Brazilian EFL learners. These studies found (a) more epenthesis after consonants than after vowels, (b) more epenthesis after voiceless consonants than after voiced consonants, and (c) more epenthesis in resulting CCC codas than in CC codas. However, Gomes (2008) and Gomes (2009, 2010, 2011), investigating 24 and 46 beginning to advanced Brazilian EFL learners, respectively, found higher rates of epenthesis production after voiced consonants than after voiceless consonants. Moreover, Frese (2006, 2009) investigated 32 advanced Brazilian EFL learners' perception and production of regular verbs ending in -*ed* and obtained results similar to those of Gomes: that voiceless /p, k/ induced less vowel epenthesis than voiced /b, g/ and that the /t, d/ were the easiest contexts in both perception and production of regular verbs ending in -*ed*.

Delatorre (2006a, 2008) also demonstrated that (a) within the class of obstruents preceding the -*ed*, affricates induced more vowel epenthesis production than stops, which induced more than fricatives; (b) within the class of sonorants, nasals induced higher rates of vowel epenthesis than liquids; and (c) both voiced obstruents and the whole class of obstruents induced more vowel epenthesis than sonorants before the -*ed*.

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She attributed these results to the influence of sonority, the less sonorous classes inducing higher rates of vowel epenthesis, although the place of affricates along the sonority hierarchy is somewhat controversial (HOOPER, 1976; SELKIRK, 1984). Furthermore, Gomes' (2009, 2010, 2011) results followed this tendency of obstruents inducing higher rates of epenthesis than sonorants as preceding -*ed* contexts. She attributed these results to the fact that learners encounter final sonorant-obstruent clusters more often than obstruent-obstruent clusters during their learning process.

Besides the influence of phonological context, cluster length and manner of articulation, proficiency level also seems to affect the production of regular verbs ending in -*ed*. Gomes (2008, 2009, 2010, 2011) found a strong influence of proficiency in the frequency of epenthesis in the production of simple past tense -*ed* by Brazilian EFL learners reading short texts Moreover, she pointed out that persistent epenthesis production was not uncommon even among advanced participants with some knowledge of the -*ed* pronunciation rules.

In an effort to shed light on the question of mental representation of the past tense -*ed*, Delatorre (2010a) had two adult female Brazilian EFL learners[5] first read 130 sentences, each with a regular past tense verb (unevenly distributed among the three expected pronunciations), then indicate in a table, for each of these same verbs, whether they believed they pronounced the -*ed* of each verb with or without the extra vowel. The rates of vowel epenthesis actually produced were considerably higher, not surprisingly, than the rates of vowel epenthesis indicated by the participants in the table. What was unexpected, however, was the negative correlation (though weak) between the rates of the two tests. Interestingly, the participant with less experience in English chose the epenthesized pronunciation more often in the table, indicating she was unaware that the vowel was not to be pronounced in most of the verbs (there were only 6 with a /t/ or /d/ context); while the more experienced participant chose the non-epenthesized pronunciation more often, indicating she did have either some notion of the rules, though without their specificity, or a stored mental representation of this pronunciation. The high rates of epenthesis in production, together with comments made by both participants regarding their doubts about the rules, indicates that orthography was probably an important factor affecting the results.

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[5] Both participants also had some knowledge of German, but since the one with more experience with German had also had more experience with English, it was impossible to evaluate the influence of the additional language.

Further evidence for the influence of orthography in the production of simple past tense *-ed* was found by Delatorre (2005, 2006a, 2010b) and by Alves (2007). Delatorre found, in a paragraph reading task, higher rates of epenthesis in verbs such as *missed, planned,* and *played* than in phonologically similar monomorphemic words without orthographic *-ed*, such as *best, found,* and *made*. Another indication of orthographic influence was the fact that epenthesis production in *-ed* verbs was less frequent in free speech than in paragraph reading. Alves (2007) found similar results in his comparison of epenthesis production in monomorphemic clusters and in final *-ed* clusters by a mixed group of 32 Brazilian beginning to advanced EFL learners. Whereas lower-proficiency participants produced epenthesis in both the monomorphemic and the *-ed* clusters, the more advanced learners produced it only in the *-ed* clusters.

Four studies have focused on the effect of treatment on the perception and/or production of verbs ending in *-ed* by Brazilian EFL learners. First, Alves (2004) provided instruction of the pronunciation of *-ed* to 7 beginning Brazilian undergraduate students of English, preceded by a pretest, immediately followed by a posttest, and a month later by a retention test. Alves found more frequent epenthesis production in the *-ed* of verbs with base forms ending in consonants prohibited in Brazilian Portuguese (BP) codas, such as the /p, v/ in *stopped* and *loved*, than ending in consonants permitted in BP codas, such as the /l, r/ in *called* and *remembered*. However, vowel epenthesis production decreased from the pretest to the posttest and was maintained in the retention test, for both groups of verbs. On the other hand, the pronunciation of *-ed* in verbs with base forms ending in /t, d/, such as *wanted, needed*, was apparently not affected by instruction, since the epenthetic vowel often produced by Brazilian learners is actually the appropriate pronunciation of these verbs, a frequent learner modification of these verbs being the deletion of the whole final syllable.

Second, Silveira and Alves (2006), found that instruction on the perception and production of regular verbs ending in *-ed* was more effective for perception than for production, which they attributed to the saliency of the vowel that appears when *-ed* follows one of the alveolar stops. They found that [ɪd] was produced and perceived best in both the pre- and posttests, while [d] was perceived better than [t] in the pre- and posttests, and produced better in the pretest. Despite the positive effect of instruction, the authors concluded that L1 phonological and orthographic interference and syllable

structure differences between the two languages influenced participants' production of vowel epenthesis.

Third, Mariano (2009) compared the influence of (a) perceptual training and (b) perceptual training followed by explicit instruction, in a study with a control group (CG), a training group (TG), and a training/instruction group (TIG) in a university extracurricular English program. She found the 100 minutes of perceptual training and instruction to be more effective than the 90 minutes of perceptual training in improving the pronunciation of the *-ed* in a sentence reading test. Moreover, her results showed the difference between the pre- and posttests to be statistically significant only for the TIG, calling attention to the importance of explicit instruction with training in the pronunciation of the *-ed* ending verbs.

Finally, Delatorre (2009), in another phase of the study reported in Delatorre (2010a) above, investigated the effect of a 50-minute perceptual training session in the production of regular verbs ending in *-ed* by the same two female adult Brazilian speakers of English. Contrary to Mariano (2009), Delatorre (2009) did find a reduction after training (without explicit instruction) in the more proficient learner's production of vowel epenthesis in *-ed* verbs.

As this section has demonstrated, the pronunciation of verbs ending in *-ed* by Brazilian learners is a recent interest among interphonology researchers in Brazil. Even though one out of the four studies did include a retention test a month after the posttest, none of them was long term and the training/instruction period was limited in all of them. The present longitudinal case study aims at filling this gap by investigating the influence of pronunciation training and instruction given at various times during three semesters on the pronunciation of regular verbs ending in *-ed* by an adult Brazilian learner of English. Objectives, procedures for treatment, data collection and analysis, and participant description are given below.

3. METHOD

3.1. OBJECTIVES

The main objective of this study was to investigate the evolution of the pronunciation of regular past verbs ending in *-ed* by one speaker of BP learning EFL during two years of instruction. The supporting objectives were to investigate (a) the possible effect of instruction on her pronunciation of these verbs and (b) whether any

improvement was uniform or different among the various preceding phonological contexts. The possible influence of orthography and proficiency are also discussed.

3.2. PARTICIPANT

The participant of the present study was a twenty-seven-year-old Brazilian student of English from the undergraduate program in English language and literature of the Universidade Federal de Santa Catarina (UFSC), a native speaker of BP who did not have any knowledge of another FL when the data were collected. She had had her first formal contact with English in instructional settings at school when she was 13. She had studied English at a language schools from 15 to 17 and from 21 until 22. She enrolled in the undergraduate English program at the university when she was 27 and participated in the study for two years, three of the four semesters of this period including pronunciation instruction and data collection.

3.3. INSTRUCTION

The participant received pronunciation instruction from her professor[6], a native speaker of American English, as all or part of three courses taken during three semesters: English Language I in Semester 1, Pronunciation Laboratory in Semester 3, and English Phonetics and Phonology in Semester 4. In this study, instruction is understood as explicit explanation on a particular structure or structures (here regular verbs ending in -*ed*) followed by perceptual training and production practice at the language laboratory[7].

The participant took seven pronunciation tests during the data collection period: three in semester 2000-1, two in semester 2001-1 and two in semester 2001-2. The two instruction sessions on the three pronunciations of the regular verbs ending in –*ed* took place in semesters 2001.1 and 2001.2. Each of the two instruction sessions took about one hour and thirty minutes, totaling about three hours of instruction and perception and production practice on the three -*ed* pronunciations. The first instruction session was based mostly on *Focus on Pronunciation* (LANE, 1993) and *Basics in Pronunciation*

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[6] Thus participant and professor became first and second authors respectively of this paper.
[7] Following the perspective adopted in Mariano (2009) and Ruhmke-Ramos (2009).

(LANE, 1997) and took place before the fourth test (Semester 3 – 2001.1). The second was based mostly on *Sound Advantage* (HAGEN; GROGAN, 1992) took place before the seventh test (Semester 4 – 2001.2) Moreover, before Test 6, instruction was given on the characteristics of English consonants, such as voicing and place and manner of articulation, which influence the pronunciation of the past tense morpheme, followed by perception and production practice on these items using *Sound Advantage*.

In addition to this explicit instruction and practice on -*ed* pronunciation, the participant (and the rest of the class) also received explicit instruction and had some perception and production practice on many other English sounds throughout the three semesters, mainly from the books *Focus on Pronunciation*, *Basics in Pronunciation* and *Sound Advantage* and from the unpublished pronunciation manual *Pronunciation Exercises to Accompany Interactions I* (BAPTISTA, 1988). All the instruction sections took place at the Language Laboratory at UFSC and were conducted by the same professor.

3.4. PROCEDURES FOR DATA COLLECTION AND ANALYSIS

The data for this study were taken from audio-recordings of the reading of short texts containing various already-practiced aspects of English pronunciation, including regular verbs ending in -*ed*. The texts constituted part of the seven pronunciation tests mentioned in 3.3, taken by the English language students during the three semesters. Since all the students, including the participant, knew that several aspects of pronunciation were being evaluated, it was impossible for them to focus their attention only on the -*ed* pronunciation, which probably made their test pronunciation of verbs ending in -*ed* (as well as of the others items tested) closer to their usual pronunciation.

The participant of this study saved her tests over ten years, with the professor's transcription and evaluation, and a subsequent analysis of the results of the whole set of tests indicated to both student and professor that the data could be quite useful for a case study to evaluate the possible positive effect of instruction on her pronunciation of English verbs ending in -*ed*.

Since these seven tests were taken from three language courses, the data were organized in three semesters. Semester 1 includes data from the first three tests, taken in the course *English Language I* during the first semester; Semester 3 includes data from Tests 4 and 5, taken in the course *Pronunciation Lab* during the third semester; finally,

Semester 4 includes data from tests 6 and 7, taken in the course *English Phonetics and Phonology*. The data collection sessions took place at the Language Laboratory at UFSC and were all conducted by the same professor (the second author), who also conducted the instruction sessions.

The recordings were analyzed auditorily and the target verbs transcribed by the professor right after each test was administered. Since the data were gathered from classroom tests not focused solely on verbs ending in *-ed*, the total number of these verbs per test varied considerably. The *-ed* verb tokens in each test were classified first according to type of production: (a) one of the three appropriate *-ed* pronunciations or allomorphs (e.g., *started* [stɑrtɪd], *stopped* [stɑpt], *moved* [muvd]); (b) an inappropriately epenthesized pronunciation (e.g., *played* [pleɪɪd]); and (c) an inappropriate base form pronunciation of the verb, that is, omission of the *-ed* morpheme, (e.g., *noticed* [noʊtɪs])[8]. Then the tokens were categorized according to their appropriate (i.e., not necessarily the one produced) allomorph and preceding context. Since this is a case study, no statistical tests were run and only percentages were calculated, thus demonstrating only preliminary tendencies. The percentages of verbs produced in each of these categories were calculated from the total number of verbs in *-ed* produced during each of the three semesters (Section 4.1, Table 1) and from the total number of productions for each allomorph and for each preceding phonological context (Section 4.2, Table 2).

4. RESULTS AND DISCUSSION

This section reports the results for the production of regular verbs ending in *-ed* during Semesters 1, 3 and 4, including the participant's improvement across semesters, overall and relative to the three *-ed* allomorphs and to their preceding phonological contexts.

4.1. IMPROVEMENT ACROSS SEMESTERS

As displayed in Table 1, the rates of overall accurate production of regular verbs ending in *-ed* increased from Semester 1 (31.81%) to Semester 3 (43.75%) to Semester 4 (68.75%). The rates of vowel epenthesis, however, were quite similar (and actually worsened slightly) from Semester 1 (45.45%) to Semester 3 (50.00%), the accuracy

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[8] All verbs and their transcriptions are listed in the Appendix

improvement here being accounted for by a reduced frequency of production of the base form (from 22.72% to 6.25%); then decreased radically from Semester 3 (50.00%) to Semester 4 (12.50%), while the base form production increased again to 18.75%. This change may reflect (a) the instruction on the pronunciation of English consonants, including their voicing, manner and place of articulation; (b) the two instruction sessions on the three *-ed* pronunciations; given before the pronunciation tests in the third and fourth semesters, as explained in sections 3.3 and 3.4; and (c) the participant's increase in personal interest in learning about English pronunciation from the second half of the third semester on.

Table 1: Results for the production of *-ed* ending verbs by semester (% in parenthesis).

Production type	Semester 1	Semester 3	Semester 4	Total
Total –*ed* verbs	22	32	16	70
Accurate	**07**	**14**	**11**	**32**
	(31.81)	**(43.75)**	**(68.75)**	**(45.71)**
Base form	05	02	03	10
	(22.72)	(6.25)	(18.75)	(14.29)
Epenthesized	10	16	02	28
	(45.45)	(50.00)	(12.50)	(40.00)
Total inaccurate	**15**	**18**	**05**	**38**
	(68.18)	**(56.25)**	**(31.25)**	**(54.29)**

The findings displayed in Table 1 corroborate the tendencies found in Alves (2004), Delatorre (2009), Mariano (2009), and Silveira and Alves (2006) on the influence of instruction and/or perceptual training on the production of regular verbs ending in *-ed* by Brazilian EFL learners. That is, the results of these studies suggest that instruction plays an important role in the improvement on the pronunciation of regular verbs ending in *-ed* by Brazilian EFL learners, and, although a strong case for cause and effect is difficult to make from a limited case study, the results of the present study are certainly consistent with this claim.

In addition to instruction per se, other factors, such as accurate input from a native-speaking professor and gradually increasing contact with the English language from the beginning to the advanced level, most likely contributed to the improvement in the accurate production of these verbs by the participant in this study, as found by Delatorre (2010a) with the more experienced of the 2 participants of that study. Moreover, this improvement in the pronunciation of *-ed* may also reflect an improvement in overall proficiency, as suggested by Alves (2007), Delatorre, (2004),

Gomes (2008, 2009, 2010, 2011), and Pereira (1994), and a decreasing reliance on the orthographic input and on the generalization of one *-ed* pronunciation to the others, especially during the last semester, when her rate of epenthesized forms dropped to 12.5%.

4.2. RELATIVE ACCURACY OF THE ALLOMOPRH AND PHONOLOGICAL CONTEXTS

The discussion so far, based on Table 1, has considered only overall accuracy of the past tense morpheme and the two types of error found. Since the *-ed* morpheme has three allomorphs, which depend on the preceding phonological context, it is important to compare the accuracy of these three allomorphs and in each of their phonological contexts. Table 2 gives this comparison, classifying the phonological contexts into (a) vowels, sonorants, and voiced obstruents excluding /d/ – which are the appropriate contexts for the allomorph [d]; (b) the voiceless obstruents excluding /t/, which is the appropriate context for [t]; and (c) the alveolar stops /t, d/, which are the context for [ɪd].

Table 2: Rates of accurate production of *-ed* ending verbs by semester, allomorph, and phonological context (number of accurate productions before slash, total productions after slash, and % in parenthesis)

Allomorph	[d]	[d]	[d]		[t]	[ɪd]	
Context	**vowel**	**son**	**+vc obs**	**All [d]**	**-vc obs**	**/t, d/**	**Total**
Semester 1	1/2[9]	1/3	2/3	4/8	0/11	3/3	7/22
	(50.00)	(33.33)	(66.66)	(50.00)	(0.00)	(100.00)	(31.81)
Semester 3	4/5	1/6	0/5	5/16	2/9	7/7	14/32
	(80.00)	(16.66)	(0.00)	(31.25)	(22.22)	(100.00)	(43.75)
Semester 4	1/1	3/3	3/4	7/8	1/4	3/4	11/16
	(100.00)	(100.00)	(75.00)	(87.50)	(25.00)	(75.00)	(68.75)
Total	6/8	5/12	5/12	16/32	3/24	13/14	32/70
	(75.00)	(41.66)	(41.66)	(50.00)	(12.50)	(92.85)	(45.71)

Table 2 demonstrates that the most accurate allomorph in this study was the [ɪd], determined by the preceding alveolar stops /t, d/, as in *invited* and *decided*. There could

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[9] This means that one out of two verbs in which the *-ed* was preceded by a vowel was correctly produced.

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be no improvement, since it was already at ceiling in Semester 1. It was produced accurately in 92.85% of the tokens, the only exception being the verb *completed* (Semester 4), which was produced in its base form, as occurred in Alves (2004) in the pronunciation of the verb *needed* by one participant in the first posttest. Because of the limited data involved in both studies, it can only be speculated that there may have been an influence of frequency of use of the imperative *complete* (as in instructions) in this study and of the present tense *need* in Alves. The high accuracy rate of this variant is not surprising, given that (a) it requires the insertion of an epenthetic vowel, which is a Brazilian tendency anyway, and (b) the orthography of these verbs coincides with their appropriate pronunciation.

The next most accurate allomorph was [d], with 50% total accuracy and 87.5% in Semester 4. Of the three contexts determining this allomorph, vowels (e.g., *borrowed* and *cried*) obtained the highest total (75%), with sonorants (e.g., *belonged, prepared*) and voiced obstruents (e.g., *arrived, refused*) both obtaining total accuracy rates of 41.66%. The accuracy rates of the two latter contexts both dropped radically in Semester 3 (sonorants to 16.66% and voiced obstruents to 0%) and recovered in Semester 4 – the sonorants to 100% and the voiced obstruents to 75%. This U-curve, rather typical of learning in general, may indicate that in Semester 1 the individual verbs were being produced by memory, in Semester 3 there was an unsuccessful attempt at rule following, and in Semester 4 the rules were being followed more accurately. It is important to point out that only one error was produced overall for this allomorph in Semester 4, and none in the context of vowels or sonorants.

The absolute accuracy rate of sonorant contexts in Semester 4 corroborates Delatorre (2005, 2006a, 2008), who reported that sonorants induced less vowel epenthesis than both voiced obstruents and the whole class of obstruents. It also corroborates Gomes (2009, 2010, 2011), who demonstrated, in an implicational analysis, the accurate pronunciation of the *-ed* morpheme preceded by sonorant codas by learners who were not yet pronouncing the morpheme correctly after the other consonants.

The exception to this pattern in the present study was the accuracy rate for the voiced obstruent context in Semester 1, which was higher than all contexts except the alveolars (the [ɪd] allomorph). This can probably be explained by the fact that, contrary to previous studies, the voiced obstruents in question here were the fricatives /v/ and /z/,

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which Delatorre (2005, 2006a, 2008) found to be easier contexts for Brazilians than voiced stops and affricates, possibly because these voiced fricatives are more sonorant than the other voiced obstruents[10].

The least accurate allomorph, overall (12.50%) and in Semesters 1 (0%) and 4 (25%), was the [t], determined by the preceding voiceless obstruents, as in *looked* and *published*. These results also corroborate Delatorre (2005, 2006a, b), Delatorre and Koerich (2008), suggesting that Brazilian EFL learners tend to have more difficulty pronouncing the past tense morpheme in voiceless contexts. This consistent difficulty seems strange in light of the fact that final voiceless obstruents are considered to be implicationally less marked than final voiced consonants, and that this implicational relationship also holds for voiceless and voiced obstruent clusters (GREENBERG, 1965, p. 23). However, there are two other factors to consider: (a) Sonority may have had an influence here, as in Delatorre (2006a) and Delatorre and Koerich (2008), as voiceless obstruents are considered to be less sonorous than voiced ones, as proposed by Hooper (1976) and Selkirk (1984), and thus, more marked in final position. (b) Orthography may also have played an important role (as discussed in 2), in that the learner may think the "d" in *-ed* has to be pronounced as a [d], that is, as a voiced alveolar obstruent, which would result in a voiceless+voiced obstruent cluster (e.g., [kd]), which simply does not occur in the world's languages. In the rare instances of final voiceless consonant plus voiced consonant, the second consonant is not an obstruent, but a voiced nasal (GREENBERG, 1965, p. 21). Since this non-occurrence is due to the near impossibility of pronunciation, the learner would insert a vowel to make the pronunciation possible.

In sum, it has been demonstrated in this section that the participant of this study had the following overall accuracy order of the three allomorphs of the past tense *-ed*: (a) the [t] was the least accurate, probably resulting from an unpronounceable cluster resulting from an attempted spelling pronunciation; (b) followed by the [d], which was more accurately produced when it followed a vowel or a sonorant, sonorant plus obstruent clusters being relatively easy to articulate; and (c) the [ɪd] had the highest accuracy rate because it follows a natural Brazilian Portuguese tendency of epenthesis

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[10] And also because, as pointed out by an anonymous reviewer, the /s/ and its allophones [s] and [z] are allowed in final position in BP.

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and because the spelling leads to accurate pronunciation. Linear progress was seen only with the vowel context, but it should be pointed out that both the vowel and the sonorant context obtained 100% accuracy in Semester 4, higher than the [ɪd] morpheme, and even the voiced obstruent context obtained an accuracy rate of 75% in the fourth semester, equal to that of the [ɪd] morpheme. Factors most likely to have interfered with a linear progression are rule pronunciations versus stored pronunciations and the selection of verbs produced in each test/semester. A much larger data base would be needed to control for the latter factor; however, in general, the results corroborate those of previous studies.

Finally, it has been shown that for two of the three allomorphs (the exceptional verb *complete* lowered the accuracy rate for the [ɪd] in Semester 4) and for all three phonological contexts for the [d], there was progress, even if not always linear, toward the last semester of the study (Semester 4). This progress across allomorphs and across contexts further supports the overall progress reported by production type. The systematic instruction on consonants that the participant of this study had in three out of her first four semesters and on the past tense *-ed* during two of these semesters, added to the fact that previous studies have indicated that the pronunciation of *-ed* is frequently a problem even for advanced learners, allow for the following tentative conclusion, keeping in mind the limitation of being a one-participant case study with a small data set: Explicit instruction, together with general proficiency improvement, continued accurate input, and motivation, can have a very positive effect on the learning of the pronunciation of the past-tense *-ed* morpheme, possibly because of the fact that this pronunciation item is not just phonological, but morphophonological.

5. CONCLUSION

The objectives of this longitudinal study were to investigate the evolution of the pronunciation of regular verbs ending in *-ed* by an adult female Brazilian EFL learner during two years of instruction, the possible effect of instruction, as well as the influence of preceding context and other factors on her pronunciation of these verbs. Section 4 demonstrated that the pronunciation of regular verbs ending in *-ed* improved from Semester 1 to Semester 4, with a reduction in the frequency of vowel epenthesis and of the omission of the morpheme, suggesting a positive effect of instruction. Moreover, the data suggest that the expected allomorph and its preceding context

influenced the accuracy of production of these verbs by this BP speaker, since (a) rates of vowel epenthesis were highest after the least sonorant contexts and lowest after the most sonorant ones; (b) a spelling pronunciation favored the correct production (with epenthetic vowel) of the *-ed* preceded by one of the alveolar stops. Other factors which appear to have contributed to the learner's evolution in the pronunciation of *-ed* verbs are an increased motivation to improve, continued and increasing exposure to accurate input, improvement in overall language proficiency, and the resultant decreasing reliance on orthographic input and on the generalization of one *-ed* pronunciation. The results corroborate previous studies on the effect of instruction and the influence of phonological context.

Based on the apparent effect of instruction on the pronunciation of regular verbs ending in *-ed* in this study and in previous studies, it is suggested to include this instruction in English classes at universities and language schools to improve students' pronunciation and intelligibility, as also advocated by Fernandes (2009). The teaching of the voicing contrast, as well as place and manner of articulation of consonants should also be included in English pronunciation classes in order to avoid the interference of orthography and the overgeneralization of the [ɪd] pronunciation. Finally, where possible (most likely only with children), the *-ed* pronunciation should be taught before the foreign language learners are exposed to the written L2 system, and where not possible, definitely as early as possible.

This study has the usual limitations of case studies, in terms of quantity of data and generalization; thus, the following are recommendations for further research on regular past-tense verb production: (a) longitudinal research with a greater number of participants and a larger and homogeneous number of verbs, (b) longitudinal research using a free speech task, and (c) longitudinal and cross-sectional research on EFL learners with various L1s.

REFERENCES

ALVES, U. K. *O papel da instrução na aquisição fonológica do inglês como L2:* evidências fornecidas pela teoria da otimidade. 2004. 335f. Dissertação (Mestrado em Letras) – Programa de Pós-Graduação em Letras, Universidade Católica de Pelotas, Pelotas, 2004.
_____. The production of English final obstruent clusters by Brazilian speakers: the difference between monomorphemic and "ed" sequences. In: INTERNATIONAL SYMPOSIUM ON THE ACQUISITION OF SECOND LANGUAGE SPEECH, 5th, 2007, Florianópolis. **Apresentação Oral.** Florianópolis: UFSC, 2007.

DELATORRE & BAPTISTA

BAPTISTA, B. O. **Pronunciation exercises to accompany interactions I: Unpublished pronunciation manual**. Manuscrito, University of Califonrnia at Los Angeles, Los Angeles, 1988.

_____.Frequent pronunciation errors of Brazilian learners of English. In: FORTKAMP, M. B. M.; XAVIER, R. P. (Orgs.) **EFL teaching and learning in Brazil:** theory and practice. Florianópolis: Insular, 2001. p. 223-230.

_____. Languages in contact: Brazilian English interlanguage phonology. In: CONGRESSO INTERNACIONAL DAS LINUGAGENS, I, 2002, Erechim. **Apresentação Oral.** Erechim: URI, 2002.

BERMÚDEZ-OTERO, R.; MCMAHON, A. English Phonology and Morphology. In: AARTS, B.; MCMAHON, A. (Orgs.) **The handbook of English linguistics.** Oxford: Blackwell, 2006. p. 382-410.

BYBEE, J. **Phonology and language use**. Cambridge: Cambridge University Press. 2001.

_____. **Language, usage and cognition**. Cambridge: Cambridge University Press. 2010.

BYBEE, J.; MODER, C. L. Morphological changes as natural categories. In: BYBEE, J. (Org.) **Frequency of use and the organization of language.** Oxford: Oxford University Press. 2007. p. 127-147.

BYBEE, J.; SLOBIN, J. L. Rules and schemas in the development and use of the English past tense. In: BYBEE, J. (Org.) **Frequency of use and the organization of language.** Oxford: Oxford University Press. 2007. p.101-126.

CELCE-MURCIA, M.; BRINTON, D. M.; GOODWIN, J.M. **Teaching pronunciation:** A reference for teachers of English to speakers of other languages. Cambridge: Cambridge University Press. 1996.

CRISTÓFARO-SILVA, T. **Dicionário de fonética e fonologia**. São Paulo: Contexto. 2011.

DELATORRE, F. **EFL teacher's education and the production of epenthetic vowels**. 2004. 189f. Trabalho de Conclusão de Curso (Graduação em Letras: Inglês e respectivas literaturas) – Universidade Federal de Santa Catarina, Florianópolis, 2004.

_____. **Production of epenthesis in *-ed* endings by Brazilian EFL learners: a pilot study.** Manuscrito, Universidade Federal de Santa Catarina, Florianópolils, 2005.

_____.*Brazilian EFL learners' production of vowel epenthesis in words ending in -ed.* 2006a. 214f. Dissertação (Mestrado em Letras/Inglês e Literatura Correspondente) – Programa de Pós-Graduação em Letras/Inglês e Literatura Correspondente, Universidade Federal de Santa Catarina, Florianópolis, 2006a.

_____. A produção do *-ed* por Brasileiros falantes de inglês como LE. In: SEMINÁRIO DO CENTRO DE ESTUDOS LINGUÍSTICOS E LITERÁRIOS DO PARANÁ, XVII, 2006b, Guarapuava. **Anais do Seminário – Artigos Completos.** Guarapuava: UNICENTRO, 2006b.

_____. The influence of sonority in the production of words ending in *-ed* by Brazilian EFL learners. *Ilha do Desterro.* Florianópolis. v. 55, p. 83-109, jul-dez. 2008.

_____.O efeito do treinamento perceptual na produção do ed por brasileiros falantes de inglês como LE. In: SEMINÁRIO DO CENTRO DE ESTUDOS LINGUÍSTICOS E LITERÁRIOS DO PARANÁ, XVIII, 2009, Ponta Grossa. **Anais do XVIII Seminário do Círculo de Estudos Linguísticos e Literários do Paraná.** Ponta Grossa: UEPG, 2009.

_____. Production and phonological representation of simple past tense *-ed* by Brazilian EFL speakers. In: RAUBER, A. S.; WATKINS, M. A.; SILVEIRA, R;

KOERICH, R. D. (Orgs.) **The acquisition of second language speech:** Studies in honor of professor Barbara O. Baptista. Florianópolis: Insular, 2010a. p. 195-220.

_____.The role of orthography on the production of regular verbs ending in ed by Brazilian EFL leaners. In: SEMINÁRIO DO CÍRCULO DE ESTUDOS LINGUÍSTICOS DO SUL, 9º, 2010b, Palhoça. **Anais do IX Encontro do CELSUL.** Palhoça: UNISUL, 2010b. p.1-13.

DELATORRE, F.; KOERICH, R.D. The influence of preceding context and cluster length on the production of English words ending in -*ed* by Brazilians. In: INTERNATIONAL SYMPOSIUM ON THE ACQUISITION OF SECOND LANGUAGE SPEECH, 5th, 2008, Florianópolis. **Proceedings of the Fifth International Symposium on the Acquisition of Second Language Speech.** Florianópolis: UFSC, 2008. p. 153-164.

FERNANDES, R. K. M. **Inteligibilidade e inglês como língua internacional: um estudo de caso de palavras em -*ed* produzidas por falantes brasileiros**. 2009. 113f. Dissertação (Mestrado em Estudos Ingleses e Americanos) – Faculdade de Letras, Departamento de Estudos Linguísticos, Universidade de Lisboa, Lisboa, 2009.

FRESE, R. A. *The relationship between perception and production of words ending in -ed by Brazilian EFL learners*. 2006. 141f. Dissertação (Mestrado em Letras/Inglês e Literatura Correspondente) –Programa de Pós-Graduação em Letras/Inglês e Literatura Correspondente, Universidade Federal de Santa Catarina, Florianópolis, 2006.

_____. Produção e percepção de palavras da língua inglesa terminadas em -*ed* por brasileiros estudantes de inglês como língua estrangeira   In: SEMINÁRIO DO CENTRO DE ESTUDOS LINGUÍSTICOS E LITERÁRIOS DO PARANÁ, XVIII, 2009, Guarapuava. **Anais do XVIII Seminário do Círculo de Estudos Linguísticos e Literários do Paraná.** Ponta Grossa: UEPG, 2009.

GOMES, M. L. C. The production of words with the morpheme ED by Brazilian speakers of English as a foreign language. In: INTERNATIONAL SYMPOSIUM ON THE ACQUISITION OF SECOND LANGUAGE SPEECH, 5th, 2008, Florianópolis. **Proceedings of the Fifth International Symposium on the Acquisition of Second Language Speech.** Florianópolis: UFSC, 2008. p. 222-235.

_____. *A produção de palavras do inglês com o morfema ed por falantes brasileiros: uma visão dinâmica*. 2009. 240f. Tese (Doutorado em Letras) –Programa de Pós-Graduação em Letras, Universidade Federal do Paraná, Curitiba, 2009.

_____.The pronunciation of ed morpheme by Brazilians: from a discrete to a gradient view. In: RAUBER, A. S.; WATKINS, M. A.; SILVEIRA, R; KOERICH, R. D. (Orgs.) **The acquisition of second language speech:** Studies in honor of professor Barbara O. Baptista. Florianópolis: Insular, 2010. p. 221-242.

_____. A influência da freqüência na produção de palavras em inglês com morfema -*ed*. In: CONGRESSO INTERNACIONAL DA ASSOCIAÇÃO BRASILEIRA DE LINGUÍSTICA, VII, 2011, Curitiba. **Anais...** Curitiba: UFPR, 2011. p. 3061-3073.

GREENBERG, J. H. Some generalizations concerning initial and final consonant clusters. *Linguistics.* v. 18, p. 5-34.

HAGEN, S. A.; GROGAN, P. E. **Sound Advantage:** A Pronunciation Book. New Jersey. Prentice Hall Regents, 1992.

HANCOCK, M. **English pronunciation is use.** Cambridge; Cambridge University Press, 1993.

HARE, M. L.; FORD, M.; MARSLEN-WILSON, W. D. Ambiguity and frequency effects in regular verb inflection. In: BYBBE, J; HOOPER, P. (Orgs.) **Introduction to**

frequency and the emergence of linguistic structure. Amsterdam/Philadelphia: John Benjamins, 2001. p. 181-200.

HOOPER, J. B. **An introduction to natural generative phonology.** New York, Academic Press, 1976.

LANE, L. **Focus on pronunciation:** principles and practice for effective communication. London, Addition-Wesley Longman, 1993.

LANE, L. **Basics on pronunciation:** intermediate practice for clear communication. London, Addition-Wesley Longman, 1997.

MARIANO, M. H. *The influence of training and instruction on the production of words ending in -ed by Brazilian EFL learners*. 2009. 89f. Dissertação (Mestrado em Letras/Inglês e Literatura Correspondente) – Programa de Pós-Graduação em Letras/Inglês e Literatura Correspondente, Universidade Federal de Santa Catarina, Florianópolis, 2009.

MARSLEN-WILSON, W.; TYLER, L. K. Rules, representations and the English past tense. *Trends in Cognitive Science.* v. 2, n. 11. p. 428-435. 1998.

NICOLADIS, E.; PARADIS, J. Acquiring regular and irregular past tense morphemes in English and French: Evidence from bilingual children. *Language Learning.* v. 62, n. 1. p. 170-197. 2012.

PARADIS, J. Bilingual children's acquisition of English verb morphology: Effects of language exposure, structure and task type. **Language Learning**. v. 60, n. 3. p. 651-680. 2010.

PARADIS, J.; NICOLADIS, E.; CRAGO, M. French-English bilingual children's acquisition of the past tense. In: ANNUAL BOSTON UNIVERSITY CONFERENCE ON LANGUAGE DEVELOPMENT, 31st, 2007. Boston. **Proceedings of the 31st annual Boston University Conference on Language Development.** Boston: Boston University, 2007. p. 497-507.

PARADIS, J,;TREMBLAY, A.; CRAGO, M. Bilingual children's acquisition of English inflection: the role of language dominance and task type. In: ANNUAL BOSTON UNIVERSITY CONFERENCE ON LANGUAGE DEVELOPMENT, 32nd, 2008. Boston. **Proceedings of the 32nd annual Boston University Conference on Language Development** Boston: Boston University, 2008. p. 378-389.

PEREIRA, C. M. *Acquisition of morphological rules by EFL Brazilian students.* 1994. Dissertação (Mestrado em Letras/Inglês e Literatura Correspondente) – Programa de Pós-Graduação em Letras/Inglês e Literatura Correspondente, Universidade Federal de Santa Catarina, Florianópolis, 1994.

PRATOR, C. H.; ROBINETT, B. W. **Manual of America English pronunciation.** New York, Harcourt Brace Jovanovich, 1985.

RUHMKE-RAMOS, N, K**.** *The effects of training and instruction on the perception of the English interdental fricatives by Brazilian EFL learners.* 2009. 197f. Dissertação (Mestrado em Letras/Inglês e Literatura Correspondente) – Programa de Pós-Graduação em Letras/Inglês e Literatura Correspondente, Universidade Federal de Santa Catarina, Florianópolis, 2009.

SELKIRK, E. On the major class feature and syllable theory. In: ARONOFF, M. ; OEHRLE, R. T. (Orgs.) **Language Sound Structure.** Cambridge, The MIT Press, 1984. p. 107-136.

SILVEIRA, R.; ALVES, U.K. *Noticing* e instrução e explícita: Dados empíricos da aprendizagem fonético-fonológica. In: Encontro Nacional sobre Aquisição da Linguagem, 7º, 2006, Porto Alegre. **Apresentação Oral.** Porto Alegre: PUC/RS, 2006.

ULLMAN, M. T. Acceptability ratings of regular and irregular past-tense forms: Evidence for a dual-system model of language from word frequency and phonological neighborhood effects. *Language and Cognitive Processes.* v. 14, n. 1. p. 47-67. 1999.

APPENDIX

Semester 1 (English I) – Test 1					
Accurate		**Base form (01)**		**Epenthesized**	
Verb	**Transcrip***	**Verb**	**Transcrip**	**Verb**	**Transcrip**
		Introduce	[ɪntrədus]		

*transcription

Semester 1 (English I) – Test 2					
Accurate (02)		**Base form (03)**		**Epenthesized (06 - 05 regular + 01 irregular)**	
Verb	**Transcrip**	**Verb**	**Transcrip**	**Verb**	**Transcrip**
Start	[startəd]	Finish	[fɪnɪʃ]	Stop	[stapɪd]
Start	[started]	Arrive	[əraɪv]	Ask	[æskɪd]
		Continue	[kəntinju]	Look	[lʊkɪd]
				Fix	[fɪksɪd]
				Plan	[plænɪd]

Semester 1 (English I) – Test 3					
Accurate (05)		**Base form (01)**		**Epenthesized (05)**	
Verb	**Transcrip**	**Verb**	**Transcrip**	**Verb**	**Transcrip**
Borrow	[bɔroʊd]	Finish	[fɪnɪʃ]	Cook	[kʊkɪd]
Arrive	[əraɪvd]			Wash	[waʃɪd]
Live	[lɪvd]			Watch	[watʃɪd]
Prepare	[prɪpærd]			Pick	[pɪkɪd]
Decide	[dɪsaɪdɪd]			Return	[rɪtʌrnɪd]

Semester 3 (Pronunciation Laboratory) – Test 4					
Accurate (08)		**Base form (00)**		**Epenthesized (10)**	
Verb	**Transcrip**	**Verb**	**Transcrip**	**Verb**	**Transcrip**
Graduate	[grædʒueɪtɪd]			Introduce	[ɪntrədused]
Wanted	[wantɪd]			Receive	[rɪsivɪd]
Wound	[wundɪd]			Return	[rɪtərnɪd]
Publish	[pʌbliʃt]			Call	[cɔled]
Continue	[kəntɪnjud]			Produce	[prədusɪd]
Start	[startɪd]			Kill	[kɪlɪd]
Reject	[rɪdʒɛktɪd]			Develop	[dɪvɛləpɪd]
Appear	[əpird]			Served	[sərvɪd]
				Lived	[lɪvɪd]
				Work	[wərkɪd]

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Semester 3 (Pronunciation Laboratory) – Test 5					
Accurate (06)		**Base form (02)**		**Epenthesized (04)**	
Verb	**Transcrip**	**Verb**	**Transcrip**	**Verb**	**Transcrip**
Terrify	[tɛrəfaɪd]	Notice	[noʊtɪs]	Ask	[æsked]
Stop	[stɑpt]	Perform	[pərfɔrm]	Watch	[wɑtʃɪd]
Decided	[dɪsaɪdɪd]			Bore	[bɔred]
Try	[traɪd]			Love	[lʌvɪd]
Start	[stɑrtɪd]				
Cry	[kraɪd]				

Semester 4 (English Phonetics and Phonology) – Test 6					
Accurate (02)		**Base form (01)**		**Epenthesized (00)**	
Verb	**Transcrip**	**Verb**	**Transcrip**	**Verb**	**Transcrip**
Invite	[ɪnvaɪtɪd]	Arrive	[əraɪv]		
Look	[lʊkt]				

Semester 4 (English Phonetics and Phonology) – Test 7					
Accurate (09)		**Base form (02)**		**Epenthesized (02)**	
Verb	**Transcrip**	**Verb**	**Transcrip**	**Verb**	**Transcrip**
Decide	[dɪsaɪdɪd]	Notice	[noʊtɪs]	Look	[lʊkɪd]
Refuse	[rɪfjuzd]	Complete	[kəmplɪt]	Convince	[kənvɪnsɪd]
Kill	[kɪld]				
Belong	[bɪlɔŋd]				
Move	[muvd]				
Bury	[bɛrid]				
Live	[lɪvd]				
Repaint	[rɪpeɪntɪd]				
Discover	[dɪskʌvərd]				