RESEARCH ARTICLE

PERCEPTION PROBLEMS OF ENGLISH VOWELS OF SAUDI STUDENTS OF ENGLISH AT ALBAHA UNIVERSITY

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ABSTRACT

This study reports on the perception problems of English vowels of Saudi university students of English. The study attempts to identify the perception problems that Saudi university students face in the perception of English vowels on words level providing experimental accounts about their causes. Data was collected by a perception test called The Modified Rhyme Test. Test material included English vowels in /hVd/ meaningful words which were spoken by native speakers of English (in sentence carriers) and listened to by Saudi students of English. Moreover, written questionnaires were distributed for both students and teachers of English to write their impressions about the problem at issue. Results revealed that English central and diphthong vowels form major perception problems for Saudi university EFL learners. Long vowels are less problematic. The lack of listening practice and partial learning are responsible for the perception problems of English vowels.

KEY WORDS: Scrutiny, vowel, perception problems, impressions, written questionnaires, confusions, matrix

1. INTRODUCTION

The perception of English vowels represents a learning problem for Saudi EFL learners. The problem seems to arise with most English vowels against which the learners often stop helpless. Arguably, these learners have difficulty identifying English vowels either in isolated words such as *pet, pit, let, late, here, air, power, sure*, etc., which learners face in their every day interactions. Actually, while listening to students' interactions, the researcher observed that they experience problems in making distinctions between English words that occur due to the complexity of English vowels. These problems we argue are responsible for intelligibility problems. Therefore, this study represents an outgrowth of the perception errors of English vowels that Saudi EFL learners made listening to native English. Previous studies refer the perception problems of English vowels to several reasons. In a wider context, most EFL learners descending from language background whose vowel inventory includes a small number of vowels; are expected to have difficulty learning English vowels. This is probably because the learners are not familiar with a big number of vowels such as that of English language (Cruttenden 2001). Linguists and those who are interested in the study of English vowels

provide different accounts for the perception problems of English vowels. Most of their accounts refer the perception problems of English vowels to the influence of the learners' first language (L1) and lack practice (Al-Badawi and Salim 2014, Ali 2011) and unfamiliarity with many vowels (Cruttenden 2001). Munro, Flege and Mackay 1996) reported that native and non-native listeners use different perceptual cues to interpret vowels. On international scale, Lin (2013) reported that Taiwanese EFL learners showed poor performance learning the front vowels /e,æ,ɪ i:/. Importantly, vowel perception problems rarely occur between native listeners and speakers of English; however, they mostly occur between native speakers and non-native listeners; natives are familiar with the vowel system of their L1, (see inter-language effect) Bent and Bradlow 2003, Ali 2011).

This study attempts to find evidence about the perception problems of English vowels that Saudi university EFL learners experience and to give insights into the problem. Findings might be useful helping English language teachers learn more about the perception problems of English vowels and provide better phonetic and auditory instruction for students.

2. PARTICITPANTS

Participants include two groups. The first group include 31 Saudi students preparing for BA degree in English language and Literature at Al Baha University in Saudi Arabia. Importantly, the students studied for four semesters at the time when they did the experiments of this study. In this period, the researcher taught students listening skills and phonetics of English in two subsequent terms. The major objective of these courses was/is to boost the learners' communicative skills of English eliminating the perception problems of English vowels they experience. English is learnt as a foreign language the learning of which starts in the fourth year of primary school and continues at secondary schools for three years. Moreover, In Saudi Arabia, English language is largely used for communication purpose rather than as a school course targeting the general principles of the language. The second group comprises 30 English language teachers who participated in answering written questionnaires giving their impressions about the perception problems of English vowels of Saudi students. Importantly, the teachers are part of teaching staff of Al-Baha University. Moreover, data of ten British and ten American native listeners participated in the perception tests as a control group. British and American listeners took the same test spoken by the same native British speaker (Ali 2011).

3. METHODS OF DATA COLLECTION

3.1The Rhyme Modified Test (RMT)

The RMT was used in the experiment which forms an accurate and reliable measure of the perception of speech sounds (Logan, Greene and Pisoni 1989). Speech intelligibility measures involve word identification tasks in a closed-set of four-options where the listeners select the response which they think the speaker intends. The score is the number of correctly responded to items. Test items target English vowels; short, long and diphthongs which were embedded into sentence phrase "say ....again". Test items are a list of English vowels (hVd): in meaningful words which were spoken by a native speaker of English (Ali 2011).

3.2 Scoring procedure of The Modified Rhyme

Test:The formal assessments of phonemes (vowels) interpret the responses as either intelligible or unintelligible; put in figures, a score of (close to) 100% is interpreted as completely intelligible performance (Lafon 1966 and Ali 2011).

3.3 Written questionnaires

These refer two paper-pencil questionnaires. The questionnaires target both the students and teachers of English who are asked to reply to the same questions and tasks. The purpose behind these questionnaires is to collect impressions from both Saudi EFL learners and their instructors in relation to vowels' perception; (i) the types of problems argued to hinder the perception of English vowels and (ii) the reasons that both students and teachers believe to cause these problems. More, importantly, the data which questionnaires provide is impressionistic, however, it may provide some corroboration which supports the experimental evidence obtained in vowel perception experiments.

3.4 Scoring procedure of Questionnaires

Students and teachers are asked to write down their point of view in detail (statements). This way of answers enables us to obtain full information about candidates' attitudes/ impressions of the topic concerned.

If a student provides a full point of view replying to the test item raised (the best possible response), his answer equals "a full answer =100 marks", other partial answers range between 50 -0 marks. The more point participants tend to exhibit the more scores they obtain and vice versa (full 100 marks). Scores distribution is as follows: 100– 50 high, 49 – 35 above average, 35 – 16 average and 15 – 0 low. If a student provides no answer he/she get zero mark. Moreover, grades like agree, disagree, strongly agree and fairly agree are also included as part of the scoring procedures (see Payne 1980).

4. PERCEPTION TEST PROCEDURE

The researcher embedded test stimuli including English vowel sounds in sentence carriers (say......again) supporting them with key words. The stimuli were recorded by a native speaker in a CD.   A number of 30 listeners sat in a small classroom listening to the test items. Listeners read standardized written instructions and had a set of answer sheets that listed four alternatives for each test item. To answer the test they just need to decide which test item of the four alternatives they had just heard on the CD. If listeners failed to figure out the correct test item, they were told to guess. There were short pauses between test trials. Listeners could ask for clarification during these pauses in case the written instructions were not clear to them (Ali 2011).

5. RESULTS AND DISCUSSION OF PERCEPTION TEST (MRT)

Results in this section refer to the performance of Saudi EFL listeners in the perception test of English vowels. The results show that Saudi EFL learners make around 50% identification errors listening to English vowels. The errors include the confusion of front vowels/ɪ,iː,e/, central /ʌ, ɜː/ and back vowels /ɔ,ʊ,uː/ mean rates range between 16% to 61% . Other errors are detected in the perception of diphthongal vowel; /ʊə,eɪ, aɪ,ʊə, oʊ, aʊ,eə, ɪə/; mean rates range between 15% to 22%. Interestingly, a slight number of errors is made in the perception of /æ,ɔɪ, eɪ**,** ɑː, aɪ/ with mean rates that range between 5% to 12%. On the light of these results (tables 1) it is possible to divide the confusions of English vowels into three categories, in terms of rates. High confusions involving front, central, back and diphthongal vowels including /ɪ,iː,e, ʌ, ɜː, ɔ,ʊ,uː, oʊ, ɪə. eə/a middle confusions including diphthongal vowels /ʊə,eɪ, aɪ,ʊə, aʊ/and slight confusions ranging between 5% to 12% including /æ,ɔɪ, eɪ**,** ɑː, aɪ/. Confusions which range between (1% to 2%) suggest less serious errors.

On the other hand, no serious problems were found when the English vowels were read by the native speaker and listened to by native British and American listeners. However, the English lax- tense pairs /ʊ~uː, ɪ ~ iː/ were often substituted by both British and American listeners confusion matrix see (appendix).

On the level of short vowels' perception, the replacement of the short central vowel/ʌ / by /ɔ/ represents a frequent error pattern made by the listeners. Other perception errors are the confusion of /ɪ/and /iː/ with /e/, /ɔ/with /ʊ/and there are interchangeable substitutions of /ʊ, uː/ and / and /ɪ, iː/. These error types can be attributed to several reasons. The first reason leading to these perception errors is probably the absence of/ʌ,ɔ, e/from Arabic vowel inventory. That is, listeners do not have perceptual representations for such vowel sounds in their L1. As a result they just depend on guessing, a process that probably results in perception errors of English vowels [2, 1]. Moreover, in Saudi colloquial Arabic, the short vowel /ɪ/is frequent in words and name patterns such *misfir, mifrih, mitib, minsi,* etc., which possibly contributes to the problem. The frequency of /ɪ/ in these names makes listeners more familiar with /ɪ/than /e/ which results in stimulating replacement of English front vowel/ɪ/ with /e/. Long vowels/ɪ, iː/and /ʊ, uː/ are substituted interchangeably. Although the rate of errors is high, these English back vowels do not represent a serious perception problem to Arab listeners of English since there are similar vowel patterns in their first language (L1). Therefore, the most probable factor behind these high rates of errors is perhaps the lack of exposure, practice or partial learning. Diphthongal vowels like /ʊə,eɪ, aɪ,ʊə, aʊ/ also represent perception problems to listeners, which can be referred to the complex phonetic and phonological structures of English diphthongs. According to Ladefoged and Johnson (2006) in English, the initial vowel of the diphthong is usually more prominent, while the second

one is brief and transitory. This feature makes a diphthongal vowel difficult to determine. Moreover, diphthongs often do not start or end with any of the sounds that occur in the separate vowels.

Table (1) Confusion matrix of 19 English stimulus vowels (in the rows) perceived by 31 Saudi listeners.

| target	Responses																		
	ʌ	ɑː	æ	aɪ	au	eɪ	e	ɜː	eə	ɪ	iː	ɪə	ɔ	ɔː	ou	ɔɪ	ʊ	uː	ʊə
ʌ	**9**												22						
ɑː		**23**					1							7					
æ			**29**				7												
aɪ				**23**		2				4	2								
au			1		**23**	1									1	3			
eɪ				1		**25**	1			1									
e			6				**18**												
ɜː		4						**17**		1		8			1				
eə					1			1	**20**			9							
ɪ							12			**14**	5								
iː							7			4	**20**								
ɪə								11				**16**							2
ɔ		7											**15**					9	
ɔː		2										1		**28**					
ou				4	12									8	**5**			1	
ɔɪ				1	1											**29**			
ʊ																	**7**	24	
uː													1				12	**18**	
ʊə												1		5					**26**

6- RESULTS AND DISCUSSION OF WRITTEN QUESTIONNAIRES

In relation to the factors affecting the perception of English vowels by Saudi students of English written questionnaires provided useful impressions. The rates of the influence of spelling, mother-tongue, listening practice and the lack of explicit knowledge of both students and teachers, respectively; are (77%, 80%), (70% and 76%), (75% and 77%) and (78% and 80%). These results suggest that the mentioned factors have strong effect on the perception of English vowels. The next section provides information of the correlation between the impressions of the students and their teachers regarding the vowels perception problems.

As Figure (1) shows that both students and teachers have   high scores responding to the written questionnaire involving the perception problems of English vowels; mean rates are 80.7% and 90% respectively. In comparison to students, teachers have higher scores, in respect to the problem being discussed which suggest that teachers provide clearer impressions about the problem than students. Interestingly, the students–teachers' impressions obtained through the written questionnaires seem to converge with each other. The computation of correlation coefficient between the two data reveals statistically a significant difference where r-value = .438 (p < .05). This statistical vale suggests a concord

between the two data. In this respect, this study adds to the previous studies findings (Al-Badawi and Salim 2014, Ali 2011).

Figure (1) correlation of performance of written questionnaires of students and teachers
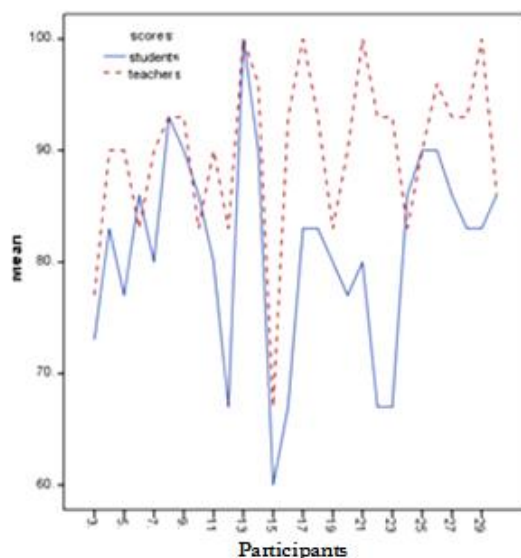
7. CORRELATION

The computation of the correlation coefficient between the students' scores in the perception test of English vowels (MRT) from one hand, and the scores of students and their teachers which are obtained via written questionnaires from another hand, show a positive relation.

Table 2: Correlation matrix of three data sets including students' scores in the perception test of English vowels (MRT), students' scores in written questionnaires and teachers' scores in written questionnaires.

Participants	Teachers	Vowels perception (MRT)-students
Students	**0.438[*]**	**0.303**
Teachers '		**0.069**

The computation of correlation shows that there is statistically a significant correlation between the scores of students and the scores of teachers in the written questionnaires where r = .438 (p < .05).There is also a good correlation but which is not significant between the results of students obtained in the vowels perception via MRT and their scores of questionnaires. However, there is a very weak correlation between the results of the students obtained in vowel perception test and the teachers' results obtained via questionnaires. The results suggest a relatively close relationship between the students' scores in the perception of English vowels and their scores in written questionnaires.

8. CONCLUSION

- Saudi students of English find the perception of English central /ʌ,ə,ɑ/ and diphthongal vowels/oʊ/ɪə, eə, aʊ/ difficult probably due to unfamiliarity of the learners with a complex vowel system such as that of English.
- The interchangeable confusions of English tense vs.lax vowels result from the insufficient listening practice.
- Students could not decipher the spelling-sounds relationship of English a process that probably triggers vowel perception problems.
- The lack of explicit knowledge of English vowels and variation of English accents probably contribute to the problems.

- The vowel inventory of Saudi colloquial Arabic triggers part of the perception problems of English vowel sounds. This appears in errors patterns like the interchangeable confusions of English vowels like /ɪ, e/.

9. Pedagogical implications

Further studies should measure the effect of letter/spelling-sound relation in English. In fact, the orthographical system of English language lacks direct letter–sound-relation which strongly influences the perception of vowels in ESL/EFL context.

The use of an experiment in issues like speech perception problems per se is not enough; an experiment must be accomplished by written questionnaires or interviews. Data collected via questionnaires provide researchers with deep knowledge involving the topic under research.

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APPENDIX

Appendix (1) matrix shows English vowels spoken by native British speaker and listened to by 10 British listeners, taken after (Ali 2011).

Target Vowels			ɜː	ʌ	æ	ɛ	eə	ɪ	iː	ɔ	ɔː	ʊ	uː	ʊə
		ɜː	80											
		ʌ		90		10								
		æ			90	10								
		eə	10				90							
		ɪ						80	20					
		ɔ								90		10		
		ɔː	10								90			
		ʊ						10				70	20	
		uː										10	90	
		ʊə										10		90

Appendix (2) matrix shows English vowels spoken by native British speaker and listened to by 10 American listeners taken after (Ali 2011).

Target vowels		ɜː	ʌ	ɛə	iː	ɔ	ʊ	uː	ʊə
	ɜː	100							
	ʌ		100						
	ɛə	20		70					10
	iː			10	90				
	ɔ		10			80	10		
	ʊ						40	60	
	uː						20	80	
	ʊə			10					60

Appendix (3) Vowel list: /hVd/ meaningful words in a fixed carrier phrase (say …..again);19 different full vowels and diphthongs read by British native speakers of English.

No.	Vowel	Key words
2.	Air	(chair pair)
2.	Pet	(met, let)
3.	Pat	(rat, fat)
4.	Pot	(lot, got)
5.	Nut	(hut, cut)
6.	Pit	(hill, tin)
7.	Peat	(feet,meet)
8.	Fool	(cool,school
9.	Full	(bull, good)
10.	Mile	(file, Nile)
12.	Peer	(dear, fear)
12.	Poor	(sure, tour)
13.	Late	(shade, rate)
14.	Out	(shout,loud)
15.	Boy	(toy, foil)
16.	Bird	(girl, curt)
17.	Bard	(hard, card)
18.	Board	(lord, short)
19.	Boat	(coat, goat)

Appendix (5) List Perception Test (RMT).

Students listen to the recorder carefully and then choose the word which they believe heard. If they fail to do decide the correct answer the can guess.

Practice: Students start the task practicing two items.

	A.	B.	C.	D.
2.	□ net	□ nut	□ not	□ nit
2.	□ boy	□ buy	□ bay	□ bow

Native British speaker

	A.	B.	C.	D.
1.	□ pat	□ putt	□ pot	□ put
2.	□ pet	□ put	□ pit	□ pat
3.	□ put	□ pet	□ pat	□ pot
4.	□ pit	□ pat	□ pet	□ peat
5.	□ net	□ nut	□ not	□ nit
6.	□ fill	□ fool	□ fell	□ full
7.	□ let	□ lit	□ late	□ light
8.	□ pit	□ pet	□ peat	□ put
9.	□ bard	□ board	□ bird	□ beard
10.	□ board	□ bird	□ beard	□ bard
11.	□ beard	□ bard	□ bird	□ board
12.	□ boy	□ buy	□ bay	□ bow
13.	□ male	□ mile	□ mill	□ meal
14.	□ fool	□ full	□ fill	□ fell
15.	□ peer	□ pair	□ poor	□ pore
16.	□ ate	□ oat	□ out	□ at
17.	□ err	□ or	□ ear	□ air
18.	□ peer	□ poor	□ pair	□ pore
19.	□ pat	□ putt	□ pot	□ put
20.	□ put	□ pat	□ pit	□ pet

Appendix (6) STUDENTS AND TEACHERS QUESTIONNAIRES

Section (1) perception problems of English vowels

1. If the perception of English vowels is difficult

   ....
   ....
   ....

2. If the perception of vowels is difficult in comparison to consonants.

   ....
   ....
   ....

3. Short vowels are difficult to understand.

   ....
   ....
   ....

4. The perception of central vowel represents difficulty.

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5. If the perception of back vowels is difficult.

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6. Long vowels do not form any perception problems.

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7. Diphthongs form serious perception problems.

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8. Central vowels are more difficult than back vowels.

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9. Arabic vowel system does not facilitate the learning English vowels.

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10. Arab EFL learners familiar with short vs. long vowels.

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Section 2   Causes expected to result in the perception problems of English vowels

1. The complexity of English spelling system makes vowels' perception problematic area.

   Strongly Agree   b- agree c- disagree

2. The lack of explicit knowledge has effect on the of English vowels perception.

   a-Strongly Agree **b**- agree   **c**- disagree

3. Insufficient listening practice

   A-Strongly Agree b- agree c- disagree

4. Unfamiliarity EFL learners with English vowels triggers the perception problems.

   Strongly Agree   b- agree c- disagree

                              End of test