

VOCAL EDUCATION “VIVA VOZ” AND THE CONTINUED TEACHER TRAINING

EDUCAÇÃO VOCAL “VIVA VOZ” E A FORMAÇÃO CONTINUADA DE PROFESSORES

EDUCACIÓN VOCAL Y FORMACIÓN CONTINUA DEL PROFESORADO “VIVA A LA VOZ”

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Abstract: This paper aims to discuss the use of the voice by teaching professionals, whose voice is their main work resource, bringing data on how much its misuse can lead to health problems in the short and long term, in addition to having repercussions on training and guidance work aimed at professionals in this area of expertise in the proper use and care of the voice, thus, teachers need to be oriented on the relationship between their voice problems and the conditions for carrying out their work. It is necessary to promote prior, periodic assessments and possible treatment for voice professionals.

Keywords: Voice. Dysphonia. Teacher Training.

Resumo: Este artigo tem por finalidade discutir sobre o uso da voz por profissionais docentes, que têm na voz o principal recurso laboral, trazendo dados sobre o quanto o seu mal uso pode acarretar problemas de saúde a curto e a longo prazo, além ainda de repercutir um trabalho de capacitação e orientação voltado à profissionais dessa área de atuação no adequado uso e cuidados com a voz, assim, os professores precisam ser orientados sobre a relação entre os seus problemas de voz e as condições de realização de seu trabalho. É necessário promover avaliações prévias, periódicas e com possível tratamento para profissionais da voz.

Palavras Chaves: Voz. Disfonia. Formação de Professores.

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Resumen: Este artículo tiene como objetivo discutir el uso de la voz por parte de los profesionales de la enseñanza, cuya voz es su principal recurso de trabajo, aportando datos sobre cuánto su mal uso puede conducir a problemas de salud a corto y largo plazo, además de tener repercusiones en la formación y orientación. Este trabajo fue dirigido a los profesionales de esta área de especialización en el buen uso y cuidado de la voz, por lo tanto, los docentes necesitan ser orientados sobre la relación entre sus problemas de voz y las condiciones para el desempeño de su trabajo. Es necesario promover evaluaciones periódicas previas y posibles tratamientos para los profesionales de la voz.

Palabras Clave: Voz. Disfonía. Formación Docente.

INTRODUCTION

The voice is an effective means of reaching others, whether as an essential means of communication or as a work tool. For professionals who use their voice as an instrument, such as teachers, it is a vital element for the viability of their work. Effective communication can foster direct connections with students, families, and the community.

Despite being an instrument of vital importance, it does not always receive the proper care, and the occurrence of vocal disorders, Dysphonias, characterized by difficulty in voice emission, is frequent, making it difficult or impossible to transmit the verbal and/or emotional message. Thus, prevention and care practices are essential for the correct use of the voice.

In this article, we share the experience of the extension project “Viva Voz” (Live Voice), developed with teachers, through courses and lectures on voice care. The action was developed by a speech therapist and collaborators. Three meetings were held, with guidance on breathing exercises, warm-ups, cool-downs, and correct voice use. The meetings involved the participation of 150 elementary school teachers.

Participants indicated improvement in vocal emission and less fatigue during classes. Maintaining the practice of exercises may promote a better quality of life for these professionals, being an important preventive measure in teaching.

Voice as a Labor Resource for Teachers

Speech is part of everyday life, but most people forget the importance of the voice. In the last decade, there has been an increase of more than 30% in the number of people who have speech as their main labor resource.

[...] teachers, singers, actors, religious figures, politicians, secretaries, lawyers, prosecutors, judges, health professionals, salespeople, street vendors, community agents, ceremonialists, radio broadcasters, journalists, teleoperators (BRASIL, 2018, p. 6).

Although the number of professionals who use their voice as a labor resource has increased, studies more frequently describe data related to teaching practice (JESUS, et al., 2020). In an integrative literature review, Jesus et al. (2020) summarized data from 47 studies on dysphonia. Among the professionals surveyed, 80.9% were teachers, and the average prevalence of work-related voice disorders was 44.2%. Among the aggravating factors, the presence of noise (25.5%), extensive working hours (17%), and allergies (14.9%) were observed. The authors highlighted, in light of the findings, the need to guide legislation on working conditions and implement public policies for the prevention of illness among workers who have their voice as their main instrument.

In addition to monitoring, through speech therapy, exams, and other interventions, the need for prevention of Dysphonias is highlighted. Nogueira and Medeiros (2018), when comparing the reports of teachers before and after speech therapy, observed changes in relation to greater perception of environmental noise, increased use of microphones, and adherence to vocal warm-up and cool-down exercises. There was no change in relation to water intake. The data indicate the importance of actions that promote greater awareness of voice care, especially among professionals who use it for long durations and intensities.

Most of the time, professionals do not receive specific preparation about their voice, either at the beginning or throughout their careers. As a consequence of this gap, one in three teachers takes time off from work due to voice problems (FERREIRA, *et al.*, 2016). Initially, the leave occurs through short licenses, later extending to the situation of extra-class readaptation, a resource used in public schools. The authors point out that, outside the classroom, the teacher moves away from his main attribution – teaching, sometimes remaining tied to bureaucratic functions. In addition to compromising their practice, there are damages in their relationships with students and colleagues are harmed.

The teaching activity requires great vocal effort, and some factors may contribute to excessive use, such as: long working hours (there are professionals with up to three class periods), excessive number of students, poorly structured classrooms - with unfavorable acoustics, environmental noise (external – noise from the street, courtyards, corridors; and/or internal arising from the speech of students, air conditioning and/or fans without maintenance and noisy) (BRASIL, 2018).

In the presence of noise, the teacher's vocal effort is greater, causing stress due to a vocal competition. In addition, teachers are not always aware of appropriate vocal techniques. Other adversities such as: chalk dust, smoke, alcohol, dust, excessive and strong intensity speech, can also contribute to the emergence of vocal problems (MIDORIKAWA, 2020). Other factors, such as the change in teaching modality, verified during the implementation of remote teaching, due to the COVID-19 pandemic, led to vocal fatigue due to prolonged use of voice in online activities (SANTOS; MORAIS; PORTO, 2022).

One of the hypotheses about the high rates of vocal problems indicated is that most teachers are unaware of the functioning of the phonatory apparatus, notions about vocal health, general and basic care on how to prevent voice problems. Vocal Disorders also bring harm to student learning, because if the teacher presents a picture of Dysphonia, the altered voice makes it difficult to understand the message, bringing harm in work related to reading and oral language (DRAGO; RODRIGUES, 2018).

What is the voice and how is it produced?

The human voice has been present since birth in different expressions such as crying, laughter, screaming and speech sounds. It presents itself as one of the strongest extensions in our personality, revealing, our health, our emotional state, our origin, culture and degree of security and sobriety (BEHLAU; PONTES, 2009; LONGO, 2010). It identifies the individual in his physiognomy and digital impression. It is a human characteristic intimately related to man's need to group and communicate. It is by the voice that we can conjugate the verb to be. It allows the expression of words that also carry the emotional message, which allows the transmission of contents and feelings (BEHLAU; PONTES, 2009)

We can also highlight the voice as one of the essential elements for communication. Individuals and groups in their social interactions produce different symbols to establish communication, by verbal and non-verbal means, and may use graphic elements (drawings and writing), gestures (natural or structured in sign language) and speech, for which the voice plays an important role.

Vocal quality is currently considered the most complete attribute of an individual. Through the voice is given the coloring of existence and expressiveness to communication. However, the expression of this quality occurs in an integrated way with a whole body that is expressed in a historical and cultural context that also interferes in the quality of this production. Therefore, speaking among friends or strangers, to few people or extensive public, to

welcoming or aversive environments, will require different postures, preparations and resources for the use of the voice.

Voice and speech are inter-related components that, in harmony, accompany the communication of the human being and, if well-articulated, allow him to express himself in a way that everyone understands him. Speech is a learned behavior. The voice is a product of such a complex dynamic interaction of phonation, breathing, resonance and articulation that it cannot be treated in segments. The sound is emitted to the resonance box – composed of the, larynx, pharynx, oral cavity, nasal cavity and paranasal sinuses – and amplified and modified, originate the phonemes, thus producing the language (MIDORIKAWA, 2020).

For the exercise of teaching, one of the professions that constantly requires the use of the voice, the literature has pointed out some important care for the prevention of Dysphonias. In addition to understanding how the voice is produced, care with food and the practice of good hygiene of the vocal tract, the correct use of warm-up and vocal cool-down exercises, maintenance of adequate height for adjustment and comfort during exposure and correct use of microphones (when necessary) are fundamental.

Guidance by speech therapy professionals can contribute to the identification of specific needs, avoiding the application of inappropriate techniques that could cause injuries and damage to vocal health (NOGUEIRA; MEDEIROS, 2018, MIDORIKAWA, 2020).

Vocal problems affect personal, social, and, above all, professional life. Any alteration is experienced with anguish and anxiety. We must be concerned with the global aspect of the voice, which involves relationships with the aging process, thickening of the vocal cords, decreased movement of the joints, hormonal changes, and other factors. There are elements that can compromise the message conveyed. When they are well harmonized, they have repercussions in the production of a voice that can generate trust and solidarity. The dynamics that are lent to the vocal cords, through certain practices, allow them more effective action, greater resistance, more effective, rich and comprehensive communication (BEHLAU; PONTES, 2009).

Thus, it is understood that taking care of the voice is taking care of the individual. The voice reveals health, culture, region, and degree of security. The voice liberates and, when we use it properly, it allows us to adequately occupy our space.

Prevalence of vocal pathologies among teachers

In the study by Pin et al. (2019), carried out in Cuiabá-MT, with a sample of 49 teachers, the occurrence of laryngeal lesions was verified by video laryngoscopy, between January and

June 2017. The results indicated alarming data with changes verified for 85.7% of teachers. Among the changes observed, 44.9% of teachers presented minimal structural changes of the larynx, 38.8% gastroesophageal reflux, 24.5% laryngitis, and 20.4% vocal nodules. Among the female population of the sample, the occurrence of two simultaneous alterations was observed. Although it is a sample with few participants, with non-generalizable data, the results suggest the need for evaluation and monitoring of teachers, especially women, as they present more than one alteration.

The small laryngeal alterations, observed for most of the teachers in the sample described by Pin et al. (2019) are classified as minimal structural alterations, lack of anatomical adaptations with small changes in the configuration and structure of the larynx, being classified as: vocal sulcus, cyst, mucosal bridge, laryngeal micro diaphragm, and vasculodysgenesis (PIN et al., 2019). Identifying them early can favor the offer of adequate attention, avoiding future complications.

Laryngeal changes related to gastroesophageal reflux can be considered as a chronic disorder, with retrograde gastroduodenal flow to the esophagus and adjacent organs (BEHLAU, 2010). When reaching the vocal folds, it can cause edema, inflammation, and consequent dysphonia, being common among voice professionals (PIN et al., 2019).

Laryngitis is an inflammation of the larynx that causes your voice to become rough and hoarse. Most of the time, it comes on quickly and lasts no more than two weeks. The great diagnostic challenge is to differentiate it from other allergic conditions with common symptoms, often being underdiagnosed (TURLEY et al., 2011). Conditions lasting longer than three weeks are considered chronic, usually associated with exposure to irritants over time, which can cause tension of the vocal cords, lesions or tumors (polyps or nodules).

Nodules in the vocal folds are popularly known as calluses on the vocal cords, are mass lesions, benign, bilateral and symmetrical that affect the vocal folds and whose formation is related to an altered and inadequate vocal behavior, mainly vocal abuse.

Polyps, as well as nodules, are caused by excessive abusive use of the voice or by a single abusive event; however, other factors may contribute, such as irritants, allergies, and/or acute infections. The polyp is a unilateral infection, the main vocal symptom is hoarseness (CIELO, et al. 2011).

The occurrence of these laryngeal alterations in teachers was also indicated in a literature review study by Silva (2018), in an analysis of articles published between 2007 and

2017. The results indicated the presence of nodules, polyps, Reinke's edema, cyst, and vocal sulcus. The author reinforced the importance of evaluation and monitoring with teachers.

Like nodules and polyps, the cyst is a benign lesion, a delimited space containing liquid or other substance, with two causal hypotheses: congenital malformation or acquired by continued vocal abuse, airway infection, or allergic crises. The main symptoms are hoarseness and vocal fatigue.

Reinke's edema is a disease of the larynx in which the vocal folds (vocal cords) become progressively edematous (swollen), causing the voice to become hoarse and of a low tone and can even cause breathing difficulties when voluminous. Although there may be other causes, such as thyroid diseases, gastroesophageal reflux, and misuse of the voice, by far, the most frequent cause of this disease is smoking (CIELO, et al. 2011). Discreet edemas can be resolved with speech therapy and/or specialized medical treatment.

The vocal sulcus is a linear depression of the mucosal covering of the vocal folds. Its etiology is controversial, with indications of congenital or acquired by inflammatory processes in childhood. Treatment depends on the degree of glottic insufficiency and vocal alterations, and may include: "collagen injections, teflon, hyaluronic acid, fat graft, fascia and pre-fascia of the temporal muscle, thyroplasty, mucosal frilling and resection of the sulcus" (MARTINS, et al., 2007, p.573). The authors reinforce the hypothesis of genetic etiology.

As indicated by Pin et al., 2019, teachers need to be guided on the relationship between their voice problems and the conditions of their work. It is necessary to promote prior, periodic evaluations and possible treatment for voice professionals. Considering the results observed with teachers, which indicated more susceptibility to presenting more than one alteration, they should have priority to evaluation, monitoring, and treatment.

In view of the above, considering the importance of the voice as a work instrument and the incidence of disorders or pathologies that may occur in the face of its incorrect use, it is necessary to develop actions promoting vocal health. In this context, we describe the action of the "Viva Voz" Project, developed in partnership between the Pro-Rectorate of Extension and Culture of UFGD, which aimed to promote the vocal health of the worker who uses the voice professionally, through the change of lifestyle, sensitizing them to the need for proper use of the voice, as well as basic care and vocal hygiene, to be adopted in the prevention of future vocal alterations.

"Viva Voz" Vocal Education and Continuing Teacher Training

During the realization of "Viva Voz" three training meetings were held, which took place in the months of August, September and October, in the Municipal Union of Education Workers of Dourados - SIMTED.

The participating public was about 150 teachers from the Public School System of Dourados/MS, selected from the dissemination of the event by the Union, with a significant number of registrants, among members and non-members.

The objective of the activity was to promote the awareness of the teacher regarding his phonatory apparatus and breathing, preventing the occurrence of future vocal alterations. It also sought to prevent possible dysphonias; improve breathing (respiratory form); improve vocal performance and professional longevity; contribute to the improvement of vocal imposition; guide on relaxation of vocal muscles and how to avoid unnecessary and harmful contractions; in addition to informing about vocal hygiene.

The action was justified by the need to provide professionals with knowledge about the voice, its pathologies and, mainly, to show the professional who has it as an instrument, that taking care of vocal health is allowing themselves a professional longevity and a better quality of life.

The activities were carried out through the development of theoretical/practical mini-courses, with programmatic content addressing the anatomy of the phonatory apparatus, physiology of the voice and vocal health (voice prophylaxis), as well as the use of the voice as a work instrument. The mini-courses lasted eight hours, from August to October 2017.

The workshops were taught in the SIMTED auditorium by a speech therapist specializing in voice, directed to elementary school teachers of the Public School System of the Municipality of Dourados/MS. UFGD provided the necessary material resources for the realization of the project, as described in Table 1:

Table 1. Description of the activities of "Viva Voz" project

Month	Content	Participants	Procedures
August	Anatomy of the phonatory apparatus and physiology of the human voice	150	Presentation of questions after exposition. Debate. Description of individual characteristics of vocal production, observed potentialities and difficulties.

			Performing vocal warm-up and cool-down exercises.
September	The voice as a work instrument: factors that can lead to illness	150	Description of techniques for vocal hygiene, care with food. Combating the use of alcohol and smoking. Activities for describing the work environment: location of noises, identification of sound production during classes - height, dynamics, level of fatigue or comfort produced; Vocal quality at the beginning and end of class. Application of vocal exercises of heating, vibration, strengthening, support and vocal production (location of the comfort region for sound production with less physical effort)
October	The voice as a work instrument: care and prevention.	150	Description of changes observed since the beginning of the workshops. Identification of needs for environmental, personal changes and, when necessary, monitoring and/or treatment for a longer period. Reflections on preventive practices of vocal care.

At the end of each meeting, when the opportunity was opened to the course participants to express themselves about the event and the use of voice in the classroom, they indicated their degree of satisfaction in relation to the content experienced and possible doubts, in addition to contributing with testimonies about repeated inadequate use of the voice.

At the end of the three meetings, they indicated a high level of satisfaction with the contents presented, in addition to indicating improvement in vocal emission and less fatigue during classes when applying some guidelines from this training. The doubts presented were

related to food, preventive practices, identification of possible dysphonias, recurrent injuries and needs for individualized care.

The responsible speech therapist presented the questions at the beginning of each meeting, answering them promptly or linking them to the prepared content. For participants who needed individualized care, some possibilities of care with public services were presented, although we recognize that they are still insufficient compared to the large existing demand.

RESULTS AND DISCUSSION

The reflections presented from this experience report contribute to the fulfillment of the objective of promoting the vocal health of workers who use their voice professionally. However, it is known that lifestyle change cannot occur only by offering information, as it requires a series of interventions at the structural level, such as changes in the environment in search of eliminating or reducing noise, exposure to pollutants, and excessive use of speech (JESUS, 2020).

The actions developed with the teachers who participated in the “Viva Voz” meetings, according to the results of the evaluation with the participants, were effective in raising awareness of the need for proper use of the voice, adopting basic care related to warm-up exercises, cool-down, posture, support and resonance, important techniques for improving vocal quality with less effort, avoiding fatigue and possible injuries. Also, the guidance on the need for healthy eating habits, especially in relation to constant hydration, and avoiding the use of alcohol and tobacco, as indicated in the study by Midorikawa (2020) were essential for awareness of preventive practices of future vocal alterations. Actions like this are important with teachers, especially women, who are more exposed to the development of vocal disorders (PIN et al., 2019).

Among the limitations of the study is the issue of time and number of participants, unfeasible for a screening process. Future actions should be planned over a long period, with smaller groups, allowing the screening and referral of cases requiring more specific interventions. Considering the post-pandemic period and its implications, Santos, Morais and Porto (2022) highlighted the importance of screening and monitoring practices for teachers, due to the great wear and tear suffered during the period of remote activities, with excessive and prolonged use of the voice.

CONCLUSIONS

The professional class of teachers is one of the most affected by dysphonia. Understanding the working and living conditions of teachers is paramount for vocal health. Seeking information from professionals specialized in the area is of utmost importance for the effectiveness of prevention.

Preventive action needs support for dissemination in schools and also in the initial training of future teachers. The need for teachers to have good voice and hearing conditions is important both for their health and for improving conditions in education. We can see that it is essential that teachers have good speech and a good voice. For this, they need to receive intense and adequate training to know how to properly use their phonatory apparatus.

Many teachers embark on an idealistic, tiring work, without the minimum knowledge of vocal technique and the risks of an organic alteration resulting from the inadequate use of the voice. Understanding the vocal mechanism and its proper use constitute the best way to prevent voice problems. Spoken voice is considered an integral part of human oral communication. So, we realize that what affects the voice affects speech, communication and the person in their biopsychosocial well-being.

The possibility of developing and protecting their voice quality gives the person security and confidence in oral communication, allowing better insertion in personal and work relationships, making them happier and more integrated. The participation of the speech therapist in the treatment of laryngeal diseases is of fundamental importance. As a rule, this professional will participate in the care of voice problems, both in the treatment and prevention of vocal problems.

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