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## **A Longitudinal Study on Vocal Behaviour of Teachers in Classrooms and Relationships with Classroom Acoustics**

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### **ABSTRACT**

The objective of the longitudinal study presented in this work is twofold: to determine changes in the voice use of teachers along a school year and to study the relationships between voice and classroom acoustics parameters, which account for the background noise level during the teaching hours too. Thirty-one teachers from two secondary schools in Torino (Italy) were involved at the beginning of a school year and twenty-two of them participated in the monitoring campaign also at the end of the same school year too. Teachers adjust their voice significantly with noise and reverberation, both at the beginning and at the end of a school year. Moreover, teachers who worked in worst classroom acoustic conditions showed higher voice sound pressure levels at the end of the school year. Finally, a good predictive model to estimate the sound pressure level in front of the speaker's mouth from the background noise level and the reverberation time was found.