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Online Vocal-health Education Program for **TEACHERS**

As a speech-language pathologist practicing for almost 30 years, I [TS] use my voice daily to interact, communicate, and treat my clients. Through years of continuous voice use, I never encountered weakness, pain, or fatigue related to my voice. But approximately seven years ago, I began teaching in higher education, and I immediately noticed throat dryness, increased throat pain, and difficulty projecting my voice.

Teachers use their voices daily as the primary mechanism for their occupation, and the symptoms I experienced are common. Several risk factors for developing voice disorders include speaking in a noisy environment and unfavorable work conditions such as temperature changes and dry air, inefficient breathing and phonation, stress, and muscle tension.¹ A functional voice disorder occurs when vocal quality, pitch, and loudness do not meet daily needs. It can result



from improper or inefficient use of the vocal mechanism when the person's physical structure is typical (due to fatigue or muscle tension) or when physical changes are present in the vocal mechanism (as the result of edema, nodules, or structural changes).²

Teachers report that vocal problems are harmful to their physical and emotional health and contribute to

absenteeism and poor job performance.³ Da Costa, et al.⁴ randomly selected 237 K-12 teachers in North Carolina to answer questions about their personal voice health and barriers to care. Results indicated that 22 percent of the teachers were currently hoarse, 58 percent had experienced hoarseness, 23 percent had missed work due to hoarseness, 32.6 percent had sought professional help, and 30 percent believed that hoarseness was common for teachers. Fewer than half were aware of voice therapy or believed that a professional could help.

Research has shown that educating teachers on risk factors, breathing techniques, adequate vocal rest, and achieving adequate resonance improves their quality of life. (See Sidebar 1 for recommendations regarding good practice.) Aparecida et al.⁵ found that teachers were highly interested in learning how to improve their voices, but that only a fraction of teachers sought help for their vocal disorders.

Research on the effectiveness of vocal-health pro-

grams with teachers found improved voice awareness and quality of life⁶ and fewer reported episodes of vocal problems.⁷ Pomaville, Tekerlek, and Radford⁸ examined behavioral changes in teachers who completed a vocal-health education program. Participants reported a decrease in vocal fatigue when they received more education on the effects of hydration, caffeine, alcohol intake, responses to larynx irritation, and voice overuse. Recent studies have been conducted in the United States and internationally, including Belgium,⁹ Brazil,¹⁰ Kuwait, and Jordan.¹¹

Even though there is substantiated evidence of the prevalence and risk for voice disorders among teachers, vocal-health education is not generally included in training for educators. Realizing the tremendous benefits of such programs for teachers, the School of Communication Sciences and Disorders at Andrews University in Berrien Springs, Michigan, U.S.A., decided to contribute its expertise to this growing area of interest so that more teachers can enjoy prolonged

Sidebar 1. Tips for Teachers to Protect Their Voices

The requirements for teaching during the pandemic have increased opportunities for vocal strain. Speaking through masks, projecting the voice across six feet of distance or more, or having to record multiple lessons for virtual teaching can all lead to overuse of the vocal system. The American Speech-Language-Hearing Association (ASHA) offers several tips that might be helpful to teachers:

Practice healthy habits. Drink lots of water; avoid substances that dehydrate the body (e.g., alcohol and tobacco); avoid shouting and throat clearing; and don't try to talk over loud noise or push your voice when you are sick. Prioritizing good vocal hygiene can prevent long-term or permanent damage to your voice.

Use a microphone. If you are teaching in person, using a microphone as part of a personal-amplification system can reduce the need to project more forcefully due to masks muffling sound and because of added physical distance. Microphones also remind teachers that they don't need to talk loudly. If you are teaching virtually, you can use a microphone that plugs into your computer's USB port (or a headset with a built-in microphone).

Take breaks. Give your voice an opportunity to rest as much as you can. Ideally, this will happen with brief breaks throughout the day, even if just for a few minutes between sub-

jects (or classes). If that isn't possible, strive for a quiet lunch break and some downtime after the end of the school day.

Reduce noise. If you are teaching in person, arrange your classroom in a way that fosters a quieter environment. If you are teaching online, use a room free of noise from appliances and other people, encourage good communication habits among students (such as speaking one at a time), and use helpful video-platform features such as the "mute" button to eliminate loud student chatter and cross-talk. All of this can reduce the need to constantly raise your voice.

Heed the warning signs—and seek help. Many teachers have lost their voice at some point, but signs of a more serious problem include unfamiliar or prolonged discomfort when talking or singing; hoarseness for more than two weeks; a breathy, rough, or scratchy-sounding voice; and frequent coughing or throat clearing. If you experience any of these signs, seek help from a speech-language pathologist.

For more information, visit <http://www.asha.org/public>.

Adapted and reproduced with permission from the American Speech-Language-Hearing Association (ASHA): <https://www.asha.org/news/2020/asha-offers-tips-for-teachers-to-protect-their-voices-this-school-year/>.

vocal health throughout their teaching careers.

In order to provide a vocal-health education program readily available to teachers, two graduate students at the university, Julia Johnson and Heather Verhelle, assisted in the design and development of an online self-paced vocal-health education course using the Adventist Learning Community platform. The course aims to provide preventative measures to help teachers care for their voices and develop healthy voice-use strategies so they can thrive in their careers and improve their quality of life.

Creating the Vocal-health Education Course

Previous research methods were examined in detail to create a vocal-health education program for K-12 teachers. Successful methods included indirect training (lectures about vocal function, taking care of one's voice, and risk factors) and direct training (personal training with practical exercises). Vocal-health education programs in the literature include various teaching methods and content such as demonstration videos, self-report checklists and questionnaires, lectures, proper breath-support techniques for voice production, as well as resonance and vocal-efficiency techniques.¹²

An online, self-paced course was developed to reach a large audience of teachers. The course "Voice Awareness for Teachers: When Something Goes Wrong With Your Voice" can be accessed by anyone who creates a free account with the Adventist Learning Community (link for the course: <https://www.adventistlearningcommunity.com/courses/voice-awareness-for-teachers-when-something-goes-wrong-with-your-voice-a-pr>). The course consists of nine modules:

1. Voice Awareness for Teachers
2. Anatomy of the Larynx
3. The Larynx in Action
4. Vocal Nodules and Vocal Fatigue
5. At-risk Vocal Behaviors
6. How Do I Know Something Is Wrong With My Voice? What Do I Do About It?
7. Vocal Health Education

Approximately 90 percent of the participants found the course "very effective" or "extremely effective," and more than 80 percent of the participants reported that their knowledge about how the voice works and vocal health significantly increased after completing the course.

8. Resonant Voice

9. Conclusion

Each module includes learning outcomes, an introduction, PowerPoint slides with audio voiceover, short videos, assigned readings, interactive quizzes, self-assessments, and additional learning activities and learning materials (PDF format). Throughout the course, participants are given strategies to reflect and self-assess their vocal use and techniques in classroom teaching to improve care for and efficient use of their voice. A certificate upon completion with an earned 0.5 CEUs is provided for all participants.

Participant Feedback

A small group of K-12 teachers, speech-language pathologists, speech-language-pathology graduate students, and student teachers have completed the course. Participants rated the effectiveness of the course on a five-point Likert scale. Results revealed that approximately 90 percent of the participants found the course "very effective" or "extremely effective," and more than 80 percent of the participants reported that their knowledge about how the voice works and vocal health significantly increased after completing the course.

Qualitative open-ended questions allowed participants to provide additional feedback and suggestions for the course. When asked what resources provided in the course were most beneficial, several participants reported "videos and handouts," "anatomy and physiology of the larynx," "at-risk behaviors and resources to incorporate good vocal hygiene," and "videos that demonstrated breathing and voice techniques." Participants were also asked which classroom and voice techniques they would most likely implement to complete the course. A few of the responses included:

- "voice exercises,"
- "hydration and warm-ups,"
- "using the resonant voice when teaching,"
- "using alternative methods rather than my voice to get my students' attention,"
- "warm-ups and forward facial posture,"
- "listen to my body and my voice,"

- “incorporate frequent vocal rest breaks during the day,”
- “group activities and less lecture.”

Discussion

This course was designed and developed during the height of the COVID-19 pandemic, and the feedback and suggestions provided by the initial participants who completed the course have informed course revisions. Future research will explore the impact of virtual teaching on the voice. There is a need to examine differences between remote and in-person teaching with the frequency of voice use, loudness, strain, effort, and vocal fatigue. It is also necessary to understand whether different vocal-health techniques are needed for remote teaching than in-person classroom teaching.

The School of Communication Sciences and Disorders at Andrews University has a strategic plan to promote vocal-health education. The benefits of vocal-health education directly affect an educator’s teaching abilities, physical health, and social and emotional well-being. It seeks to support Adventist education by assisting teachers as occupational voice users and their ability to make a positive difference in the quality of their own lives and professionally as they impact the quality of their students’ lives. ✍

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Heather Verhelle, MS, recently graduated with a Master of Science in Speech-Language Pathology from Andrews University School of Communication Sciences and Disorders and has begun working as a clinical fellow at a skilled nursing facility in Michigan.

Julia Johnson, MS, recently graduated with a Master of Science in Speech-Language Pathology from Andrews University School of Communication Sciences and Disorders and has begun working as a clinical

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NOTES AND REFERENCES

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