



A COLLABORATION

TRIFECTA

COMMUNICATION>ENGINEERING>NURSING

Improving Speech Intelligibility and Vocal Health by Controlling Background Noise in the Classroom

Investigations over the last 30 years have documented the detrimental effects of excessive noise levels (such as student babble) on children's cognitive processing and academic performance. Additionally, high noise levels in the classroom are a frequently mentioned causal factor of the more than 18% of school teachers in the US miss at least 1 day of work per year due to voice disorders. Of all classroom noise sources (e.g. classroom equipment, HVAC, lighting systems), teachers judge student babble to be the most intense, annoying and frequent source of noise in the classroom.

In order to reduce the risk of voice disorders in teachers and to improve children's cognitive processing and academic performance, there is a critical need to reduce the level of student babble in classrooms. To meet this need, this project will develop a low-cost device capable of determining the optimal noise threshold for a given environment and providing visual feedback for the class to respond to, thereby promoting a healthy self-regulation of noise output by hearing and hearing-impaired persons. Unlike a sound level meter, this device will be able to distinguish between background noise and the voice of a teacher or other main talker and only present the background noise. Gaining this control involves an educational process for pupils regarding noise perception by means of visual cues.

Amount: \$8,500

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