# EFL learners' use of contrastive stress scaffolded with automatic speech analysis system

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ABSTRACT

The purpose of the study is to investigate EFL learners' use of contrastive stress scaffolded with an Automatic Speech Analysis System (ASAS). Three independent variables: training methods, students' English proficiency and contrastive stress types, were explored as the function on use of contrastive stress. Participants were 43 English-majored freshmen at a university in central Taiwan. They were selected from three English conversation classes. Based on English conversation scores, 22 of them were categorized as high-proficient and 21 were low-proficient students. The training lasted for six weeks and every two weeks covered one type of contrastive stress. A pretest and a posttest were done before and after the training of each contrastive stress type. Three training methods were implemented: the teacher's lecture and practice with the ASAS, practice with the ASAS, and the teacher's lecture and practice with printed handouts. Three types of contrastive stress were involved: double objects, single object, and incomplete double objects. Two-way ANCOVA, two-way ANOVA, paired-sample t-test and simple main effect analysis were conducted to analyze students' use of contrastive stress from two perspectives: pronunciation and pitch. The Goodness of Fit test was used to examine students' perception toward the ASAS. The main findings are described as follows: 1. The ASAS has the potential to help EFL learners achieve more native-like speech with regards of pronunciation in sentences exhibiting contrastive stress. 2. Different types of contrastive stress pose different levels of difficulty for adult EFL learners.. 3. High-proficient students made more improvement than low-proficient students on the use of contrastive stress through practice with an ASAS, but both of them need the teacher's lecture on pitch learning. 4. Students hold positive attitudes toward the ASAS and would like to recommend it to other learners. The results of data analysis indicate that the ASAS is beneficial to students' motivation and oral skills. However, the teacher's lecture is essential to students' learning of contrastive stress, especially when the contrastive stress gets more difficult or tricky and involves higher-order cognitive knowledge. It is suggested that in addition to the teacher's instruction students could practice their use of contrastive stress with an ASAS to bring about more promising learning outcomes.

Keywords: Automatic Speech Analysis System (ASAS), Automatic Speech Recognition System (ASRS), Contrastive Stress

## Table of Contents

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