Comparison of Farsi Vowel Intonation with Different Languages for Teaching and Preserving Original Accent

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ABSTRACT—Voice intonation is one of criteria of appropriately expression of phonemes and words, especially in teaching language exert appropriately intonation by person on phonemes and words, regardless of type such as: interrogative, affirmative and etc, are depends on learning. Comparison and reconstruction of voice intonation are two important challenges in Computer Assisted Language Learning. In this paper a method based on discrete signal processing has been presented. By using this method user can see similarity value of own voice intonation with source voice. In addition duration of voice and silent of user sound intervals, reconstruct according to source voice, and the user will be able to hear reconstructed phoneme by own voice. Applications of this method are: teaching standard Farsi pronunciation to the non-Farsi speakers, speech therapy, animation, and E-learning.

Keywords: Intonation comparison, voice reconstruction.

I. INTRODUCTION

General procedure learning spoken languages is listening to speech and imitates its intonation. Due to technological advances in the field of computer aided education and discrete signal processing; one of the challenging issues is teaching words and phonemes intonation by computer in Farsi. In this paper, the voice intonation in the first has been studied. Voice intonation is placed under phonetic language systems. Intonation, along with two other topics that named: Stress and Hesitation, makes features. This features that Alphabet cannot indicate them, named Suprasegmental features.

However, these features can be shown by somewhat punctuation in sentences, such as:"?" for interrogative sentences, "." for affirmative sentences, "!" for exclamatory sentences and etc. This discussion was not restricted to Farsi language and almost in all languages of the world is common. Another talk more that not uses signs consists of: intonation of phonemes and words and their pronunciation type. In this case the only differences are phoneme duration and loudness.

Intonation has two important aspects. The first aspect: The phonetically clauses are widely used in conversation that which without uses words and grammatical rules transfer emotion states of the speaker [7]. Phonetically clause such as: yoo-hoo, wow, ooh. Second aspect is exerting changes in the concept. If the intonation at the end is rising, regardless of grammatical structure, the term has interrogative mode. Like this, if the intonation at the end is falling, even if the sentence structure is interrogative mode, affirmative mode will be understood. Hence, the vowel intonations at the end of sentences, in conversation viewpoint, are important.

As shown in table 1, in falling type, sound is low, rises slowly and again comes down to lead to silence. Affirmative intonation is usually like this. In rising type, sound is low, rises slowly, and will not decrease. Interrogative intonation is usually like this. This discussion illustrated in figure 1.

TABLE 1   FORMALLY AND PHONETICALLY TYPE OF SENTENCES AND THEIR DIFFERENCE INTONATION, WITHOUT CHANGE IN GRAMMATICAL STRUCTURE.