



Voice and Distance Learning: proposal of a course for a university professor

**Voz e Ensino a distância (EaD): proposta
de um curso para professor universitário**

**Voz y aprendizaje a distancia: propuesta
de curso para un profesor universitario**

*Pablo Rodrigo Rocha Ferraz** 

*Léslie Piccolotto Ferreira** 

Abstract

Over the years, the understanding that the teacher suffers from vocal limitations in terms of vocal quality and efficiency has been steadily expanded. Issues beyond the aspects of vocal quality, complaints and symptoms are added to the important influence that the work has on the teacher's health, also conditioned by social, economic, technological and organizational factors. Simultaneously, studies with the university professor have been gaining space for a few years since we observe that higher education sector, in its process of restructuring and adaptation to the new socioeconomic scenario and the production of science, technology and innovation generates new demands that imply changes in the work organization of this professional. Thus, this communication presents a course proposal for the university teacher in distance education (DE) modality, as a tool to raise awareness of vocal health issues, changes in habits and promotion of strategies for environment adjustments and organization of the job that favor the improvement of quality of life. Organized as asynchronous communication, the course has a total workload of 30 hours, and is divided into six modules: 1 - The voice and its characteristics; 2 - Voice and work; 3 - Voice and body; 4 - Voice and its care; 5 - Vocal techniques and 6 - Communicative strategies of expressiveness.

Keywords: Voice Disorders; Faculty; Distance education; Voice Training; Occupational Health.

* Pontifícia Universidade Católica de São Paulo – PUC-SP, São Paulo, SP, Brazil.

Authors' contributions:

PRRF and LPF: Study management, conception and design, data analysis and interpretation, critical review and final approval of the version to be submitted.

Correspondence email address: Pablo Rodrigo Rocha Ferraz - pablrorrf@uol.com.br

Received: 3/21/2021

Accepted: 5/26/2021



Resumo

Ao longo dos anos o entendimento de que o professor sofre limitações vocais quanto à qualidade e eficiência vocal tem sido ampliado de maneira constante. Questões além dos aspectos da qualidade vocal, queixas e sintomas se somam a importante influência que o trabalho tem na saúde do professor, condicionada também por fatores sociais, econômicos, tecnológicos e organizacionais. Paralelamente, há alguns anos, estudos com o professor universitário vem ganhando espaço, pois, observa-se que o setor da educação de ensino superior, no seu processo de reestruturação e adequação ao novo cenário socioeconômico e de produção da ciência, tecnologia e inovação, gera novas demandas que implicam transformações na organização do trabalho desse profissional. Dessa forma, a presente comunicação tem como objetivo apresentar uma proposta de curso para o professor universitário na modalidade ensino a distância (EaD), como uma ferramenta de sensibilização quanto às questões da saúde vocal, orientação e conscientização de mudanças de hábitos e promoção de estratégias para adequação do ambiente e da organização do trabalho que favoreçam a melhora da qualidade de vida. Organizado como comunicação assíncrona, o curso possui uma carga-horária total de 30 horas, e é dividido em seis módulos: 1 – A voz e suas características; 2 – Voz e trabalho; 3 – Voz e corpo; 4 – Voz e seus cuidados; 5 – Técnicas vocais e 6 – Estratégias comunicativas de expressividade.

Palavras-chave: Distúrbios da Voz; Professores universitários; Ensino a distância; Treinamento da voz; Saúde do trabalhador.

Resumen

A lo largo de los años, la comprensión de que el maestro sufre de limitaciones vocales en términos de calidad y eficiencia vocal se ha ampliado constantemente. Temas más allá de los aspectos de calidad vocal, quejas y síntomas se suman a la importante influencia que tiene el trabajo en la salud del docente, condicionada también por factores sociales, económicos, tecnológicos y organizativos. Al mismo tiempo, los estudios con el profesor universitario vienen ganando espacio desde hace algunos años, ya que se observa que el sector de la educación superior, en su proceso de reestructuración y adaptación al nuevo escenario socioeconómico y la producción de ciencia, tecnología e innovación, genera nuevas demandas que implican cambios en la organización del trabajo de este profesional. Así, esta comunicación tiene como objetivo presentar una propuesta de curso para el profesor universitario en educación a distancia (DE), como herramienta de sensibilización en temas de salud vocal, orientación y sensibilización sobre cambios de hábitos y promoción de estrategias de adaptación al entorno y organización del trabajo. que favorecen la mejora de la calidad de vida. Organizado como comunicación asincrónica, el curso tiene una carga de trabajo total de 30 horas, y se divide en seis módulos: 1 - La voz y sus características; 2 - Voz y trabajo; 3 - Voz y cuerpo; 4 - Voz y su cuidado; 5 - Técnicas vocales y 6 - Estrategias comunicativas de expresividad.

Palabras clave: Trastornos de la Voz; Docentes; Educación a Distancia; Entrenamiento de la Voz; Salud Laboral.

Introduction

Over the years, there has been a growing understanding that teachers are impacted by vocal limitations regarding vocal quality and efficiency within the context of professional voice use.

Despite numerous studies showing that teachers are the most investigated category by speech-language pathologists in the area related to voice, which is due to the higher occurrence of vocal

alterations (63% and 35.8% for teachers and other professionals, respectively)^{1,2}, resulting from the intense vocal demand and relationship with aspects of the work itself³, due to the presence of risk factors in the school environment, whether in early education or elementary school^{1,3} and by favoring absenteeism⁴, other studies^{3,5} report that the profession has suffered a progressive social impact over the last few years for numerous reasons and, as a result, there is a growing association of teaching



activity with various morbidities, with psychological and vocal disorders being the main causes of absence from work ^{5,6}.

Some authors ⁵ report that the work performed and its nature have an important influence on the health of the professional, based on social, economic, technological and organizational factors. These authors also report that the results of their studies suggest an increase in the occurrence of work-related illnesses and injuries for university teachers, followed by physical education teachers and high school teachers and, in third place, teachers of early education/nursery education, followed by elementary school teachers (first to ninth grade).

In this sense, the risks related to the work organization that lead to damage to the voice and health of teachers may be related to numerous factors, such as inadequate workplace (presence of noise, inadequate ventilation, etc.), work routine (prolonged working hours, accumulation of functions, excessive vocal demand, etc.), biological aspects (aging and changes in the immune, endocrine, respiratory and digestive systems), use of medications, alcohol consumption, smoking and lack of hydration ³.

In addition, other authors ^{1,7-9} also report that, as a dynamic, functional manifestation resulting from a complex interaction of biological, psychological and social factors, voice disorder cannot be defined only as the absence of an acceptable and pleasant voice, but as part of an illness process.

In most studies, these questions are related to teachers who work in elementary and early childhood education, as well as the interest in research that correlates cause and effect, voice and perception of quality of life within the most varied dimensions and identification of vocal signs and symptoms and working conditions ¹. Thus, teachers have been central in studies that investigate the impact of teaching on their vocal quality and the influence of this quality on the effectiveness of content teaching.

At the same time, studies involving university professors have been gaining ground for some years, as in a broader perspective, in its process of restructuring and adapting to the new socio-economic and production scenario of science, technology and innovation, the higher education sector generates new demands that imply changes in the organization of these professionals' work ¹⁰.

Even though still focusing on vocal quality issues, studies with university professors should be further investigated, as far beyond these aspects, Higher Education Institutions (HEIs) are understood as complex ^{5,10-12}, in which the new work organization, resulting from changes over the years, implies impacts on the teacher's work activity with the work overload affecting health due to the new demands of work organization that place them as protagonists of this process.

According to some authors ¹⁰, some aspects, such as increased workload, increased academic productivity, competitiveness among peers, reduced time spent with colleagues, constant updating regarding academic training, generating "overtime" on weekends and holidays and the consequent reduction in hours of leisure and rest and loss of professional autonomy, are reported as causing factors of pain and mental and physical strain.

In addition, the challenges faced by professors and the lack of attention to the training of university professors for the development of teaching work in line with the contemporary challenges have been the focus of studies by researchers in the area, contributing to the strengthening of an institutional agenda ¹². Although teachers are not yet the main focus, there are advances insofar as there is evidence of a certain willingness of Higher Education Institutions (HEIs) to take responsibility for welcoming new teachers, intentionally highlighting issues aimed at an 'innovative' pedagogical work ^{10,11,13}.

Despite great advances, numerous studies in the area of teacher education report the challenges of the 21st century in terms of knowledge, theories and practices related to daily teaching and that, in this context, it seems inevitable that education professionals clearly know the need to critically and reflectively adapt to the educational challenges and demands reported as benchmarks of this century, overcoming outdated conceptions of the full development of teaching and learning processes in contemporary society. Given this context of transformations, teachers still remain among the main players in this process, but receiving more and more attention to their training and practice ¹⁴.

Despite scientific evidence proving the relationship between voice disorder and occupational risk factors, specific legislation and public policies to encourage the promotion of vocal health for teachers have been predominantly directed towards





educational training on voice care. There are few interventions in the contextual aspects of work, such as the identification and reduction/elimination of risks to vocal health in the work environment and organization, training in warm-up, cool-down and vocal expressiveness, as well as regular medical and speech-language pathology evaluations for early identification of vocal disorder ⁶.

The correct way to approach and reach the category of university professors has been a challenge associated with the need for intervention studies. Some authors ¹⁵ report that distance learning (DL) is a viable possibility to ensure people's access to certain information, since these people would not be able to participate in face-to-face activities, as most teachers, due to routine and work demand.

Such challenges require alternative ways in the search for specialized health services, while studies show that Telehealth can be a possible and safe alternative that has become popular and has grown exponentially due to the facilitation and reach provided by information technologies, overcoming barriers ¹⁶ and strengthening in all educational levels and modalities ¹⁷.

Despite the promising results of some studies that associate Telehealth and Speech-Language Pathology, the use of this modality in speech-language pathology clinical practice is still very recent and requires the investigation of speech-language pathology practices at a distance with a focus on training and improving the speech of communication professionals ¹⁶.

When detailing an intervention in the distance learning modality made with elementary and early education teachers from a municipal network, some authors ⁹ believe that this tool has a more stimulating character, so that teachers become active and independent professionals, as agents of their own quality of life.

Hence it was no accident that the Brazilian Federal Council of Speech-Language Pathology and Audiology (CFFa) regulated Teleaudiology as the exercise of Speech-Language Pathology during the COVID-19 pandemic, in which all face-to-face services were suspended in the country, through information and communication technologies (ICTs) ¹⁸, which guided several effective speech-language pathology practices in a singular moment ^{13,19,20}.

The theme of the voice of university professors associated with the conditions of work environment and organization and intervention strategies

in the DL modality is relevant due to the lack of studies compared to the number of studies involving professors from other levels of education, due to the possibility of reach the largest number of professors in less time, and due to the multiplicity of issues in this universe that must be investigated when evaluating the relationship of professors with their work from the perspective of the voice ^{10,12}.

In the current scenario, in which social distancing is part of interpersonal, economic and educational relationships, the theme of the voice of university professors associated with the conditions of work environment and organization and intervention strategies in the DL modality is relevant due to the lack of studies compared to the number of studies involving professors from other levels of education, due to the possibility of reach the largest number of professors in less time, and due to the multiplicity of issues in this universe that must be investigated when evaluating the relationship of professors with their work from the perspective of the voice.

Therefore, within pedagogical practices that involve voice and communication as teaching and learning strategies, this Communication aims to present a course proposal for university professors in the DL modality, as a tool to raise awareness about vocal health issues, guidance and awareness of changes in habits and promotion of strategies for environmental adjustments and work organization that favor the improvement of quality of life.

Description

Course preparation steps

At first, when thinking in a proposal of a course for university professors, the first obstacle would be to select studies on intervention with professors that could bibliographically support the methodology for preparing the course. This is due to the fact that, despite the large number of studies that relate voice and teachers, there are very few studies with intervention. This can be seen in a survey carried out by Brazilian authors ¹, which reported that only 6.2% of the selected and analyzed studies (n=500) included some type of intervention with teachers. Going beyond this study, in 2014 the Brazilian Society of Speech-Language Pathology and Audiology (SBFa) released a survey with more than 900 publications showing that the voice of teachers remains a priority object in studies developed by



speech-language pathologists who are interested in understanding the conditions of voice production in the work context ⁷.

The next step was to try to define the profile of university professors who are the focus of this course. Given that the pedagogical practice is a sum of factors that are constituted during the personal, academic and professional life of each one, this definition is complicated due to the endless possibilities and particularities of teachers ¹⁰. Several factors, such as family life, social and school experiences, undergraduate training, refresher courses, and continuing education, among others, contribute in some way to shape the way of being of each teacher ^{11,14,15}.

When analyzing the literature looking for a model or protocol that would establish minimum criteria to develop promotion and intervention actions in the category of teachers, it can be noted that the best evaluated studies address two perspectives: the teachers' perspective (with data obtained through the self-perception and self-reference) and the perspective of speech-language pathologist (through the application of various instruments such as questionnaires, screenings or protocols) ²¹.

In this sense, the same author ²¹ also reports that Speech-Language Pathology is responsible for several actions in order to promote the vocal well-being of teachers, which are often called as 'Teachers Vocal Health Program'. Depending on the professional involved, these actions can be focused on the prevention of voice disorders, on the promotion and protection of the teacher's vocal health, with several strategies to reduce vocal risk, improve the quality of life, understanding the organization of teaching work, among others.

In order to understand the fundamentals that would be the basis of the course with the perspective of offering information to university professors so that they can reflect on the voice in teaching and strategies to seek a balance of their bodies, their emotions and their communication to institutional context issues (work environment and organization), the systematic review study on vocal intervention ²² showed significant premises that guided the decision of this study. For this study, the vocal intervention used with teachers that generates better results must have an approach combined with direct (vocal strategies for more effective production) and indirect (information to understand vocal use,

psychological and environmental factors that may lead to voice changes) actions on vocal functioning.

The importance of policies that expand access to education, ensuring quality and equity in education, has been widely discussed in recent years ^{11,23}. In this perspective, there is a growing offer of courses in the DL modality, which have had good acceptance and proven benefits, such as: providing listening to the needs of teachers, offering a moment of reflection and acquisition of vocal health contents and providing an active position on their own vocal health by teachers ⁹.

Consequences of the COVID-19 pandemic, such as social isolation and the suspension of in-person classes at schools and universities, brought an urgency to the discussion and development of DL strategies as an attempt to mitigate the immediate effects on the learning process ²⁴. However, it should be noted that the possible solution could also become another challenge for education.

After selecting the fundamentals, the course presentation needed to be decided. The study chose to be based on a Brazilian study of intervention with teachers in the DL modality, after a broad discussion of form and content among the authors ⁸.

Although the beginning of DL was focused on Education, it should be noted that the health field took advantage of contemporary technological advances and incorporated its concepts and practices into Health Education, allowing for better access to health care in large teaching, research and care centers, as well as the quality of service provided, and the effectiveness of various interventions ^{23,25}.

In addition, by approaching university professors and the characteristics involved in their teaching activities described above, the technologies applied to education also enable greater access to higher education, democratizing this type of teaching for populations living in regions farther away from large centers of the country, thus promoting the idea of ascension and social mobility among the working class through distance courses ¹¹.

The proposal presented was called 'Teacher, let's take care of your voice?', as it refers to the intention of a partnership between the researchers who developed the course and the potential participating teachers. With regard to form and content, the structure of this course focused on university professors was guided by the study of Brazilian researchers ^{8,26} whose proposal was aimed at el-



ementary and early childhood education teachers in the municipal network of São Paulo.

This study is part of a research project submitted and approved by the Research Ethics Committee of Pontificia Universidade Católica de São Paulo – PUC/SP under the CAAE no. 89243518.8.0000.5482.

The course

The course is organized as a form of asynchronous communication, with a total workload of 30 hours divided into six modules, with guiding questions for reflection carried out before and/or after the beginning of each module, according to the need.

The course modules are as follows: 1 – Voice and its characteristics; 2 – Voice and work; 3 – Voice and body; 4 – Voice and its care; 5 – Vocal techniques; and 6 – Communicative expressiveness strategies. Each module has a link to access the respective content and an item called ‘Tips of the Week’ (videos).

As for the content, the course aims to address the physiological/functional aspects of the voice (voice care; body, posture and relaxation; articulation and resonance; expressiveness; voice and emotion) and voice characteristics related to teaching work in higher education (work environment and organization).

The entire course was designed to be placed on the Moodle platform, which can be accessed by teachers at any time and without any interruption. The modules are self-oriented regarding the direction of the material (reading the content, watching videos and listening to audios, accessing complementary materials, filling out questionnaires, etc.), not requiring a tutor.

Each teacher is monitored by completing the questionnaires available for each module. The answers of each participant are restricted to the Google Form online platform, in which only researchers and the academic sector of Speech-Language Pathology at Derdic (Division for Education and Rehabilitation for Communication Disorders) have access to all the questionnaires. However, after filling out the questionnaire, each teacher received an individual automatic response with the results of the questionnaires and the respective guidelines. Depending on the results of the questionnaires, the teachers had access to the e-mails and telephone numbers of the researchers

and the Orofacial Motricity and Voice department at Derdic.

Module 1 – Voice and its characteristics.

Initially, before watching the module, teachers were asked to answer the Voice Disorder Screening Index (ITDV)²⁷ and IDV-10²⁸ questionnaires, compiled in a single Google Form link and called Voice Disorder and Voice Handicap Screening (APPENDIX 1).

The ‘Teacher, let’s take care of your voice?’ questionnaire aimed to measure and qualify teachers’ knowledge about their own voices. The strategy of using the ITDV and the IDV-10 aimed to identify the presence of voice disorder and possible voice handicap. Teachers have access to this instrument online through Google Form via the Moodle platform in the respective area of Module 1. By this means, the collection of information allows automatic access to the answers and facilitates the identification of the presence of voice disorder (if the participant has ≥ 5 symptoms reported as ‘sometimes’ and ‘always’) and voice handicap (with a cut-off threshold of 7.5). After completing the questionnaire, the teacher received an automatic response in the registered email, with the respective guidelines depending on the result (whether or not to seek assistance from a voice professional, an otorhinolaryngologist and/or a speech-language pathologist). In addition, all participating professors could contact the researchers and the service department of Derdic through the information provided at the end of the questionnaire with any questions and/or advice.

The initial module of the course addresses the characteristics of the voice and its production, in addition to providing information on the perception of voice and its relationship with communication and teaching. After the module, a text called ‘Few people know how to listen to themselves’, by Pedro Block, was attached as a link at the end of the module.

Module 2 – Voice and work.

Before viewing the module, an initial question was asked: ‘Have you ever thought about your relation to your work environment and organization?’ Reflection on this question led the teacher to the content of the respective module.

This module offered a reflection on the conditions of the work environment and organization



and the possible impacts of these on the well-being of your voice. Individual and collective strategies were presented to inform and guide the teacher in dealing with inappropriate situations in the work environment and organization, such as the approach of the IAPC (Internal Accident Prevention Commission), in a collective movement to strengthen the partnership to improve the conditions of the work environment and organization.

Module 3 – Voice and body.

In this module, teachers were informed about postural aspects, body awareness during the workday, the importance of the relationship between voice and body in the classroom and strategies to help body conditioning for everyday life.

At the end of the module, teachers had access to the video “The body, the voice and the word in communication” published on YouTube (accessing <https://www.youtube.com/watch?v=4s2pp6BY30g>).

In addition, the final page of the module provided the informative text called ‘Body language is a powerful form of communication’, by Dr Cida Stier, a speech-language pathologist. This information is useful to help teachers understand the relationship between voice and body.

Module 4 – Voice and its care.

After presenting information about the characteristics of the voice, the influence on the work organization and environment and the relationship with the body, this module provided aspects related to vocal health, based on guidelines on general health, hydration, food and clothing, in addition to reflection on myths and truths about vocal care.

At the end of the module, the platform provided additional information on voice care (accessing https://www.pucsp.br/laborvox/cuidados_vocais/cuidados_vocais.html) prepared by the research group of the *Laboratório de Voz* (LaborVox/PUC/SP), in addition to FAQs for the professional voice area (accessing https://www.sbfa.org.br/portal2017/themes/2017/faqs/faq_voz_profissional.pdf) prepared by the Brazilian Society of Speech-Language Pathology and Audiology (SBFa)

Module 5 – Vocal techniques.

From this module, information was provided from the theoretical and practical point of view on breathing, speech articulation and resonance, as well as information on voice amplification in reso-

nance boxes and the need for balanced use of these resonators to achieve a more pleasant, comfortable and effortless voice production. For this, teachers had access to an instructional video at the end of the theoretical exposition of each function showing the execution of the vocal exercises. The exercises for each function followed the following principles²⁹:

1. Breathing: improving maximum phonation time and respiratory flow control using facilitating sounds;
2. Speech articulation: preparing the orofacial muscles, modifying speech production and facilitating vocal production using the exercise of speech articulation and tongue rotation in the oral vestibule;
3. Resonance: stimulating phonatory balance between source and filter and reducing the impact on vocal fold vibration using semi-occluded vocal tract exercises.

Module 6 – Communicative expressiveness strategies.

This module addressed the voice as a means of emotion and personality expression, in addition to aspects related to verbal and non-verbal expressiveness.

The purpose of this module was to make teachers understand that expressiveness is the result of knowledge acquired throughout the course and the perception of the intentional impact of communication on the speaker and listener.

Thus, in addition to the speech-language pathology perspective on expressiveness, teachers had access to an informative video on this issue from the perspective of another communication professional. This video was also posted on YouTube and could be accessed at <https://www.youtube.com/watch?v=jDza15pIvzo>.

At the end of the modules, teachers were asked to fill in the Voice Disorder and Voice Handicap Screening (APPENDIX 1) questionnaire again and had automatic access to the answers, just as before the beginning of the course.

Course Closing (Course Evaluation and Participation Certificate).

After completing the six modules, teachers could access the topic on the Moodle platform called “Closing/Evaluate the course”. In this topic, teachers could access the course evaluation questionnaire (APPENDIX 2) in electronic format

online through the Google Form. After completing the questionnaire, the teachers received the course participation certificate with a workload of 30 hours.

Final considerations

In order to prepare the course ‘Teacher, let’s take care of your voice?’, increasing the scope of intervention beyond the traditional vocal guidelines and interventions, as commonly reported in the literature, it was required to understand the universe of university professors.

It was possible to notice gaps in information and training related to teachers and the principles involved in pedagogical practices (assumptions learned in undergraduate courses), as well as information that promotes vocal health from the perspective of verbal and non-verbal communication and not just as a product of vocal folds and vocal tract. As the literature mainly provides studies with early education and elementary school teachers, this was the first real challenge faced by the study.

With regard to the use of the DL methodology, it is a suitable modality for the moment of the COVID-19 pandemic. Furthermore, the growth of DL in Brazil has been recognized and legitimized by Educational Institutions, by the Ministry of Education of Brazil^{11,24}, by society and by the Brazilian Federal Council of Speech-Language Pathology and Audiology (CFFa)¹⁸ as an important tool for the dissemination of knowledge and democratization of the information^{23,25}.

The publication of the DVRT Protocol is understood³⁰ as an important instrument to guide professionals in the SUS network (Health Surveillance, Primary Care, Medium and High Complexity), private services, corporate health services and Occupational, Safety and Health Specialized Services (SESMT) to identify, notify and support surveillance actions in cases of WRVD and its determinants. In this context, and given that the health needs of teachers are already known, a line of care with assistance flow in the health network must be developed.

Thus, despite the preventive character of this proposal, it is understood that the development of an institutional policy in universities could leverage a national policy that could address teachers at all levels of action.

References

1. Dragone MLS, Ferreira LP, Giannini SPP, Simões-Zenari M, Vieira VP, Behlau M. Voz do professor: uma revisão de 15 anos de contribuição fonoaudiológica. *Rev da Soc Bras Fonoaudiol*. 2010; 15(2): 289–96.
2. Behlau M, Zambon F, Guerrieri AC, Roy N. Epidemiology of Voice Disorders in Teachers and Nonteachers in Brazil: Prevalence and Adverse Effects. *J Voice*. 2012; 26(5): 665.e9-665.e18.
3. Giannini SPP, Latorre MRDO, Ferreira LP. Distúrbio de voz: definição de caso em estudos epidemiológicos. *Distúrb Comun*. 2016; 28(4): 658–64.
4. Moselli LDL, Assunção AA, Medeiros AM. Absenteeism due to voice disorders in teachers: literature review, 2005-2015. *Distúrb Comun*. 2017; 29(3): 579–87.
5. Marchetti JR, Busnello GF, Kolhs M. Agravos à saúde do professor relacionados ao trabalho: revisão de literatura. *Rev Uningá Rev*. 2016; 25(3).
6. Medeiros AM, Vieira MT. Distúrbio de voz como doença relacionada ao trabalho no Brasil: reconhecimento e desafios. *Cad Saúde Pública*. 2019; 35(10): e00174219.
7. Dragone MLS, Giannini SPP, Ditscheiner ES, Andrade BMR, Ferreira LP. A voz do professor. In: Motta L, Amorim GO, Raize T, Dragone MLS, Almeida AA, editors. *Voz Profissional: produção científica da fonoaudiologia brasileira (2008-2012)*. São Paulo: Sociedade Brasileira de Fonoaudiologia; 2014. p. 1–51.
8. Ferreira LP, Souza RV, Souza AR, Burti JS, Pereira MM, Giannini SPP, et al. Intervenção fonoaudiológica com professores: análise de uma proposta realizada a distância. *Distúrb Comun*. 2019; 31(2): 234–45.
9. Pompeu ATS, Ferreira LP, Trenche CB, Souza TT, Esteves AO, Giannini SPP. Bem-estar vocal de professores: uma proposta de intervenção realizada a distância. *Distúrb Comun*. 2016; 28(2): 350–62.
10. Souza KR, Mendonça ALO, Rodrigues AMS, Felix EG, Teixeira LR, Santos MBM, et al. A nova organização do trabalho na universidade pública: Consequências coletivas da precarização na saúde dos docentes. *Ciência e Saúde Coletiva*. 2017; 22(11): 3667–76.
11. Silva ZG da, Pavão ACO. Curso de EAD: Impactos na Formação e Prática dos Professores. *Rev Iberoam Tecnol en Educ y Educ en Tecnol*. 2019; (23): 31–42.
12. Sordi MRL De. Docência no ensino superior: interpellando os sentidos e desafios dos espaços institucionais de formação. *Educ em Rev*. 2019; 35(75): 135–54.
13. Siqueira LTD, Santos AP dos, Silva RLF, Moreira PAM, Vitor J da S, Ribeiro VV. Vocal Self-Perception of Home Office Workers During the COVID-19 Pandemic. *J Voice*. 2020; S0892-1997.
14. Oliveira ESG. A formação de educadores e o uso das tecnologias digitais: a voz dos professores. In: *Formação de Professores e a Condição do Trabalho Docente*. Ponta Grossa: Atena Editora; 2019. p. 172–87.
15. Barbosa PP, Ursi S. Motivação para formação continuada em Educação a Distância: um estudo exploratório com professores de Biologia. *Rev Electrónica Enseñanza las Ciencias*. 2019; 18(1): 148–72.



16. Narece IL. Oficina para suavização de sotaque no {R} caipira em locutores: comparação entre abordagem presencial e a distância [tese]. Biblioteca Digital de Teses e Dissertações da Universidade de São Paulo; 2015.
17. Almeida AJL. As trajetórias da Educação a distância. O Adjun Rev Pedagógica da Esc Aperfeiçoamento Sargentos das Armas. 2019; 6(1): 31–3.
18. Conselho Federal de Fonoaudiologia. Resolução no 427, de 01 de março de 2013. Dispõe sobre a regulamentação da Telessaúde em Fonoaudiologia e dá outras providências [Internet]. 2013 [cited 2021 Jan 25]. Available from: https://www.fonoaudiologia.org.br/resolucoes/resolucoes_html/CFFa_N_427_13.htm
19. Primov-Fever A, Roziner I, Amir O. Songbirds Must Sing: How Artistic Voice Users Perceive Their Voice in Times of COVID-19. *J Voice*. 2020; In Press.
20. Cantarella G, Barillari MR, Lechien JR, Pignataro L. The Challenge of Virtual Voice Therapy During the COVID-19 Pandemic. *J Voice*. 2020; S0892-1997.
21. Aoki MCS. Elaboração e validação de um guia fonoaudiológico para ações de saúde vocal do professor [tese]. Paraná: Universidade Tuiuti do Paraná; 2019.
22. Anhaia TC, Gurgel LG, Vieira RH, Cassol M. Intervenções vocais diretas e indiretas em professores: revisão sistemática da literatura. *Audiol - Commun Res*. 2013; 18(4): 361–6.
23. Piropo TG., Amaral HO. Telessaúde, contextos e implicações no cenário baiano. *Saúde debate*. 2015; 39(104): 279–87.
24. Pierro B. Para além da sala de aula. *Revista Pesquisa Fapesp*. 2020; 292: 82–7.
25. Pereira CCA, MACHADO CJ. Telessaúde no Brasil: conceitos e aplicações. *Ciênc saúde coletiva*. 2015; 20(10): 3283–4.
26. Pompeu ATS. Intervenção fonoaudiológica com professores: análise de uma proposta realizada na modalidade de Educação a Distância [dissertação]. São Paulo: Faculdade de Ciências Humanas e da Saúde da PUC-SP; 2016.
27. Ghirardi ACDAM, Ferreira LP, Giannini SPP, Latorre MRDO. Screening index for voice disorder (SIVD): Development and validation. *J Voice*. 2013; 27(2): 195–200.
28. Costa T, Oliveira G, Behlau M. Validation of the Voice Handicap Index: 10 (VHI-10) to the Brazilian Portuguese. *CODAS*. 2013; 25(5): 482–5.
29. Behlau M, Madazio G, Feijó D, Azevedo R, Gielow I, Rehder MI. Aperfeiçoamento vocal e tratamento fonoaudiológico das disfonias. In: Behlau M, editor. *Voz: O livro do especialista*. V2. Rio de Janeiro: Revinter; 2010. p. 409–564.
30. Brasil. Distúrbio de Voz Relacionado ao Trabalho – DVRT. Brasília: Ministério da Saúde, Secretaria de Vigilância em Saúde, Departamento de Vigilância em Saúde Ambiental e Saúde do Trabalhador; 2018.



Appendix 1 – Screening for Voice Disorders and Voice Handicap

I – Identification

<p>Full name *</p> <p>Your answer _____</p>
<p>Date of birth *</p> <p>E.g.: January 7, 2019</p> <p>Your answer _____</p>
<p>Gender *</p> <p>Select only one option</p> <p><input type="radio"/> 0. Female</p> <p><input type="radio"/> 1. Male</p>

II – Voice Disorder Screening Index (ITDV)

Check the option that best describes how often do you have the following symptoms:

	Never	Rarely	Sometimes	Always
Hoarseness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Loss of voice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Voice failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rough voice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Throat clearing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dry cough	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cough with mucus	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pain when speaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pain when swallowing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mucus in the throat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dry throat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fatigue when speaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

If you would like to add any comments, please write below.

Your answer _____



III – Voice Handicap Index (IDV-10)

Check the option that best describes how frequently you have the same experience:
Check only one answer per line

	Never	Almost never	Sometimes	Almost Always	Always
My voice makes it difficult for people to hear me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People have difficulty understanding me in a noisy room.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People ask, "What's wrong with your voice?"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel as though I have to strain to produce voice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My voice difficulties restrict my personal and social life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The clarity of my voice is unpredictable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel left out of conversations because of my voice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My voice problem causes me to lose income.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My voice problems upset me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My voice makes me feel handicapped.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>





Appendix 2 – Evaluation of the ‘Teacher, let’s take care of your voice?’ course by the teachers.

Evaluation of the ‘Teacher, let’s take care of your voice?’ course.

We have reached the end of this journey of knowledge. Therefore, we want to know your opinion and understand how productive and important it was to acquire this knowledge about the universe of the voice of university professors.

Carefully read each question and answer by marking your opinion according to the options below:

- * Strongly Disagree
- * Disagree Moderately
- * Undecided
- * Agree Moderately
- * Strongly Agree

Professor MSc Pablo Rodrigo Rocha Ferraz (Doctoral student in Speech-Language Pathology)
PUC-SP and LaborVox

I – Identification

Full name *

Your answer

Today's date *

Your answer

Gender *

Select only one option

0. Female
1. Male

Marital status *

Select only one option

1. Single
2. Married or any union
3. Legally separated or divorced
4. Widow/widower

Educational level *

Select only one option

- Complete Undergraduate Degree
- Incomplete Master's Degree
- Complete Master's Degree
- Incomplete Doctoral Degree
- Complete Doctoral Degree
- Postdoctoral degree





II – How do you rate the course?

How do you evaluate the use of technology to receive information about teachers' voices? *

Select only one option per line

	Strongly Disagree	Disagree Moderately	Undecided	Agree Moderately	Strongly Agree
It allowed me to have proper access to the content in a clear and objective way.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It contributed to the improvement of my quality of life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I didn't like the fact that it was completely at a distance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt comfortable not having to commute and having time to do other things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The materials provided are sufficient to assimilate the content.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt safe taking the course even without a tutor/teacher.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to put into practice the acquired knowledge while maintaining acceptable vocal quality.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been thinking about strategies to improve my work environment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The remote modality provided me with: *

Select only one option per line

	Strongly Disagree	Disagree Moderately	Undecided	Agree Moderately	Strongly Agree
Availability to be always present.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More time to do other activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Realize that remote and face-to-face modalities are similar.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Greater attention to spoken or executed content.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledge about voice and the relationship with teaching that I was unaware.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>





Difficulty in adequately preparing the environment for the meeting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty in observing and understanding the performance of vocal techniques.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty in understanding the information/guidelines without the help of a tutor/teacher in person.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doubts regarding voice issues that were not clarified.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The time and the number of modules were sufficient.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Difficulty in access issues on the platform and access to modules and contents.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How do you rate yourself in relation to the course: *

Select only one option per line

	Strongly Disagree	Disagree Moderately	Undecided	Agree Moderately	Strongly Agree
I participated every week according to the guidelines in each module.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I accessed the materials made available in each module.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I committed myself to the activities proposed by the course from beginning to end.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My interest in the course remained from the beginning to the end of it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please use the space below if you would like to add a comment. We appreciate your participation.

Your answer _____

