



Atena
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2022

PROFESSIONAL VOICE:

Integrated Practices of Teaching,
Research and University Extension

Maria Fabiana Bonfim de Lima-Silva
Aline Menezes Guedes Dias de Araújo
Patrícia Brianne da Costa Penha
Gabriella Lucena Feitosa
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(Organizers)



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PREFACE

Maria Fabiana Bonfim de Lima-Silva

This e-book is a collection of experiences from my insertion, in 2011, as a professor in the Department of Speech Therapy at the Federal University of Paraíba (UFPB). Upon joining this institution, I developed an extension project called the Voice Advisory Program for Teachers (ASSEVOX), based on the knowledge I gained during the period in which I took my master's and doctorate, at the Pontifical Catholic University of São Paulo (PUC-SP), under the guidance of the Professor Dr. Leslie Piccolotto Ferreira and Prof. Dr. Zuleica Camargo.

So, in the following year, with the desire that extension students could experience the reality of professors through practical experiences that went beyond the walls of the university, I submitted ASSEVOX to the UFPB 2012 Probex Notice, but unfortunately we did not receive the scholarship. Even so, with a pioneering group of six students, we started our actions through a Fluex project (Project only with volunteer students) in a private school with the objective of promoting vocal health for teachers and the school community. I remember that we went through several challenges, because the room that the school gave us for collection was not a clean, pleasant environment, however, we did not get discouraged and cleaned, painted the walls and renovated the entire room. Shortly after the renovation, we started our vocal health assessments and workshops. I remember to this day that many teachers were surprised by our act of cleaning the room, as no one had ever done anything to improve that room, and they said: "*It was an abandoned room*"; "...it was a real storage room for the school, now there is another room, well *organized and clean*".

It is worth noting that in the first meeting with the director of this school, it was emphasized that we would carry out vocal assessments of the teachers, but that after these procedures, the teachers participating in the project would receive the reports with the diagnosis and then participate in voice experience workshops with content theoretical and practical, within the school. In addition, our team inserted vocal health actions in the school calendar events (student day, teacher's day, family day, among others).

Then, in 2013, we took an important step towards ASSEVOX, we managed to get the project approved with a grant in the Probex 2013 Notice, and we entered into a partnership with the Department of Education and Culture of João Pessoa (SEDEC-JP). Thus, between 2012 and 2019, with the support of the Edital Probex and Fluex (UFPB), more than 60 extension workers participated in our project, from undergraduate, graduate and other courses (Psychology, Physiotherapy, among others). Currently, ASSEVOX has managed to cover 15 schools in the public and private network, including kindergarten, elementary and

high school. In addition, during these seven years, in person, we carried out an average of 420 vocal screenings, 44 voice experience workshops and 21 lectures. In the last lecture, held in 2019, we were invited by SEDEC-JP to talk about the importance of voice in teaching work and handling voice amplifiers, in which my doctoral student Patrícia Penha and I presented relevant data from the research developed by ASSEVOX and strategies correct handling of microphones (voice amplifiers). It is worth noting that more than 500 amplifiers were delivered to the teachers participating in this event.

Such actions carried out during this period, yielded us several products, including participation in local, regional and national events (congresses, seminars, meetings), 10 publications of scientific articles in national and international journals, 14 book chapters, 73 complete, expanded abstracts and annals, 21 course conclusion works, 31 scientific initiation works, 5 dissertations, among others.

However, in the first months of 2020, we were surprised by the onset of the SARS-CoV-2 pandemic, a rapidly spreading respiratory syndrome. Since then, several measures by the World Health Organization (WHO) have been taken to prevent the spread of this virus, including social distancing. This fact brought as the main impact to the ASSEVOX project the impossibility of carrying out the actions (workshops, screening and attendance) in person. As a result of these various changes, the project had to reinvent itself and adapt to the new reality, using digital platforms to continue developing its activities and contributing, more than ever, to society and the academic community. In addition, the project, which was previously aimed only at teachers, expanded its target audience to all voice professionals (teachers, telemarketers, digital influencers, actors, singers, telejournalists and others) and thus came to be called Vocal Advisory Program for Voice Professionals (ASSEVOX).

According to this new appearance, ASSEVOX showed itself to have solid foundations and an excellent potential to adapt to new situations. In this period, we idealized to make our *Instagram* profile a digital magazine, containing information accessible to voice professionals and the entire community. Through meetings, we create content, develop means of interaction and broaden our view of the most diverse forms of health promotion. With this, we continue with our scientific initiation projects, discuss book chapters, participate in open classes and regional events, publish scientific articles and, above all, drive our dreams!

Currently, we had the project "Analysis of the effects of a distance vocal health program for teachers in the state of Paraíba" approved in the Universal Demand Notice n° 09/2021, promoted by the Foundation for Research Support of the State of Paraíba (FAPESQ), which brings unprecedented insofar as there are no other proposals in force in the state with the purpose of assisting and supporting the essential professional for the development of our society, such as the teacher. issues related to the health and quality of life of several educators in the state, especially those who do not have the financial possibilities or conditions to be accompanied by a professional speech therapist.

This *e-book* is part of a beautiful journey full of challenges. A path traveled with dedication, responsibility and union. Therefore, we invite you, the reader, to know a little more about the work performed by the ASSEVOX group over these 10 years.

I wish you a good read and that this work is an inspiration for all those who wish to tread the paths of university extension, teaching and research.

PRESENTATION

This *e-book* entitled “**Professional Voice: Integrated Teaching, Research and University Extension Practices**” is the result of an extension project called “Vocal Advisory Program for Voice Professionals” (ASSEVOX), which has been developed since the year of 2012 with the support of the public notice for the Extension Scholarship Program (PROBEX) of the Federal University of Paraíba (UFPB), whose main objective is to promote vocal health and prevent voice disorders in the most diverse professionals who depend on it to perform their work.

In this work, 14 chapters were gathered that explain from the experience of students and teachers who participated in the voice advisory program, to themes related to the prevention of voice disorders, vocal health promotion and around expressiveness. In them, there are studies about teachers, telemarketers, telejournalists and digital influencers. The purpose of this e-book is to expand the knowledge of undergraduate, graduate and Speech-Language Pathology professionals, as well as all those interested in studying voice professionals. In addition, we hope to encourage and drive the development of research through the vision and experiences of a university extension.

It is important to highlight that this work is composed of results of scientific initiation research and experiences around the ASSEVOX university extension. The chapters were prepared by students (undergraduate and graduate students) and by professional researchers from UFPB and other institutions (UNIPÊe PUC-SP) who, in a responsible and qualified way, proposed to explain their studies with current and relevant themes for the scientific community and society as a whole.

We wish you a great read!

Maria Fabiana Bonfim de Lima-Silva
Aline Menezes Guedes Dias de Araújo
Patrícia Brianne da Costa Penha
Gabriella Lucena Feitosa
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WORK AND VOICE CONDITIONS OF ELEMENTARY EDUCATION TEACHERS IN THE REMOTE CONTEXT

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study, approved by the Ethics Committee for Research with Human Beings of the institution of origin, under CAAE:10719513.5.0000.5188. 64 elementary school teachers who teach in remote education participated. Data were collected through an on-line questionnaire using the Google Forms tool and transmitted through social networks. Data were analyzed using SPSS statistical software. **Results:** It was found that most teachers worked eight hours or more a day and taught four subjects or more. During remote teaching, teachers pointed out that there was an increase in stress and that the most present vocal symptoms were hoarseness and vocal fatigue. **Conclusion:** The research shows that in the remote context, elementary school teachers are susceptible to factors that influence the emergence of voice disorders.

KEYWORDS: Voice, Faculty, Working conditions. On-line teaching, Occupational health.

1 | INTRODUCTION

The teacher is a professional who uses the voice as a vehicle of direct communication with students and who needs it to perform his job function. Through the voice, teachers transmit knowledge and create bonds to develop the learning process, as well as use it in the interaction and construction of emotional bonds with students (MARÇAL et al., 2021). According to the literature, teachers are the individuals who have a higher incidence of vocal disorders, due

ABSTRACT: The SARS-CoV-2 virus pandemic brought a new work context to teachers, remote teaching. In this new context, harmful factors to the voice can favor the illness and leave of teachers. **Objective:** To verify the working and voice conditions of elementary school teachers in the remote context. **Methods:** This is an observational, descriptive, cross-sectional and quantitative

to exposure to organizational and environmental factors (PENHA et al., 2021).

As a consequence of the multiple risk exposure factors, symptoms such as hoarseness, sore throat and vocal fatigue may arise, these are some observed signs of vocal abuse or voice use in inappropriate working conditions, which can corroborate the emergence of a possible work disorder (LOPES et al., 2018). The vocal demand, the sociodemographic factors and the risks directly related to both the organization and the work environment have an impact on the occurrence of voice disorder (FREITAS et al., 2019).

In 2019 a virus (SARS-CoV-2) was identified from China and months later there were thousands of cases spread around the world. As a result of the arrival of the virus in Brazil (known as Covid-19), schools implemented remote teaching and this virtual context brought besides innovation in education, a work overload to teachers. These professionals are under constant pressure and demands, with lack of delimitation of working time because of the adaptation of their teaching activities, daily routine of domestic and family activities, frustrations and fatigue, causing an intensification of work for these professionals (MARQUES, 2021).

With the new reality, teachers were forced to migrate from face-to-face teaching modality to the online modality, however, these professionals had no training or tools to help them in this transition. This lack of planning can cause several problems, considering the predisposition of these individuals to develop vocal disorders (OLIVEIRA;JUNIOR, 2020).

Given this context exposed, this research aims to verify the working conditions and voice of elementary school teachers in remote education.

2 | METHODS

This is an observational, descriptive, cross-sectional, quantitative study, approved by the Ethics Committee for Research with Human Beings of the institution of origin on May 27, 2021, under process number 091/13, under CAAE:10719513.5.0000.5188. At first, the participants signed the Informed Consent Form (ICF) according to the MS/CNS/CNEP Resolution n° 466/12 of December 12, 2012.

A total of 64 teachers of both genders, teaching in public and private schools in Brazil, of elementary level I or II, who were working in remote education, participated in the current research.

A virtual questionnaire was developed through the Google Forms tool, comprising 4 sections and 47 questions related to socio-demographic characteristics, professional performance, synchronous and asynchronous daily workload, working conditions in the current context, as well as self-perception of communication and expressiveness aspects. The dissemination of the link to access the online questionnaire was through WhatsApp and Instagram.

The data were tabulated and analyzed using descriptive and inferential statistics in the software Statistical Package for Social Sciences (SPSS, v. 20, IBM, Chicago, IL). Descriptive analysis was performed using measures of central tendency, measures of dispersion, and frequency analysis of the study data.

3 | RESULTS AND DISCUSSION

Teachers are professionals who use the voice to perform their jobs and therefore have a high risk of developing vocal disorders due to the presence of multifactors in the work environment (PIZOLATO et al., 2013). Due to the SARS-CoV-2 pandemic, schools have adopted the remote teaching model to continue classes. Thus, the objective of the present research was to verify the working conditions and voice of elementary school teachers in remote teaching.

The female gender was predominant in the present study (71.90%; n=46), similar to that found in the literature (PIZOLATO et al., 2013). It is noteworthy that in women the vocal effort is even more intense, where often, the woman seeks to reconcile professional work with household chores, which can increase the demand of vocal use (LIMA-SILVA et al., 2012).

The age of the teachers ranged from 18 to 67 years, with a mean of 39 years (SD = 9.816). It was noted that there were individuals belonging to the elderly and, according to the literature, voice parameters change over the years and vocal quality changes, which may cause hoarse voice, presence of tremor, vocal fatigue and vocal instability (GAMPEL;CARSCH, 2008).

Regarding the time in the profession, it was found a mean of 14.16 years (SD=9.152) ranging from 0 to 36 years. According to the literature, the average time for the emergence of vocal problems is around 11 years of professional walk and the longer the time of exposure to teaching, the greater the likelihood of arising vocal alterations (XAVIER;SANTOS;SILVA, 2013).

Variable	Elementary school teachers who teach in a remote context	
	n	%
Daily remote working hours		
Up to 1h/day	1	1,60
Up to 3h/day	4	6,30
Up to 5h/day	20	31,30
Up to 6h/day	15	23,40
8h or more per day	24	37,50
How many subjects do you teach		
One subject	23	35,90
Two subjects	12	18,80
Three subjects	5	7,80
Four or more subjects	24	37,50
Additional subjects		
No	25	39,10
Yes	39	60,90

Table 1- Characterization of the sample regarding the variable remote workload, number of subjects taught and complementary contents. João Pessoa, 2021.

Source: survey data, 2021.

As shown in table 1, about 37.50% (n=24) of the professionals had a workload of eight hours or more per day, and the majority taught four subjects or more (37.50%; n=24). The excessive workload is related not only to the need to create content to be exposed in synchronous and asynchronous classes in a complementary way (60.90%; n=39), but also to the moment of exposition of the content. Congruent with the exposed data, it is noted that the excessive workload can lead to a decrease in the social well-being of teachers (MARÇAL et al., 2021).

Variable	n	%
Current Work Environment		
The environment is quiet	14	21,90
There is noise, but it is not constant and does not bother me	34	53,10
There is noise, it is constant and it hinders my activities	16	25,00

Table 2 - Characterization of the sample regarding the variable current work environment. João Pessoa, 2021.

Source: survey data, 2021.

Among the vocal risk factors of environmental origin, the literature highlights the presence of noise (LIMA-SILVA et al., 2012). However, in this study, it was observed that 53.10% (n=34) considered that there is noise, but it is not constant and does not hinder their work. Therefore, given the data, it is observed that teachers have self-perception of the presence of noisy agents, but most of them do not perceive it as disturbing their activities. This finding may be related to the adaptations that teachers had to make in their homes to create a suitable environment for teaching remotely, which may have favored the reduction of noisy agents.

Variable	Yes %	No %
Elements considered unfavorable or not in the work environment		
External Noise	70,30	29,70
Dust	6,30	93,80
Humidity	1,60	98,40
Inadequate furniture	35,90	64,10
Lighting	28,10	71,90

Table 3 - Characterization of the sample regarding the elements considered unfavorable or not in the work environment. João Pessoa, 2021.

Source: survey data, 2021.

In the face-to-face modality, an aggravating factor of vocal problems is the existence of dust and humidity in the teachers' workplaces (FREITAS et al., 2019). However, with the new educational construct, Distance Learning (DL), it was noted that only 6.30% of the teachers had problems related to dust and 1.60%, complained about humidity in their workplace, making it clear that these factors are not aggravated by the new situation.

The agent inadequate furniture was not found in the literature as causing some kind of hindrance, however, there is a set of appropriate devices that promote better body posture integrating a coherent speech since the upright posture is the one that has a greater significance in the production of sound (CARNEIRO; TELES, 2012). Congruent to this, as observed in Table 4, most of the teachers (85.90%; n=55) needed to adapt their work environment, and the furniture factor may be included among the adaptations made.

As for the unfavorable factors for voice qualification, it was observed that 70.30% of the teachers said that there is external noise when they are working. This problem, added to excessive voice demand and without adequate vocal conditioning, can promote vocal alterations as observed in the literature (LIMA-SILVA et al., 2012).

Variable	n	%
Performed environment adaptation		
Yes	55	85,90
No	9	14,10
Total	64	100

Table 4- Characterization of the sample regarding the performance of adaptation of environments. João Pessoa, 2021.

Source: survey data, 2021.

With the need to promote social distance, it became necessary the implementation of remote teaching, which resulted in changes in the interaction between individuals and the available infrastructure (FEITOSA et al., 2020). In view of this, in the current research, it was noted that 85.90% (n=55) of the teachers needed to adapt their work environment to continue teaching their classes. These teachers had no previous preparation or training to deal with remote teaching. Thus, they were not able to adapt favorably and comfortably to the new work environment, since noise and inadequate furniture are present factors that interfere with the classes and the teachers' vocal health, as shown in table 3.

Variable	Elementary school teachers who teach in a remote context	
	n	%
Stressful work rhythm before the pandemic		
No	7	10,90%
Yes	28	43,80%
Sometimes	29	45,30%
Currently stressful work rhythm		
No	6	9,40%
Yes	44	68,80%
Sometimes	14	21,90%

Table 5- Characterization of the sample regarding the variable stressful work rhythm before the pandemic and stressful work rhythm after the pandemic. João Pessoa, 2021.

Source: survey data, 2021.

With regard to stress, the questioned teachers already believed they had a tiring routine before the Covid-19 pandemic, but it was not recurrent (45.30%; n=29). With the arrival of the pandemic and the changes in the teaching model, this gradient increased, with about 68.80% (n=44) of professionals saying that their work became more stressful. Such data must be taken into account since stress can be a risk factor for the development of vocal disorders in teachers (GIANNINI; LATORRE; FERREIRA, 2016).

Variable	Elementary school teachers who teach in a remote context	
	n	%
Voice hoarseness and its frequency		
Never	3	4,70%
Rarely	18	28,10%
Sometimes	35	54,70%
Always	6	9,40%
Don't know	2	3,10%

Table 6- Characterization of the sample according to the variable hoarseness present in the voice and its frequency. João Pessoa, 2021.

Source: survey data, 2021.

Regarding the presence of hoarseness and its frequency, 54.70% (n=35) of the interviewed teachers pointed out that they feel it sometimes. Hoarseness is a voice disorder that can be caused by several factors such as: shouting, gastroesophageal reflux, allergies, humidity, dust, speaking at high intensity for a long time, among others (VIEIRA, 2012). A large part of these professionals do not promote self-care with the voice, so it is necessary that there is awareness of these teachers so they can develop their activities with quality of life and vocal health, during and after the remote teaching model (DA SILVA, 2019).

Variable	Elementary school teachers who teach in a remote context	
	n	%
Vocal fatigue and its frequency after classes		
Never	1	1,60%
Rarely	13	20,30%
Sometimes	35	54,70%
Always	11	17,20%
Don't know	4	6,30%

Table 7- Characterization of the sample according to the variable vocal fatigue and its frequency after classes. João Pessoa, 2021.

Source: survey data, 2021.

In relation to vocal fatigue, this is the most frequent symptom in individuals who use their voice occupationally, as is the case of teachers (PENHA et al., 2021). This symptom is more present in women and more common between 20 and 40 years of age. In this research there was a predominance of women, which may justify in part, the appearance and high frequency of this vocal symptom. It is worth noting that there were teachers who reported always feeling vocal fatigue after classes in remote education, so this finding shows that there may be possibility that the teacher already has some vocal pathology installed and

that deserves care (PEIXOTO, 2019).

In general, the development of this research was extremely important, because it is a pioneering study that addresses the working conditions of elementary school teachers in remote teaching, the aspects that may cause interference in the voice and their vocal self-perception. Such findings aim to add scientific data to the literature and bring out richer and more integrated discussions on the subject and, at the same time, inform, prevent and help promote teacher's vocal health. Thus, there is a need for further research in the area that investigates the possible factors that may affect the quality of life, voice, communicative performance and well-being of teachers in the period of remote teaching, as well as the importance of implementing vocal health programs that aim to promote knowledge in voice so that teachers can promote self-care.

4 | CONCLUSION

The present study found that as for the working conditions in remote teaching, elementary school teachers reported an increase in the workload and the elaboration of supplementary content. Moreover, they reported the presence of noise, inadequate furniture to develop their profession and increased stress with the new teaching model. Regarding vocal self-perception, most teachers indicated that the most frequent symptoms are hoarseness and vocal fatigue.

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