

ACOUSTIC ANALYSIS OF TEACHERS' VOICE THROUGHOUT A WEEK :

- EFFECTS OF VOCAL LOADING AND REST -

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INTRODUCTION

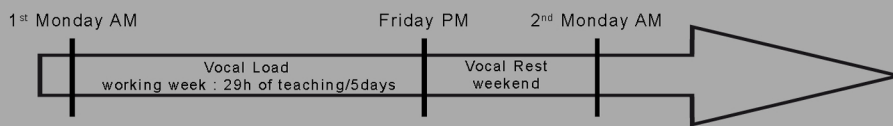
Teachers have particularly high vocal demand. There is a significant prevalence of voice problems in this population because of their occupational vocal loading. Previous studies observed the voice across a working day (Jonsdottir, Laukkanen, & Vilkmán 2002 ; Laukkanen, Ilomaki, Leppanen, & Vilkmán, 2008) or a working week (Kostyk & Rochet, 1998 ; Rantala, Vilkmán & Bloigu 2002) of teachers. They showed an increase of the fundamental frequency (FO) and the sound pressure level (SPL), and a decrease of the jitter % and shimmer % due to vocal loading.

THIS STUDY

examines the voice evolution during a complete week, including the weekend. The aim is to determine the evolution of several vocal acoustic parameters after 5 teaching days (vocal loading) and after the weekend (vocal rest)

METHOD

Subjects 48 kindergarten and primary school teachers (38 females ; 10 males) between 22 and 64 who were evaluated at 3 different times



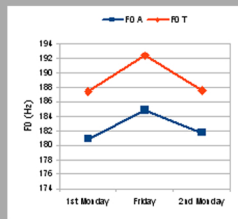
Tasks On the sustained vowel [a], we evaluated

- F0 A
- SPL A
- Jitter %
- Shimmer %
- Noise-to-Harmonics Ratio (NHR)

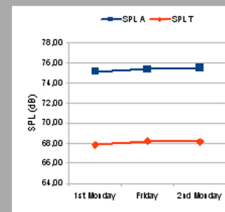
On a reading text, we evaluated

- FO T
- SPL T

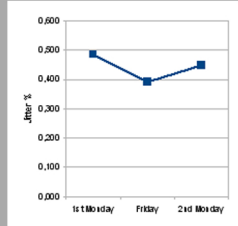
RESULTS



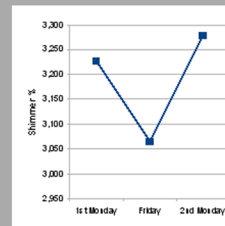
F0 A : No Significant effect of Time
F0 T : $F(2,94) = 4,0565, p < .05$
 Contrasts method : 1st Monday = 2nd Monday < Friday



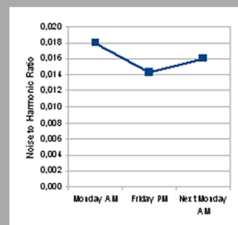
SPL A : Time effect : $F(2,94)=6,2952, p < .05$
 Contrasts method : 1st Monday < Friday = 2nd Monday
SPL T : No Significant effect of Time



Jitter % :
 Time effect : $F(2,94) = 4,0556, p < .05$
 Contrasts method : 1st Monday = 2nd Monday > Friday



Shimmer % :
 No Significant effect of Time



NHR :
 No Significant effect of Time

Discussion

The vocal load of a working week in teachers induces :
 a rise of FO T and SPL A
 a decrease of Jitter %
 In accordance with previous studies

The weekend vocal rest allows :
 a decrease of FO T
 a rise of Jitter %

REFERENCES

- Jonsdottir, V., Laukkanen, A.-M., & Vilkmán, E. (2002). Changes in teachers' speech during a working day with and without electric sound amplification. *Folia Phoniatrica et Logopedica*, 54(6), 282-287.
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- Laukkanen, A.-M., Ilomaki, I., Leppanen, K., & Vilkmán, E. (2008). Acoustic measures and self-reports of vocal fatigue by female teachers. *Journal of Voice*, 22(3), 283-289.
- Rantala, L., Vilkmán, E., & Bloigu, R. (2002). Voice changes during work: subjective complaints and objective measurements for female primary and secondary schoolteachers. *Journal of Voice*, 16(3), 344-355.