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## Voice Load in A Music Student Teacher: A Quantitative Case Study in Voice Dosimetry

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### ABSTRACT

The authors examined the voice use of a student teacher in vocal music in the initial 20 instructional meetings of a choir class over two months in a high school choir class. The purpose was to explore voice load during one daily period in the music classroom at the beginning of the student teaching placement to evaluate how and whether voice use changes in the early stage of teacher preparation. Results indicated that measures of fundamental frequency (F0), phonation time, phonation volume, and background noise level varied across measurement periods and according to student teacher activities. As a percentage of the instructional period, phonation time ranged 1.9% to 42%, and was largest in measurement periods beyond the initial days of student teaching. Teacher volume increased modestly across the data collection. Implications are suggested including increased confidence in the student teacher or increased voice misuse by the student teacher.

### KEYWORDS

Vocal health, classroom music teacher, dosimetry, student teacher, voice load, voice care

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### Introduction

Music teaching presents a unique setting for voice use and misuse, sometimes in large classrooms and large class sizes, and sometimes speaking over the ambient sounds of children or adolescents actively making music, whether in the elementary, choir, band, orchestra, or other settings (Hackworth 2021). Further, music teachers sometimes maintain extra-curricular duties such as before school or after school ensembles or lessons, adding to the voice load in this special population beyond the regular school day. These settings—and corresponding musical activities—may lead to increased voice dysfunction in the population of classroom music teachers (Manternach and Schlonegar 2021). Teachers in general have been identified to overuse their voices when compared to other populations (Titze, Lemke, and Montequin 1997). For example, the vocal impact of a prolonged reading task is that duration and intensity levels affect teachers' self-report of vocal related impairments as well as “mechanical stress on the vocal folds” (Remacle et al. 2012a). Teachers reported that their voice quality worsened over a