



MADRID

inter.noise 2019

June 16 - 19

NOISE CONTROL FOR A BETTER ENVIRONMENT

Speech intelligibility of dysphonic voices in a college Classroom

**Bottalico, Pasquale
Ishikawa, Keiko**

ABSTRACT

Several studies have analyzed the effect of noise and poor classroom acoustics on the learning process and academic achievement of students. The acoustic complexity of a classroom is often compensated for by increased vocal effort of teachers. This explains the high prevalence of voice problems among teachers (about 60%). The objective of this study is to determine the effect of a dysphonic voice on speech intelligibility in a real classroom. The test was administered in the presence of artificial noise to 83 college students. The speech from 14 speakers (7 with a normal voice quality and 7 with a dysphonic voice) was used during the test. Two different vocal efforts were used, a raised and a loud level. A general model using a binomial link was fit on the intelligibility scores with the explanatory variable, signal to noise ratio (SNR) and Normal/Dysphonic voice. Results indicate that lower SNR and dysphonic voices lead to lower speech intelligibility. In conclusion, teachers voice problems lead to a decrease in speech intelligibility. Therefore the acoustical parameters necessary to obtain optimal intelligibility should be more restrictive when the teachers suffer from voice problems.